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Reproductive Choices for Women Living with HIV on ART: The Views of Providers and Clients on Contraception and Fertility

BY

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(2013)

Declaration

I hereby declare that this dissertation is the original work of **ESNART MWABA NUNKWE**. It has been prepared in accordance with the guidelines of MPH dissertation of the University of Zambia. This dissertation has not been submitted elsewhere for a degree at this University or any other university.

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The University of Zambia approves this dissertation by **ESNART MWABA NUNKWE** in partial fulfilment of the requirements for the award of the Master of Public Health degree (MPH) by the University of Zambia, Lusaka.

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Dedication

This thesis is dedicated to my family who have never failed to give me moral support and teaching me that even the largest task can be accomplished if it is taken one step at a time.

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I would like to thank Dr Charles Michelo and Dr Ben Chi without whom this work would not have been complete. They have been ideal thesis supervisors. Their advice, insightful criticisms and patient encouragement aided the writing of this thesis in innumerable ways. Both have provided hours of review and consultation, I am grateful to them for their contributions.

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Abstract

Objective: The main objective of this study was to assess the reproductive choices for Women Living with HIV on ART in the urban health centres within Lusaka.
Methods: Nine hundred and fifty six HIV-positive women receiving care in the zoned health centres were randomly sampled and 12 health care workers who were purposefully sampled and were available in the ART setting participated in the study. A survey questionnaire, in-depth interviews and focus group discussions were the main data collection tools used. Quantitative data was analysed using SPSS while qualitative data was analysed using qualitative content analysis rooted in grounded theory (Precaution Adoption Model (PAPM).
Results: The majority of the respondents in this study n = 503 (64%) felt that it was important to be safe from becoming pregnant whereas n = 429 (46%) felt that it was not. Health workers counselled the respondents on nearly all of the available contraceptive methods, with an emphasis on the oral pill, injectable hormonal drug, and on male and female condoms – with the greatest emphasis on the male condom. The reasons that women had for selecting particular family planning methods varied temporally. Some women engaged in unprotected sex because their partner was also HIV seropositive. Even in situations when an HIV-positive woman was told of her sero status and given counselling on the risks of mother-to-child-transmission (MTCT), the majority of women would still engage in unprotected sex that often led to pregnancy. Nurses preferentially discouraged the women from getting pregnant using the counselling methods described. The rationale for the counselling methods was based on age, education, medical and gynaecological complications. In the current health care setup, it was not demonstrated that reproductive health issues of people living with HIV and AIDS could be provided within the ART clinic.
Conclusion: As HIV continues to spread among women of childbearing age, there is an increasing need for support programs for infected women regarding sex, safer sex, pregnancy and family planning. The healthcare challenges for this group must be addressed with a two-pronged approach- women must prioritize the risk to their health with repeated exposures to HIV and the healthcare workers must empower them to make these decisions. For this to occur, it is crucial that HIV positive women have easy access to reproductive healthcare counselling in juxtaposition to the ART Clinic. The health care workers that directly counsel these women have a pivotal role in addressing these concerns. Nursing professionals who comprise the bulk of healthcare workers providing these services can play a major role in meeting these needs.

CHAPTER ONE - BACKGROUND

1.0 Introduction

Half of the over 40 million people living with human immunodeficiency virus or acquired immunodeficiency syndrome (HIV/AIDS) worldwide are women (UNAIDS, 2006). Since the introduction of highly active antiretroviral therapy (HAART) in 1996, there have been dramatic reductions both in morbidity and mortality among men and women with HIV (Egger et al., 2002; Anastos et al., 2002; 2004), such that many patients and providers view HIV as a chronic but manageable infection. Like other women of reproductive age, many HIV-positive women desire childbearing and parenthood despite having a chronic illness. HIV-infected women also want safe and effective contraception to prevent unintended pregnancies, prevent acquisition of sexually transmitted infections (STIs), and prevent transmission of HIV to their sexual partners. It is unclear whether advances in HIV therapy and the success of HAART over the past decade have affected fertility desires and contraceptive use patterns of HIV infected women in care. The HIV Cost and Services Utilization Survey found 89% of heterosexually active HIV-infected women reported using at least one contraceptive method in the past 6 months. Seventy-eight percent of women used male condoms, 33% had a tubal ligation and 5% used oral contraceptives (Kanouse et al., 2005). Prior studies suggest that the rate of pregnancy after HIV diagnosis ranges from 18% to 40%, with lower pregnancy rates than before HIV diagnosis (Bedimo et al., 1998; Chen et al., 2001 a, b). Interview data found that 29% of HIV infected women wanted to have children in the future (Bedimo et al., 1998; Chen et al., 2001).

The quotation by Askew and Berer of de Zoysa which states that ‘‘At the societal level, AIDS is changing views about sexuality, sexual behaviour and procreation, and intensifying concerns about human rights. At the level of the individual and the family, AIDS is complicating sexual relationships and threatening the ability to safely conceive and bear children. For those engaged in service delivery, AIDS is changing priorities, increasing the need to address the other sexually transmitted infections,

influencing recommendations on contraceptives, and frustrating abilities to counsel clients seeking advice on issues as far-ranging as infant feeding and partner relations'' (Askew and Berer, 2003) sets the theme for this study which is about reproductive choices for Women Living With HIV and AIDS. There is growing recognition of the reproductive decisions faced by HIV-infected women worldwide. Cohort studies of HIV-infected women from sub-Saharan Africa, Europe, and North America show that many HIV infected women choose to have children after learning of their infection and that a few do not (Nebie et al., 2001; Chen at al., 2003; .2, 3).

There has been increasing attention to meeting health care needs of HIV infected women globally. Despite the increasing attention to the health-care needs of HIV-infected women in resource-limited settings, most notably about antiretroviral therapy, support for reproductive choice in HIV-infected individuals in these regions has lagged behind. Although the use of contraception by HIV infected women in developing countries has been described by some policymakers as an imperative within HIV treatment services, there has been little consideration of the range of different issues that HIV infected individuals face in making reproductive decisions (Shelton et al., 2004).

There have been many contradictions on reproductive health matters concerning women who are infected with HIV. For instance, it has been found that increasing contraceptive use by HIV-infected women can decrease the number of unintended pregnancies and thus reduce maternal death and vertical transmission of HIV. However, more than 30 years into the HIV/AIDS epidemic, little evidence-based guidance directs family planning providers and HIV clinicians regarding contraception choices. While this is the case in some cases, contraceptive use is discussed as not a necessity on account of myths (Wilcox et al., 2001; WHO, UNICEF, UNFPA, 2007). Research has shown that the probability of an uninfected woman acquiring HIV with one act of penile–vaginal intercourse ranges from 1/1000 to 1/10, depending on cofactors such as HIV disease severity, presence of concomitant sexually transmitted infections or male circumcision status (Gisselquist et al., 2004; Cohen, 2007; Powers, 2008). Comparably, the probability of becoming pregnant with one act of unprotected intercourse is estimated to be 1/25 to 1/3,

dependent upon co-factors such as day of the menstrual cycle and past history of sexually transmitted infections which can result in tubal infertility (Dunson et al., 1999; Wilcox et al., 2001). Although conception is most likely to occur in the 6 days prior to ovulation, the timing of this fertile window is unpredictable (Dunson et al., 1999; Wilcox et al., 2001). Contraceptive use to protect against unintended pregnancy must be used correctly and consistently throughout the menstrual cycle, with every act of intercourse. Current guidance for contraceptive use by HIV-infected women is limited, conflicting and in need for additional research to guide clinical practice. Fourteen million women are estimated to be infected with HIV in sub-Saharan Africa and the reproductive health statistics for these women are staggering (UNAIDS 2007). One in 22 women has a lifetime risk of dying due to pregnancy complications (WHO, UNICEF, UNFPA, 2007). Although the unwanted pregnancy rate in sub-Saharan Africa is estimated to be 20–40%, only 21% of partnered women are using modern contraception, and an estimated 20–35% of women have an unmet need for contraception (Hubacher et al., 2008). Contraception provision is cost-effective, can improve the quality of life of HIV-infected women and their families, and can ultimately reduce the number of infants born with HIV (UNPF, 2007; Hubacher et al., 2008). The gaps in knowledge regarding biologic interactions between contraceptives and HIV and antiretrovirals (ARVs) need to closed and then applied to practice.

With the HIV/AIDS pandemic showing few signs of abating in the near future, especially in developing countries, governments and international organizations have been planning multi-sectoral approaches for prevention of HIV transmission, and treatment and care for those living with HIV and AIDS including reproductive health (Askew and Berer (2003).

For a time now and from a policy and programmatic point of view, the fertility-related needs of Women Living With HIV and AIDS have not taken central stage in most developing countries. There has been little concern on how the entry points represented by family planning and HIV related services can ensure access to contraception, abortion and fertility services for Women Living With HIV and AIDS. As many Women Living With HIV and AIDS are now aware of their status, it is

important to look at how reproductive health services can be provided both inside and outside HIV-related services-most especially inside the facility. As more than 80% of all women living with HIV and their partners are in their reproductive years, (ZDH, 2007; Zambia National HIV/AIDS/STI/TB Council, 2000) many will continue to want children after learning their positive status, whether to start a family or to have more children. Others may wish to regulate their fertility, so that they can decide whether to try for a pregnancy as shown in some studies (Stanwooda et al., 2007; Dago-Akribi et al., 1999). With the increasing availability of antiretroviral treatment in Zambia and improvement in health status, there may be a renewed interest in sexual relations and the desire to have children for women and men living with HIV as seen elsewhere (Degu et al., 2006). When it comes to family planning choices, when only one partner is HIV positive, the potential risk of transmitting HIV to the uninfected partner as well as the possibility of infection with other STIs should be taken into account. When both partners are living with HIV, possible re-infection with HIV has to be considered (Gottlieb et al., 2004), although there is still uncertainty regarding the risk and consequences of re-infection (Smith et al., 2005; Marcus et al., 2005). These issues may be perceived differently depending on factors such as living in a resource-poor country with limited access to both antiretroviral therapy and STI diagnosis and treatment and the level of condom use (Mitchell and Stephens, 2004).

There has been encouraging progress in Zambia in providing antiretroviral treatment for Women Living With HIV and AIDS. However, the continuum of care that would integrate primary and secondary prevention is still far from being implemented everywhere, and access to HIV treatment is still limited. In addition, Women Living With HIV and AIDS have diverse reproductive health needs, and unmet need for family planning services has often been greatest in countries with high HIV prevalence (Walker et al., 2001) including Zambia. These needs might be better met if reproductive health services were provided jointly with HIV-related services. However, what seems to be well met is the condom service. To date, however, in most settings HIV and family planning services have been offered separately (Berer, 2004, FHI, 2004) and this has made it not possible to attend to the reproductive health needs of Women Living With HIV and AIDS on the spot. In spite of the progress, there are problems.

1.1 Background to the Need for Sexual and Reproductive Health

In 1994, the International Conference on Population and Development adopted a plan of action for achieving sexual and reproductive health. Strategies to achieve this goal by 2015 are guided by the following short list of goals and indicators, which were agreed upon by the United Nations General Assembly's Special Session (UNGASS) on ICPD + 5 in 1999. Some of the principles include:

1. All primary health care and family planning facilities should offer the widest achievable range of safe and effective family planning methods, essential obstetric care, prevention and management of reproductive tract infections, including sexually transmitted diseases and barrier methods to prevent infection.
2. Where there is a gap between contraceptive use and the proportion of individuals expressing a desire to space or limit their families, countries should attempt to close this gap by at least 50% by 2005.
3. By 2010 at least 95%, of young men and women aged 15–24 have access to the information, education and services necessary to develop the life skills required to reduce their vulnerability to HIV infection. Services should include access to preventive methods such as female and male condoms, voluntary testing, counselling and follow-up. Governments should use, as a benchmark indicator, HIV infection rates in persons 15–24 years of age, with the goal of ensuring that by 2010 prevalence in this age group is reduced globally by 25%.

Achieving consensus on the concept of sexual and reproductive health was a major achievement of the ICPD; the major challenge subsequently has been putting this concept into practice. It is relatively straightforward to define the various health care services, including the communication of information that can improve the conditions encapsulated within sexual and reproductive health. It has proved much harder, however, to develop feasible, acceptable, effective and cost-effective strategies for providing these services, particularly given the primary health care programmes in

place in 1994. Having said so, we may then examine the fertility needs of Women Living With HIV/AIDS.

1.2 Fertility-Related Needs of Women Living With HIV

More than 80% of all women living with HIV and their partners are in their reproductive years, (Siegel et al., 2001) and as such, many will continue to want children after learning their positive status, whether to start a family or to have more children. Others may wish to regulate their fertility, so that they can decide whether to try for a pregnancy and when (Net Work, 2001). Fertility-related needs of women and men living with HIV and of discordant couples may differ substantially from those who are HIV negative (GTIJUNP, 2006). HIV infection may affect sexuality because of fear of infecting the sexual partner(s), feelings of guilt and shame aggravated by stigma related to HIV, or emotional or psychological distress, reducing desire for or interest in sexual relations. With the increasing availability of antiretroviral treatment and improvement in health status, there may be a renewed interest in sexual relations and the desire to have children for women and men living with HIV (Degu et al., 2006).

When it comes to family planning choices, when only one partner is HIV positive, the potential risk of transmitting HIV to the uninfected partner as well as the possibility of infection with other STIs should be taken into account. When both partners are living with HIV, possible re-infection with HIV has to be considered (Gottlieb et al., 2005) although there is still uncertainty regarding the risk and consequences of re-infection (Gottlieb et al., 2004; Grant, 2005; Marcus et al., 2005; Smith, 2005). These issues may be perceived differently depending on factors such as living in a resource-poor country with limited access to both antiretroviral therapy and STI diagnosis and treatment and the level of condom use (Mitchell and Stephens, 2004). Regarding demand for contraception, some studies have pointed out that in the absence of HIV-related symptoms, the impact of having HIV on people's decisions regarding childbearing and contraceptive use is generally weak (Chen et al, 2000). A study evaluating prevention of mother-to-child transmission (PMTCT) sites in Kenya and

Zambia has shown that HIV positive women had similar contraceptive use rates to HIV negative women, while in Rwanda the demand for contraception was higher among HIV positive women (Rutenberg and Baek, 2004 ; Ministry of Health ,2007). A much higher percentage of HIV positive women were using contraception in the Dominican Republic and Thailand than in African sites (Rutenberg et al., 2004). Overall accessibility of contraceptives and prevalence of contraceptive and condom use are likely to shape patterns of use among women living with HIV. This has implications for national programmes. In countries with high HIV prevalence and relatively high contraceptive prevalence rates, such as Zimbabwe or South Africa, higher contraceptive use among women living with HIV is also more likely though greater condom promotion and use will be needed. In this country, with very low contraceptive prevalence rates, overall strengthening of family planning and condom promotion is a necessity.

1.3 Contraceptive options and dual protection in general

According to WHO's Medical Eligibility Criteria for Contraceptive Use, most contraceptive methods are considered to be safe and effective for HIV positive women, both with asymptomatic HIV and AIDS (WHO, 2004). Although women living with HIV make up 59% of all adults living with HIV in sub-Saharan Africa, (UNAIDS, 2006) there is still limited evidence of extent or type of contraceptive used by them. For women who do not feel able to negotiate safer sex, contraceptive methods they can initiate may be preferred. An HIV Cost and Services Utilization Survey found 89% of heterosexually active HIV-infected women reported using at least one contraceptive method in the past 6 months. Seventy-eight percent of women used male condoms, 33% had a tubal ligation and 5% used oral contraceptives (Kanouse et al., 2005: 38). Prior studies suggest that the rate of pregnancy after HIV diagnosis ranges from 18% to 40%, with lower pregnancy rates than before HIV diagnosis (Stephenson and Griffioen , 1996; Bedimo et al., 1998; Che at al., 2001). Interview data found that 29% of HIV infected women wanted to have children in the future (Che at al., 2001). Below is a profile of the most used contraceptive methods in Africa.

1.3.1 Hormonal contraception

WHO publications (WHO, 2004, 2006) indicate that there are no restrictions on the use by HIV positive women of hormonal contraception, whether pills, injectables, implants, patches or rings. Women on antiretroviral treatment can use them as well. However, the drug Rifampicin, which is used for tuberculosis treatment, may decrease the effectiveness of oral contraceptives, (WHO, 2004; 2006) and the limited data available suggest that several antiretroviral drugs may either increase or decrease the bioavailability of steroid hormones in hormonal contraceptives. Therefore, the consistent use of condoms is recommended, not only for preventing HIV transmission, but also for preventing unintended pregnancies. Low-dose oestrogen is not recommended for women receiving Rifampicin (WHO, 2006).

1.3.1.1 Oral Contraceptives

Combined oral contraceptives (COCs) can and should fit into the contraceptive choices available to HIV-infected women because COCs are effective and do not require administration every 3 months like injectable contraceptives. Combined oral contraceptives are also easier to dispense and do not require special skills for placement like the IUD or the implant. However, COCs may be under utilized by HIV-infected women based on mixed results that COCs may affect HIV progression or transmission, or that pharmacokinetic interactions between ARVs and COCs may alter the effectiveness or the toxicity of oral contraceptives or ARVs. When oral contraceptives and certain ARVs (such as nevirapine) are concomitantly used, pharmacokinetic interactions result in decreased levels of the ethinyl estradiol and/ or the progestin components of the COC (Sinei et al., 1998; WHO, 2004; Chu et al., 2005). More is known about the effect of ARVs on ethinyl estradiol levels than progestin levels, even though progestin is primarily responsible for ovulation suppression and contraceptive efficacy. Whether changes in ethinyl estradiol and progestin levels result in failure to suppress ovulation is unknown. Based on these limited data, ARV package inserts and HIV treatment guidelines recommend that women who concomitantly take selected ARVs, such as nevirapine, and COCs use an alternative or backup form of contraception. Oral contraceptives do not appear to alter the pharmacokinetics or clinical outcomes of ARVs, but these data are limited

(Sinei et al., 1998; Chu et al., 2005). There are no data on progestin-only pills in HIV-infected women.

Oral contraceptives must be evaluated in individual populations because the potential for variation in the metabolism of COCs and ARVs is substantial. For instance, persons in Malawi have plasma concentrations of nevirapine twice as high as historical cohorts in developed countries, regardless of height, weight, age, sex and other important pharmacokinetic disposition covariates (Hosseinipour et al., 2007). To provide evidence-based guidance, contraceptive and ARV pharmacokinetic and pharmacodynamic interactions need to be evaluated in individual populations and in scenarios which simulate usual practice (Zheng, 2005).

Some studies have pointed out that in the absence of HIV-related symptoms, the impact of having HIV on people's decisions regarding childbearing and contraceptive use is generally weak (Chen et al., 2003). A study evaluating prevention of mother-to-child transmission (PMTCT) sites in Kenya and Zambia has shown that HIV positive women had similar contraceptive use rates to HIV negative women, while in Rwanda the demand for contraception was higher among HIV positive women (Rutenberg and Baek, 2004). A much higher percentage of HIV positive women were using contraception in the Dominican Republic and Thailand than in African sites (Rutenberg and Baek, 2004). Overall accessibility of contraceptives and prevalence of contraceptive and condom use are likely to shape patterns of use among women living with HIV. According to WHO's Medical Eligibility Criteria for Contraceptive Use, most contraceptive methods are considered to be safe and effective for HIV positive women, both with asymptomatic HIV and AIDS (WHO, 2004). Although women living with HIV make up 59% of all adults living with HIV in sub-Saharan Africa, (UNAIDS, 2006) there is still limited evidence of extent or type of contraceptive used by them. For women who do not feel able to negotiate safer sex, contraceptive methods they can initiate may be preferred.

1.3.1.2 Injectable hormonal contraceptives

Use of progestin injectable contraceptives such as depomedroxyprogesterone-acetate (DMPA) has been associated with an elevated HIV viral set point and a greater viral diversity during primary infection, which can result in more frequent HIV-1 replication and more rapid disease progression (Baeten et al., 2007). In Zambia, women who used DMPA had slower progression of HIV disease than women using COCs (Stringer et al., 2007). No study has reported increased HIV transmission from a woman using injectable progestin contraception to male sexual partners (Clark et al., 2007). No clinically important pharmacokinetic interactions between DMPA and a selection of ARVs investigated (nelfinavir, efavirenz, nevirapine, lamivudine and zidovudine) have been reported, and two studies found ovulation suppression was maintained (Cohn et al., 2007). Side effects and efficacy in HIV-infected women using DMPA, both on and off ARVs, have been shown to be similar to those seen in women who are not HIV infected (Nanga et al., 2008).

1.3.2 Intrauterine device (IUD)

IUDs can be used in case of HIV infection, except for women with AIDS and those not on antiretroviral therapies (Mayhew, 1996). Limited evidence shows that IUD use by HIV-infected women has not been associated neither with increased risk of infection-related complications nor with HIV cervical shedding (Askew and Maggwa, 2002). The fact that copper-bearing IUDs may increase menstrual bleeding, and subsequently the risk of anaemia, has to be taken into account in case of HIV positive women. Some authors have raised caution in advising IUD use for women at risk of STIs and pelvic inflammatory disease (PID), such as sex workers or other women in a context of high STI prevalence (Askew et al., 1998).

1.3.3 The Diaphragm

The diaphragm is a candidate for a female-controlled method that could reduce women's risk of acquiring HIV and other STIs (Cohen, 2002; Diaphragm Renaissance, 2002; Moench et al., 2001). Based on current knowledge regarding the pathways of HIV infection for women and evidence that the cervix is a site of particular susceptibility to HIV and STI acquisition, scientists have bolstered the case for internal barrier devices that cover the cervix. The diaphragm has many advantages. It is safe, has limited side effects, and does not interfere with natural hormones. A woman can insert the diaphragm up to 6 hours before intercourse, and she can use it without her partner's knowledge (Stone et al., 1999). In addition, because the diaphragm is worn completely inside the vagina, it is unlikely to interfere with intimacy and sexual pleasure. The diaphragm can be reused up to 3 years and, therefore, the cost of a diaphragm over time is low. Finally, the diaphragm could serve as a mechanical barrier device to hold microbicides (currently under development) and, thereby, provide dual protection against pregnancy and HIV/STIs. The diaphragm was investigated as a method to prevent HIV acquisition in women in South Africa and Zimbabwe. However, with a contraceptive effectiveness of 80%, and a marked lower rate of condom use (54%) in the group who received the diaphragm compared to the control group (85%), this may not be an ideal contraceptive method (Trussel, 2008).

1.3.4 Female and Male Sterilization

Female sterilisation is often the most commonly used family planning method in developing countries, whereas in developed countries reversible methods are more popular (Mayhew et al., 2003). Some studies have shown that HIV positive status influences fertility intentions, (Mayhew, 2002) especially the desire to stop childbearing among those who have completed their families, who therefore may favour the choice of a permanent method (Lush, 2002). Male sterilisation (vasectomy) is also an option but its use among HIV positive men has not been documented.

1.3.5 Emergency Contraception

Emergency contraception in the form of two levonorgestrel tablets or insertion of the IUD up to 5 days after unprotected intercourse is an effective postcoital method to prevent pregnancy (Padian et al., 2007). Emergency contraception education and interventions should be offered to all HIV-infected women and should accompany condom education. Use of copper intrauterine contraception has the added benefit of highly effective, long-acting reversible contraception in the woman who has received the IUD. Emergency contraception can help to prevent unintended pregnancies. Immediate access is crucial for method effectiveness. For women living with HIV who suffer from sexual violence, access to emergency contraception may be vital (Caldwell and Caldwell, 2002). Concerns have been raised that some women could use emergency contraception in place of regular contraception. However, while access to information improves knowledge of this method, it does not increase its use (Delvaux et al., 2003). In general, women living with HIV and discordant couples still seem to have far too little knowledge of emergency contraception. For example, in South Africa, where contraceptive prevalence is quite high compared to many other African countries, qualitative studies conducted among HIV and Prevention of Mother To Child Transmission clinic attendees showed that women and men living with HIV had little knowledge of emergency contraception or how to access it (Flemming, 1998; Besser, 2000). As with other non-barrier contraception, emergency contraception does not protect against STI or HIV transmission and information on risk reduction needs to be routinely given with it.

1.3.6 Condom

Condoms, in particular, should always be promoted in HIV-infected couples, but for condoms to provide effective contraception they must be used consistently and correctly. Such adherence is a challenge, resulting in a pregnancy rate of 15% among first-year users of the male condom (Saga, 2003). Current data suggest that both male and female condoms are highly effective in protecting against pregnancy (failure rates for typical use are 15% versus 21% and for perfect use 2% versus 5%,

respectively) (Byrne, 1998). A study comparing the female and the male condom for their effectiveness in preventing pregnancy showed that the two methods are substantially the same (Hawes et al., 2003). Four meta-analyses of condom effectiveness put the range at 69–94%. Data from people accessing services for antiretroviral treatment and PMTCT in Ghana, Ethiopia, Kenya, Rwanda and South Africa show that male condoms are the contraceptive method most frequently used by people living with HIV (Pachauri ,1994; Solo et al., 1999; Moodley et al., 2003; Besser, 2000,Machel, 2001;Manzini, 200). This differs somewhat from data on contraceptive method mix in general populations. Interventions to promote condom use in sub-Saharan Africa and Asia have generally led to increased condom use, mostly in commercial and casual sex, while levels of condom use are lower as the degree of intimacy and stability of the relationship are greater. However, condoms have rarely been promoted to stable couples either. Using condoms demands communication and negotiation. Recent studies provide a more encouraging picture in terms of women's ability to influence men's sense of sexual risk and condom use. One study has shown that married women play an important role in condom use, which depended on the woman's subjective sense of HIV risk (but not the man's).

1.3.7 Dual Protection

Protection against both unwanted pregnancy and STIs is referred to as ‘‘dual protection’’ (Crates et al., 2002). Condoms are the mainstay of dual protection, alone or in combination with another method(s). The avoidance of penetrative sex is another means of achieving dual protection. When condoms are used in combination with another method, it can be with a non-barrier contraceptive method, male or female sterilisation, or a second barrier method, with the back-up of emergency contraception and/or induced abortion. Condoms with the back-up of emergency contraception are increasingly being used by young people (Myer et al., 2002). Using condoms as a stand-alone method for dual protection may be compromised because sexually active people often are unwilling to use condoms all the time, for a variety of reasons, which reduces their protective value. Men's general dislike of condoms and women's need to rely on their male partners are often involved. Thus, much of the

effectiveness of dual protection against unwanted pregnancy will be contingent on another contraceptive method being used. Empirical studies have shown, however, that the more effective the other method is for pregnancy prevention, the less likely women and their partners are to combine it with condoms (Kuyoh et al., 1999). The challenge also remains how to promote condom use, especially in stable, long term relationships. This is particularly relevant for sero-discordant couples, who are in need of long term adherence to safer sex. Regarding dual method use for pregnancy and STI/HIV prevention, studies have reported diverse rates ranging from 3–42%, (Aklilu et al., 2001) but few data are available regarding people living with HIV. Data suggest that dual use is more likely to occur if partners are concerned about unfavourable consequences of sexual activity (i.e. unwanted pregnancy and/or HIV/STI infection). General health behaviour or personality-related factors play a comparatively minor role.

1.3.8 Termination of Pregnancy

Induced abortion for women living with HIV has been overlooked in research. WHO estimates that about 49 million abortions take place every year (out of about 220 millions estimated pregnancies), of which an estimated 19 million are unsafe. Ninety-five per cent of unsafe abortions occur in developing countries, an estimated 4.2 million in Africa alone (Bakari et al., 2000). The decision to have an abortion is a highly complex issue for many women living with HIV. Too many women still learn late in pregnancy about their HIV status, implying that they not only have to cope with the HIV diagnosis but also leaving no time to consider whether to continue or terminate the pregnancy. Sometimes studies do not even distinguish between induced and spontaneous abortion in their analysis of pregnancy outcomes (de Bruyn, 2003). Data are incomplete, not least because abortion is still legally restricted and stigmatised in so many countries (de Bruyn, 2003).

An HIV diagnosis can have a significant impact on a woman’s decision whether to carry a pregnancy to term (Berer, 2000). Several studies have tried to assess the rate of induced abortion among pregnant women living with HIV in industrialised countries: a French cohort study among HIV positive women reported rates of

pregnancy termination of 63% between 1985 and 1997 (Villar et al., 2001). The availability of antiretroviral drugs may have altered this picture. A European study revealed that the number of induced abortions increased from 42% to 53% in women after HIV diagnosis; however, since 1995 the proportion of births increased significantly, whereas that of induced abortions decreased compared with earlier years (Ayisi et al., 2001). A European multi-centre study found that 22% of HIV positive pregnant women had terminated a pregnancy since their HIV diagnosis, and 29% of them reported more than one termination[1]. The illegality of abortion does not stop women seeking abortion even in unsafe conditions. In a study carried out in Cote d'Ivoire, a third of pregnant HIV positive women terminated a pregnancy in spite of legal restrictions (Gloyd et al., 2001). More research among HIV positive women in developing countries is needed on the complications of unsafe abortion and whether increased access to antiretrovirals is altering decisions about pregnancy termination.

1.3.9 Desire for another pregnancy in women who know they are HIV-positive

In one revealing qualitative study by Aka-Dago-Akribi et al., (1999) among 21 women they interviewed, even though they were repeatedly advised (advise against the wish of the respondents) not to have more children because of their infection, and even though all of them were aware of the risk of mother-to-child transmission of HIV, the desire to have another child continued to be paramount. Six of the women had given birth to only one child at the time of interview and all of them declared that they wanted another child. Two of the six had lost those only children, one died at 9 months and the other at 15 months. One of the two was trying to get pregnant at the time of writing. She had not revealed her HIV status to her partner as she wanted to get pregnant again before telling him. The other was left by her partner when their baby died. Apart from any desire for another child, this woman was afraid of starting a new relationship because of her serostatus; she did not know how she would reveal this to a new partner and feared she would be rejected again. She was also

[1] Centres for Disease Control. The deadly intersection between TB and HIV. Fact sheet.

afraid that a new pregnancy might threaten her health, so she now has a lot of questions about her ability to have children. Nine of the women had had two or three children each at the time of interview. Only three of these women did not want any more children. One of the three, although she felt that she did not have enough children, also felt that another child would bring her too much anxiety. She did not yet know the serostatus of her last baby and felt very anxious about it. The second one affirmed that she did not want more children so as to protect her and to avoid having an infected child. Nevertheless, she asked a lot of questions about having another child and the risk of mother-to-child transmission. The third preferred not to have another child but her partner wanted another one: she had had two children with another man and this baby was her first with this man. He was aware of his wife's HIV status; he was tested too and was himself HIV-positive, but he denied the reality of HIV. The remaining six women had four children or more. None of them wanted any more children, but one declared that if her husband insisted, she would get pregnant again. (This woman's husband had not been informed of her serostatus).

Hence, the overall desire to have more children had remained strong among this group of HIV-positive women: the ones who did not want to get pregnant again were mostly those who had had all the children they felt were enough, i.e. mostly four or more. The others expressed, more or less clearly, a desire for new children, even though this desire was often underpinned by fear (fear for their own health, fear of having an infected child).

Contraceptive use was very low among the eight women who did not want to become pregnant again: only three were using a contraceptive method (two were using condoms, one a progestin injectable); two were not using any method, and two were already pregnant again. One was not having sexual relations. For the two women who were already pregnant again at the time of interview, the pregnancy had not been wanted and had been a surprise because it had started before the end of their post-partum amenorrhoea. Both of them would have preferred to have an abortion but they had discovered their pregnancies too late (at about four months). In terms of their relationships with their partners, nine of the 21 women had not

divulged their seropositivity to their partners for fear of being abandoned or rejected. Twelve women had chosen to inform their partners; in most of these cases (eight of the 12), the husband had reacted well and brought financial and psychological support to his wife. In three cases, the husband denied the reality of HIV and one husband left Lois wife when he learned she had HIV. Even when informed, most partners do not accept to be tested themselves and do not agree to use condoms. Only four of the 21 women said they were regularly using condoms.

In order to show the lived life of a couple with one desiring to have a baby, we present an excerpt of from Aka-Dago-Akribi et al., (1999) about a young lady Dominique.

Dominique's story

Dominique (not her real name), age 29 and a trader, is the mother of a three-year-old seronegative little girl. Dominique was found to be seropositive during her pregnancy with this daughter. She has a good relationship with her seronegative partner, and they have protected sexual relations. Nevertheless, the relationship with her in-laws is difficult. For some time she has noticed, from various remarks that her husband has made that he would like to have another child. Although he is aware of her serostatus, he does not speak openly about it with her. Dominique thinks he is manipulated by his mother. 'You were not married to be a mirror in the house.' As a Muslim, his mother is prepared to propose another wife to her son to alleviate Dominique's apparent difficulties getting pregnant. Dominique feels she must try for another child in order to avoid being asked too many questions about her health. Thus, she would be redeeming herself; denying death, redeeming the relationship with her in-laws, and being recognised in her status as wife and mother. The longer her daughter goes on growing without any major health problems and she herself continues blossoming despite her seropositivity, the more she wants another child.
The couple are mutually supportive and her husband has suggested to her that she find out about having children by other methods (insemination with his semen) because they practice safe sex.

Thus, Dominique is caught up in the dynamics of wanting to please, giving pleasure, and being loved by proving that she is in good health. Nevertheless, she knows there are many worries about the health of a future child.

1.4 Statement of the Problem

HIV was first identified in Zambia at about 1984 and the country currently has one of the highest rates of HIV infection in Southern Africa. The main route of transmission is heterosexual and women in the 20-29 age groups are most affected. Sixteen percent of Zambian adults are HIV+ (women - 18%, men - 13%). In urban areas, two in five women aged 25-39 are infected. Prevalence is significantly higher among young females than their male counterparts. During the 2007 Zambia Demographic and Health Survey (ZDHS), women aged 15-49 and men aged 15-59 were tested to find out their HIV status. Preliminary results of the survey reveal that generally, HIV prevalence has declined from 15.6 percent in 2001/2002 to 14.3 percent in 2007. Analysis by residence indicates that HIV prevalence is twice as high in urban areas (19.7 percent) than in rural areas (10.3 percent). However, in 2008, HIV prevalence in women is estimated to be around 18 per cent in Lusaka within the reproductive age group (ZDH, 2007; Zambia National HIV/AIDS/STI/TB Council, 2000) and this is higher than the other 20 sentinel sites by 1.4% units. The vast majority of Women Living With HIV and AIDS in Zambia, and more generally in developing countries, are unaware of their HIV status and for those below twenty years they may not have a child at all. It is distressing to come to know that one is HIV positive and particularly when faced with a reproductive problem surrounding contraception, fertility and deciding to have abortion. Women Living With HIV and AIDS should be empowered to take informed choices relating to their reproductive lives, free of coercion. Their specific health condition and their socio-economic situation may render them vulnerable in this regard, however, which makes support for their reproductive rights a priority (UN, 1994).

Withstanding these demographic features, there are a number of problems that are related to the reproductive health needs of Women Living With HIV and AIDS. To date, worldwide and especially in developing countries like Zambia, health services for HIV positive individuals have focused primarily on providing prophylaxis against and care for opportunistic infections and delivery of Anti Retroviral Treatment (ART) and not reproductive health. Less attention has been given to provision of appropriate reproductive health services for HIV positive women (Coopera et al., 2007).

Women infected with HIV are without any empirical evidence generally discouraged by some health workers from (a) becoming pregnant, (b) using some forms of contraception and (c) procuring an abortion when they need one. Although there are no official directives to this effect, there has been, until recently, a general feeling in Lusaka among health professionals, the general population and even among some Women Living With HIV and AIDS, that when a woman is HIV-positive, she should not have further children; these women are therefore often advised to avoid any further pregnancies. The concern behind this advice is to prevent the risk of a more rapid progression of HIV infection in the woman, which might occur as a result of pregnancy; the risk of transmission or HIV to the infant during pregnancy, delivery or breastfeeding; and the risk of any child (HIV-positive or not) becoming an orphan in the medium term. This counselling, although directive, is intended to protect the woman and her infant. However, this consensus that has caused a contradiction in HIV and AIDS counselling circles is now being challenged in some quarters. In addition, there are gaps in knowledge and practices with regards to (i) what choices Women Living With HIV and AIDS on ART have, (ii) what health workers in ART units have to provide and (iii) how the reproductive health needs of these women could be met. Given that the background to the reproductive health choices is anectodotal, the question “what are the dynamics of these choices” becomes key.

CHAPTER TWO - RESEARCH AIMS AND MODEL

2.0 Research Questions

Given the statement of the problem, two intriguing principle research questions posed in this study is:

With the ART available through most of Zambia, from the perspectives of Women who are living with HIV and AIDS and health care providers, what are the reproductive choices women on ART need to make concerning contraception- to have or not to have a child?

What role do health care providers play in assisting this choice to meet the needs of these Women Living With HIV/AIDS?

2.1 Research Aims and Objectives

The main objective of this study was to assess the reproductive choices for Women Living With HIV on ART in the urban health centres within Lusaka.

Based on this aim, the specific objectives of the research were as follows:

1. To describe the social demographic factors of HIV positive women on ART
2. To investigate family planning choices Women Living With HIV and AIDS on ART have.
3. To determine what differences or similarities there are between the family planning choices ART health care providers render and what the Women Living With HIV and AIDS and on ART desire.
4. To determine the reasons the Women Living With HIV and AIDS have for selecting particular choices?
5. To develop a framework for an ART model that could meet the reproductive health needs of Women Living With HIV and AIDS who are on ART.

2.2 Model Guiding the Study

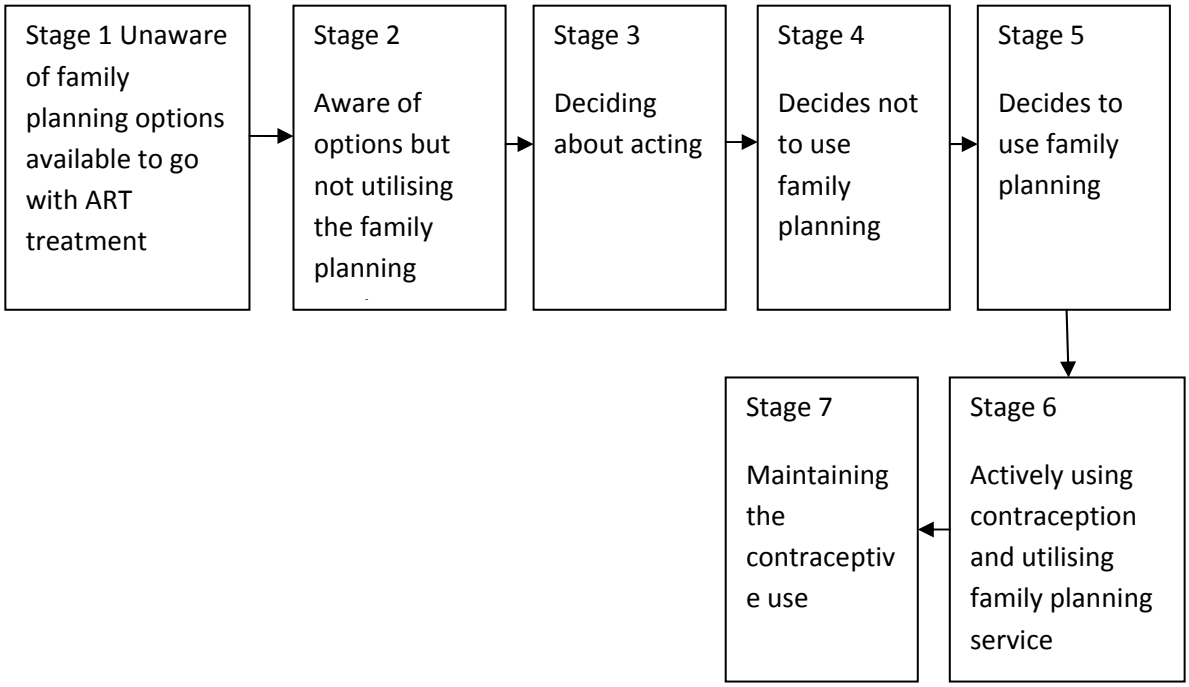
The Precaution Adoption Model (PAPM) was used in this study to situate personal experiences to understand how both the Women Living with HIV/AIDS on ART and the health workers making decisions on family planning (Figs1.4.1 and 1.4.2). The PAPM specifies seven distinct stages in the journey from lack of awareness to adoption and/maintenance of a behavior. It is possible for people to regress in stage, but once they have completed the first two stages of the model they do not return to prior. For example a person does not move from unawareness to awareness and then back to unawareness.

The Precaution Adoption Process Model (PAPM), described in Fig. 1.4.1 and 1.4.2 is based on the stages of change concept. The PAPM however differs in important ways to the Stages of change model. A ‘‘stages of change’’ model explains that preventative behaviours are adopted through a series of decisional changes. Stages of change models work in a variety of populations, age groups (Rogers et al., 2000) as well as for specific health concerns (Davis, 2000). Stages of change offers insights for addressing hard-to-change behaviours such as such as smoking or overeating; it is less helpful when dealing with hazards that have been recently recognised or precautions that are newly available. The PAPM recognises that people who are unaware of an issue, or are unengaged by it, face different barriers from those who have decided not to act. The PAPM prompts practitioners to develop intervention strategies that take into account the stages that precede active decision making. (Theory at a Glance, a guide for health promotion practice, 2nd Edition). The seven-stage PAPM, unlike other health behaviour theories where a person is either practicing or not practicing the behaviour, conceptualizes behaviour change as dynamic and occurring over time. Stage matched interventions have improved progress towards higher stages of adoption in employee exercise programs (Marcus et al., 1998). Classifying people by stage of adoption has been useful in that subjects grouped by stage tend to share similar knowledge, beliefs, attitudes and perceived barriers for the specific behaviour and they often have a different pattern of these attributes than people in other stages (Costanza et al., 2005). The seven-stage PAPM, unlike other health behaviour theories where a person is either practicing or

not practicing the behaviour, conceptualizes behaviour change as dynamic and occurring over time (Blalock et al., 1996).

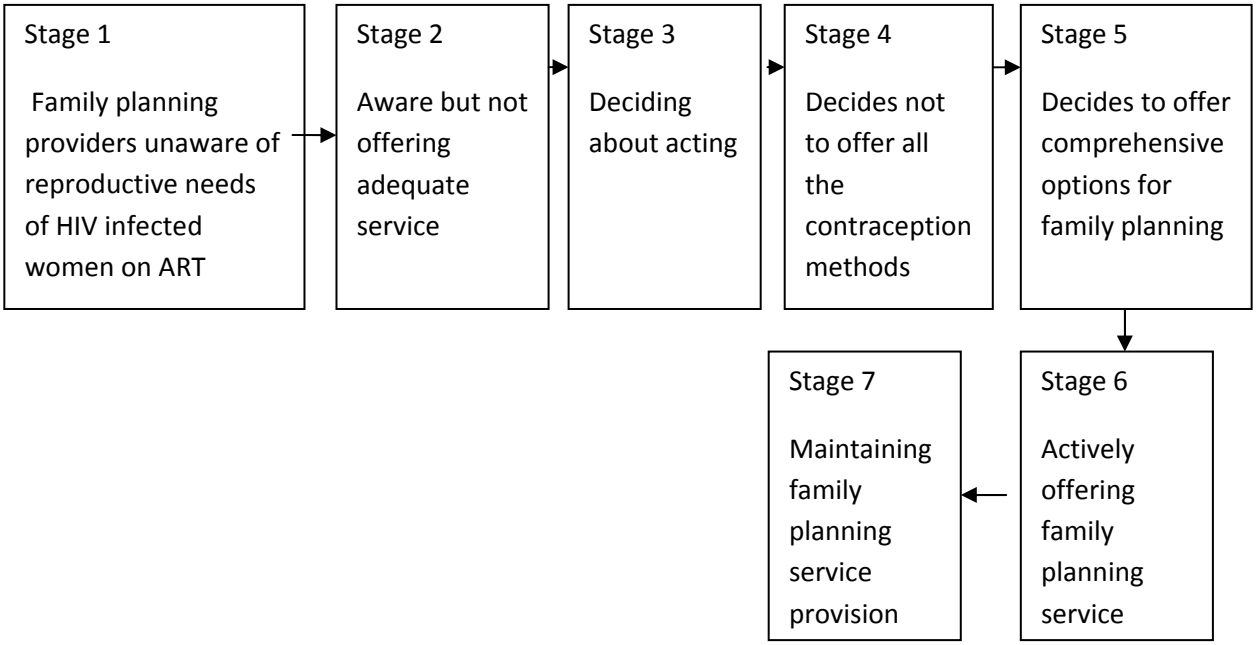
The PAPM (and other stage models) suggest that people at different points in the precaution adoption process behave in qualitatively different ways and that the types of interventions and information needed to move people closer to action varies from stage to stage (Weinstein, 1998). Although the PAPM does not provide a fixed set of variables that differentiate between stage or foster progression from stage to stage (Sniehotta et al., 2005), it is thought that between stages an individual's health beliefs and perceptions (perceived susceptibility, perceived severity, barriers, benefits and self-efficacy) are critical for action. People in action and maintenance have often changed their behaviour and in these stages self-efficacy (confidence in abilities) is likely based on experience rather than perception (de Vet et al., 2005). The model assumes people move through the sequence in order, without skipping stages. However, there is no minimum amount of time one will spend in each stage.

Fig 1.4.1 Precaution Adoption Process Model (PAPM) for patients on ART



Note: The PAPM specifies seven distinct stages in the journey from lack of awareness to adoption and/maintenance of a behavior.

Fig 1.4.2 PAPM for family planning providers



Note: The PAPM prompts practitioners to develop intervention strategies that take into account the stages that precede active decision making (Theory at a Glance, a guide for health promotion practice, 2nd Edition).

CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY

3.0 Study Setting and population

This study was located in Lusaka urban sites. The site has twenty three clinics across four sub districts. The study was conducted in four clinics, one only from each sub district that offers ART services and these are: Kalingalinga, Chilenje, George and Kanyama.

A mixed cross-sectional, quantitative as well as qualitative descriptive study was done. A Cross-sectional design was thought to be appealing for reasons of economy of time and cost and to detract from making causal interpretations. However the study intended to measure key variable(s) for all cases within a narrow time span of about two months, taking into account the inability to directly assess individual change (Baltes, et al., 1988:123) over time.

To answer the study research questions, a mixed methods approach was used (Tashakkori and Teddlie, 2003), which is a procedure for collecting, analyzing and mixing or integrating both quantitative and qualitative data at some stage of the research process within a single study (Creswell, 2005). The rationale for mixing both types of data is that neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of situations. When used in combination, quantitative and qualitative methods complement each other and provide a more complete picture of the research problem (Green et al., 1989; Johnson and Turner, 2003; Tashakkori and Teddlie, 1998).

Jackson's advice was used to plan the data collection process. Jackson says "the decision about which methodology to use is a user decision: users 'still have decisions to make that will draw on their own ethical positions and their own conceptions of the world to be researched (Jackson, 2009: 1298). The underlying assumption is that a paradigm governs the way one both views and knows reality and that to claim simultaneous adherence to another is not only not authentic, but

exposes any insights to the very criticisms levelled by adherents of one to the other. Further arguments by Mingers and Brocklesby (1997:489) support use of a multi-methodology that goes beyond using a single (or, on occasions, more than one) methodology to generally combining several methodologies to capture the richness of the real world paradigm.

This study used a concurrent and sequential mixed methods design, consisting of two distinct phases (Creswell et al., 2003; Tashakkori and Teddlie, 1998). In this design, the quantitative, numeric, data from Women Living With HIV and AIDS and the qualitative data from health workers were collected concurrently first because the two data sources were independent. Health workers were interviewed by the researcher and the survey questionnaire was administered by a research assistant. In the second sequential phase, qualitative data from Women Living With HIV and AIDS was collected following a preliminary quantitative analysis in order to identify typical cases for more in-depth analysis to explain, or elaborate on the quantitative results obtained in the first phase.

In this study, the quantitative data helped identify a potential power of association and occurrence of phenomena and purposefully select informant for the second phase. Then, a qualitative case study approach was used to understand why certain external and internal factors, tested in the first phase, were features of Women Living With HIV and AIDS. The priority (Creswell et al., 2003) in the study was not given to either approach.

3.2 Population and Sampling

Two populations provided samples for this study and these are Women Living With HIV and AIDS on ART and health workers providing ART service. Before the sampling began, the population was divided into four complete sets of non-overlapping subpopulations or clusters. These sub populations comprised registers of Women Living With HIV and AIDS at each one of the zoned health centres. The four zoned health centres acted as geographic boundaries and it is these subpopulations that will be called *clusters*. Classical theory underlying the use of this

sampling mechanism involves first simple random sampling for each of the clusters from the population of clusters. The second stage involved systematic sampling of sampling units from the sampling frame using unequal probabilities of selection (or probability proportionate to size) in each cluster (Cochran ,1977, Sarndal et al., 1997; Lohr ,1999). The populations according to the Lusaka District Health Management Information System (HMIS) were distributed as follows: 2,365 for George compound, 1,778 for Kalingalinga, 3,612 for Kanyama and 2,094 for Chilenje.

3.3 Quantitative Design

3.3.1 Quantitative Sampling

Sampling with probability proportionate to size allowed the larger clusters to have a greater number of sampling elements being selected. Although the sampling unit is the individual subject, the sampling was conducted using the appointment register and if the respondent did not turn up on the appointment day, replacement was done. In order to determine the ideal sample for each cluster, Yamane's formula was used.

$$n = \frac{N}{1 + N\,(e)^2}$$

Where: ***n*** is the desired sample size

N is the known population size and

e is the precision set at .05

The level of precision ***e*** or reasonable certainty, sometimes called sampling error, is the range in which the true value of the population is estimated to be. This range is often expressed in percentage points, (e.g., ± 5 percent). If a 95% confidence level is

selected, 95 out of 100 samples will have the true population value within the range of precision specified earlier. There is always a chance that the sample one obtains does not represent the true population value. Noting that there are 7,000 women of child-bearing age living with HIV/AIDS on ART in the urban clinics, the ideal sample was calculated to be 956. It should be stated that Yamane's formula factors 10% to the sample size to compensate for persons that the researcher is unable to contact. Further the formula embodies 30% to compensate for non response.

Table 3.3.1 Quantitative Sampling profile

Site	Kalingalinga	Kanyama	Chilenje	George
Population	1 778	3,612	2,094	2,365
Ideal sample	333	364	353	353
Actual processed questionnaires	242 (72.6%)	283 (77.7%)	180 (50.9%)	227 (64.3%)
Shortfall	91	81	173	126

In addition, in order to determine the health worker sample size, recognising that the population is small – about 9 health care workers provide ART care, availability sampling was used in this case. The growing appreciation of availability sampling in health contexts and the interest in recruiting not hard to reach populations into research have led to the increased use of availability venue-based sampling. Since the population is small, it is logically prudent to conduct a survey research. The study was not interested in examining health worker populations to determine the relative incidence, distributions and interrelations of health behaviour variables (Kerlinger, 1986). In other words, inferences about the entire population are not the purpose of the study.

3.3.2 Developing and Piloting the Contraceptive Survey Questionnaire

The contraceptive survey was developed following an inductive literature search of peered reviewed journals covering HIV and reproductive health. A sample survey questionnaire was developed following a critical assessment of variables that were used in the most cited studies. On the basis of this study and in order for the questionnaire to meet content and face validity, qualitative guidelines previously established were referenced (Hatch and Lazaraton, 1991; Alderson and Banerjee, 2002). Fulcher (1996) and Cumming (1994) have supported the qualitative process of developing a questionnaire cautions that "researchers typically agree, in theory, that both qualitative and quantitative methodologies are essential to the accurate development and validation of a new questionnaire, yet goes on to note that "quantitative methods of research have probably been over dominant and most notably the use of reliability analysis. The original version of the survey questionnaire Appendix had 37 items and after pilot testing, some of the items were refined and others were removed. The final questionnaire that was used had 29 items (Appendix I). The procedure of the piloting was as follows:

As stated in the earlier paragraph, a pilot study being a small-scale version of the larger proposed study was then done at Chainama Health centre in Lusaka. Chainama was selected conveniently for having similar urban characteristics. The importance of this pilot study rested on the need to confer reliability of the tool and to yield data to assess cost, feasibility, and methodology and data analysis for the main study. Noting that the instrument that was going to be used was new, this pilot study provided direction for its refinement. Nunan, (1992); Churchill (1979) and Polit and Beck (2004) advise researchers to use either the quantitative way or qualitative way. In this study, the researcher opted to use the qualitative way. In order to be sure that the instrument was dependable and reliable, it was found to be research prudent to look into how individual items were scored by respondents in the piloting phase of the questionnaire. The qualitative method was chosen as the main reliability check method because it was possible for the researcher to establish the stability of the items that yielded a similar measure from t_1 (day one of the test) to t_2 (day 30 of the second test). Although validation of data collection instruments is a necessary step in

research (and this is emphasised in research manuals e.g. Seliger and Shohamy, (1989), Hatch and Lazaraton, (1991) and MacNealy (1999), there is little detail and practical guidance on how validation could be conducted. As Converse and Presser (1986:52) point out when discussing the issue of pre-testing questionnaires, they assert that there are no general principles of good pre-testing, not even systematisation of practice, not even consensus about what is expected; regrettably, researchers do not leave any records for each other. Alderson and Banerjee (2002) make similar arguments and the researcher's experiences and readings confirm that few studies actually report validation data processes of the pilot testing process. This makes it practically difficult to obtain information about commonly accepted practices and standards. The decisions that the researcher made in the validation process are therefore based partly on the sense of plausibility regarding making decisions in dealing with practical constraints.

Two important considerations were taken using the test–retest method: first, the variables to be measured could be subject to significant change (wording) and second, repeated administering of the same questionnaire may result in the sensitisation of the participants to the issue being researched. Both concerns are related to the time between t_1 the test and t_2 retest, which implies that the decision about the appropriate length of time to re administer is crucial; however, little information is available on the time factor in the literature.

A small sample of thirty women was used to validate the questionnaire. Two tests were administered and the results of the first test and the second test were compared for consistency to determine the reliability of the questionnaire. Nine out of the thirty respondents gave varying responses on a number of items that demonstrated that the questionnaire was not stable. Respondents that showed marked variation of responses from the first and second were interviewed to elicit the trail of thoughts as the piece of information was presented to show what they intended to say throughout. The following were key questions that guided this interview:

1. Was the questionnaire burdensome?
2. What was the reason for the changes in the responses from test one to test two?
3. How do we know what we think they think on poverty, stress and coping is really what they think?
4. What type of underscoring and over scoring ‘problems’ exist for this target group?
5. In what ways could the problems be fixed?
6. When the problem is ‘fixed’, does replication of the techniques show that the problem has disappeared?
7. Is there evidence that the fixed problem produces a question with less measurement error than the original one?

From the second test, the researcher eliminated items that seemed to be unstable and seemed repetitious and following from this, the researcher developed the current questionnaire that appears in the Appendices.

3.3.3 Administration of the Questionnaire

The questionnaire was administered only to Women Living With HIV and AIDS attending scheduled appointments at ART clinics and women members of the HIV and AIDS support group. Survey questionnaires were distributed on a day the women were getting drug refills or on a special appointment. The respondents were given a cover letter indicating that participation was voluntary and confidential. No identifiers were included on the survey questionnaires and interview tapes (See Appendices).

3.3.4 Quantitative Data Analysis

Quantitative data was analyzed with SPSS version 14.0 (Statistical Package for the Social Science, Chicago, IL, USA). Descriptive analyses were performed of population characteristics using chi-square or Fisher’s exact tests for categorical variables and Student’s ***t*** tests for continuous variables. The researcher performed

bivariate analyses of demographic and contraceptive factors looking for associations for desire for future or current childbearing or not.

3.4 Qualitative Design

3.4.1 Sampling

Qualitative data came from two sources: from the women themselves and from health care workers providing care to People Living With HIV and AIDS. Therefore, sampling was done differently. The women were sampled using maximum variation sampling that first analysed the quantitative sample to get patterns of regular and irregular phenomena as well as demographic features to create a composite sample of typical women to be interviewed. To reach out to the women, the researcher relied on the health care providers who kept contact numbers for their clientele that they used for routine monitoring and visitation.

As for the health workers, all were recruited using expert and availability sampling due to the fact that the health worker population rendering ART services were distinctive and small. There was an average of five per health centre, and nearly every one participated in the study.

3.4.3 Conducting In-depth Interviews

The women were selected using maximum variation sampling. In-depth interviews were conducted by the researcher within the health centre in the counselling rooms or in the foyer away from the hearing of others. Between December 2010 and April 2011, interviews were done with Women Living With HIV and AIDS separately. When certain parameters could not be captured in the survey tool, such as lived experiences, the latter source was relied on for analyses.

In-depth interviews were conducted at the time when the respondents had time at a place they considered convenient. Interviews were recorded. The eligible respondents were asked by the researcher if they would be willing to be recorded. Interviews began with general opening questions, which were framed as follows:

“Noting that you are HIV positive and are on ART, please tell me about your experiences concerning sex and the desire either to have a child or not.” From this then specific experiences were continuously probed for depth below surface responses.

3.4.4 Conducting Focus Group Discussions with Health Workers

Focus group discussions were conducted by the researcher within the health centre away from the hearing of others. Three focus group discussions were held with health care workers in each health centre.

Focus group discussions were conducted at the time when the respondents had time at a place they considered convenient. Discussions were recorded. The eligible respondents were asked by the researcher if they would be willing to be recorded. Interviews began with general opening questions, which were framed as follows: “Noting that you are HIV positive and are on ART, Please tell me about your experiences concerning sex and the desire either to have a child or not.” From this then specific experiences were continuously probed for depth below surface responses.

Focus group discussions began with general opening questions, which were framed as follows: “Please tell me about yourselves; Please describe for me, as completely, clearly as you can an experience with People Living with HIV and their reproductive health matters.” From this then specific experiences were continuously probed for depth below surface responses.

3.5 Qualitative Data Analysis

Qualitative data was analysed using qualitative content analysis rooted in grounded theory as presented by Glaser and Straus (1967). The underlying assumption of grounded theory and content analysis is that meaning is constructed through social interaction (Charon, 1979; Hurley-Wilson, 1988) and the primary analysis was conducted on the experience of the health worker. The researcher systematically

compressed many textual paragraphs or words into fewer content categories based on explicit rules of coding (Krippendorff, 1980; Weber, 1990; GAO, 1996; Holsti, 1969: 14). The analysis involved the following steps:

1. Each text was read as many times to identify headers that will themes. A theme is a recurring regularity developed to link subthemes and categories later on.
2. Sub headers (standing in for subthemes) were then be defined considering that headers will have more than one descriptive organized mutually exclusive element (themes). Essentially sub headers were linked to the questions asked.
3. From the sub headers, categories being sub units of themes, which have a relevance to answering research questions, was identified and be delineated and deposited in the computer into appropriate nodes. Nodes are the main categories of research issues. Categories are the core feature of qualitative content analysis. A category is a group of content that shares a commonality. Krippendorff (1980) emphasizes that categories must be exhaustive and mutually exclusive. This means that no data related to the purpose should be excluded due to lack of a suitable category. Furthermore, no data should fall between two categories or fit into more than one category.

One of the most basic decisions when using qualitative content analysis is selecting the *unit of analysis*. In some of the literature that has been surveyed, a unit of analysis refers to a great variety of objects of study, for example it may refer to, a person, a program, an organization, a classroom or a clinic (Mertens, 1998), or a community, state or nation (Patton, 1987). Other authors have considered the unit of analysis as interviews or diaries in their entity, and the amount of space allocated to a topic or an interaction under study (Kondracki *et al.,* 2002). They may include parts of the text that are abstracted and coded (Weber, 1990), or every word or phrase written in the transcript. In this study, the suggested and most suitable units of analysis are the written texts and these are field notes, transcripts and observations. Since the data was in textual form, this data was reduced and analyzed on the computer using the N Vivo computer package.

3.6 Ethical Considerations

A written consent was obtained from the women after explaining the purpose of the research and ensuring that they understood clearly the issue at hand. This took place after clearance by the UNZA Biomedical Research Ethics Committee and permission obtained from the Lusaka District Health Management. The details appear in Appendix IV.

Information obtained from the women during the study was kept strictly confidential as it borders on personal information which most people would rather keep to themselves. A private room was made available for answering the questionnaire. Envelopes were provided for the women to put in their completed questionnaires. The answered questionnaires were kept by the researcher in the strictest of confidence for only six months after which time all the responses had been examined. There after they were destroyed. Names were not written on the questionnaire. An identification mark that related to the women for purposes of picking those with extreme responses to be sampled to participate in the qualitative study was used.

There were no envisaged risks to the women that ensued from participating in the study. Rather, women benefited by gaining more information on HIV transmission, prevention, coping skills and communication skills.

Participants were given a K20,000 for transportation back home and as an expression of gratitude for availing time and information upon completion of the study.

CHAPTER FOUR - RESEARCH FINDINGS

4.0 Introduction

In this chapter, the researcher uses a disintegrated approach with separate analyses of quantitative and qualitative data. Quantitative data is presented first and it is followed by qualitative data in separate sections. This approach has been preferred in order to unravel mundane realism involving each type of data.

4.1 Getting Into the Field and Collecting Data

Permission to collect data was obtained from the Ministry of Health following ethical approval. The District office facilitated entry into the clinics with the help of an introductory letter. Between December 2010 and April 2011, FGDs and in-depth interviews were done with health workers and Women Living With HIV and AIDS separately. Survey questionnaires were distributed among a sample of HIV-seropositive women only who were on ART. The respondents were given a cover letter indicating that participation was voluntary and confidential. No identifiers were included on the survey questionnaires and interview tapes.

For ease of presentation of the findings, the study is described using the themes to help the reader follow the findings of the research.

a) Family Planning Choices of Women Living With HIV and AIDS

b) Reasons Women Living with HIV and AIDS Have For Selecting Particular Family Planning Methods

c) Differences or Similarities There Are Between the Family Planning Choices ART Health Care Providers Render and What the Women Living With HIV and AIDS and On ART Desire

d) Reasons Health Workers Have For Structuring the Current Reproductive Health Care for Women Living With HIV and AIDS

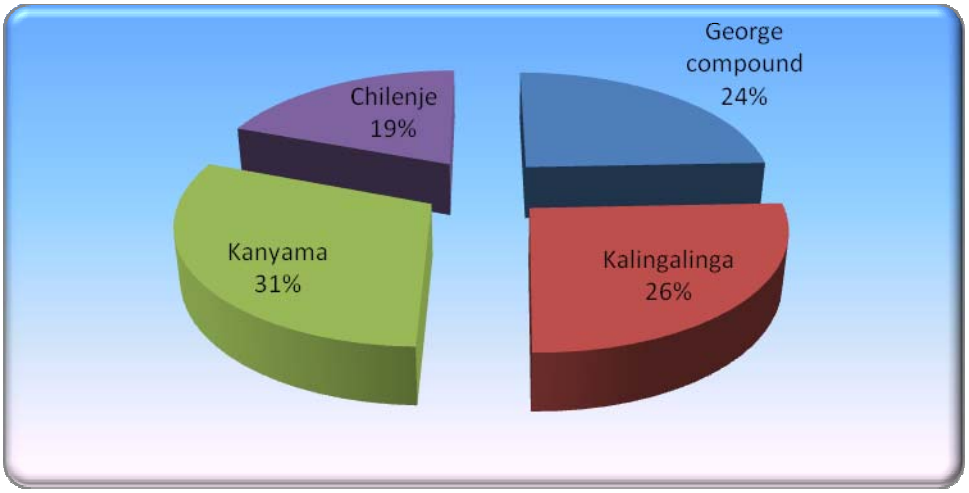
However, the demographic characteristics of the respondents are presented first before the thematic presentations.

Quantitative data

4.1. Demographic Characteristics

Our starting point is to try and understand the demographic picture of our sample. The participants who were Living With HIV and AIDS were drawn from four zoned health centres. Two hundred and twenty seven (24.4%) were drawn from George compound, 242 (26%) from Kalingalinga, 283 (30.4%) from Kanyama and 180 (19.3%) from Chilenje (figure 4.1.1).

Figure 4.1.1 Health Centre representation of Women Living With HIV and AIDS



A greater number (about 72%) of the participants were in the non-risky youthful reproductive age group 18 to 35 years. All participants were Zambians and aged 16 to 48 with a *mean* age 30.1 ± SD 6.8 (mean ± standard deviation) and the majority were teenagers ***n*** = 37 (72%). Table 4.1.1 is a plot where each data value is split into a "leaf" (usually the last digit) and a "stem" (the other digits). For example the minimum age "16" would be split into "1" (stem) and 6 (leaf). A critical look at the stem leaf plot and descriptive table shows the *skewness* (which measures the deviation of the distribution from symmetry) to be approximately 0, and this distribution is asymmetrical. The stem values are listed down (1 to 4) and the "leaf" values go right from the stem values. The

"stem" has been used to group the respondent's ages and each "leaf" indicates the individual scores within each group.

Table 4.1.1 Descriptives for age

Mean	30.15
Median	30.00
Variance	46.610
Std. Deviation	6.827
Minimum	16
Maximum	48
Range	32

A smaller proportion of the women were rather literate 362 (38.9%) (Upper secondary plus college or university) (Table 4.1.2).

Table 4.1.2 Extent of schooling

	n	**%**
Never	89	9.5
Primary school	261	28.0
Lower Secondary School	220	23.6
Upper secondary School	227	24.4
University or college	135	14.5
Total	**932**	**100.0**

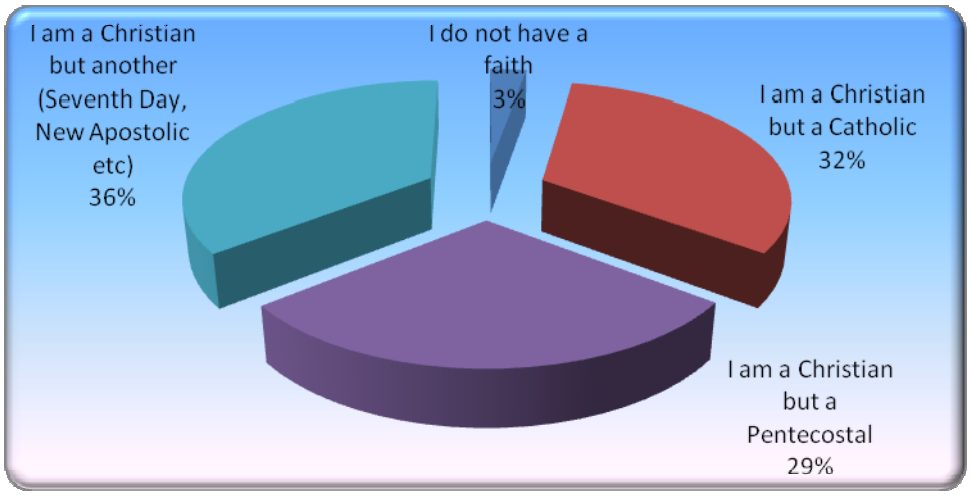
The women understudy had known their HIV status for about 60 months. The mean HIV status knowledge is 18.1 (± SD 20.8; mean + standard deviation) and the mode was just 2 months. The women had children ranging from 0 to 10. The mean child possession was 2 (± SD 2) and the mode was 2.

Table 4.1.3 HIV Status Knowledge and Child Possession Statistics

	How long ago (in months) did you know about your status?	How many children do you have?
Mean	18.15	2.00
Median	11.00	2.00
Mode	2.0	2.00
Std. Deviation	20.8	2.00
Minimum	0.0	0.00
Maximum	120.0	10.00

Most of the women claimed to be Christians than not and there were no marked differences in terms of affiliation across the key sects (figure 4.1.3)

Figure 4.1.2 Religious faith



Most of the women who were enlisted at least had a means of earning a living than not. Among those who had a means of earning a living, a small number were sex working. There was a remarkable number of school going children in the sample (table 4.4.1).

Table 4.1.5 Occupation

	n	%
Student at College/University	61	6.5
Just married	12	1.3
Student at Secondary School/Primary	193	20.7
Administrator	19	2.0
I am in a sales and clerical job	50	5.4
I am a professional	80	8.6
I am in business	259	27.8
Farmer	51	5.5
I work for sex	12	1.3
I am a home maker	195	20.9
Total	**932**	**100.0**

A critical examination of their marital status shows that about half the number 467 (50.1%) of the women were married. Noting that all of the women were HIV positive, it was expected that if they were not married, they would in essence be engaged in other non permanent sexual relationships. This explains the numbers of women who had someone in a casual sexual relationship, in a short- and long term sexual relationships, cohabiting (living as married). There were a considerable number of women who were abstaining and living a solitary life (widowed, single and divorced) (Table 4.1.6).

Table 4.1.6 Type of Sexual Relationship

	n	%
I have someone in a casual sexual relationship	23	2.5
I am married	467	50.1
I am in a short-term sexual relationships	27	2.9
I am in a long-term sexual relationships	44	4.7
I am cohabiting (living as married)	67	7.2
I am now divorced and single	74	7.9
I am now widowed and single	102	10.9
I am single	128	13.7
Total	**932**	**100.0**

4.2 Family Planning Choices of Women Living With HIV and AIDS

Analysis of Perceptions of Pregnancy

Before examining the contraception choices among these women, the researcher first wanted to establish the women's perception on pregnancy in HIV positive state. Taking the "not sure" response as the midpoint that divides the two extreme polar responses on a Likert scale, "likelihood" and "unlikely hood" of becoming pregnant, about half of the women (482 - 51.7%) in the sample did not see themselves as not very likely (107) and not likely (375) to becoming pregnant as compared to (199 – 21.4%) those who saw themselves likely (123) and very likely (76) of becoming pregnant in the next six months not withstanding their marital status (table 4.2.1).

Table 4.2.1 Marital Status and Likelihood of Getting Pregnant in the Next Six Months n = 932

	Do you see yourself having a risk of getting pregnant?					*Total*
Marital Status	***Not very likely***	***Not likely***	***Not sure***	***Likely***	***Very likely***	
I have someone in a casual sexual relationship	0	11	7	3	2	**23**
I am married	33	163	156	71	44	**467**
I am in a short-term sexual relationships	5	18	3	1	0	**27**
I am in a long-term sexual relationships	1	24	12	5	2	**44**
I am cohabiting (living as married)	6	28	22	6	5	**67**
I am now divorced and single	13	34	9	10	8	**74**
I am now widowed and single	33	44	11	9	5	**102**
I am single	16	53	31	18	10	**128**
Total	**107**	**375**	**251**	**123**	**76**	**932**

The following research question was proposed: Is marital status associated with the likelihood of getting pregnant among HIV positive women? Using the Pearson Chi-Square test of independence with an alpha significance level of 0.05, the p value was 0.000 and we were able to reject the null hypothesis of no association. In this case we conclude that there is a relationship between marital status and likelihood of getting pregnant when HIV positive.

Age groups were also profiled to see if there was any relationship with likelihood of getting pregnant when birth control was not used**.** The category “not sure” was used as the midpoint dividing the likelihood and unlikely hood of becoming pregnant. Far less than half of the women (190 – 20.4%) in the sample saw themselves as not very likely (81) and not likely (109) to becoming pregnant as compared to (500 – 57.6%) those who saw themselves likely (197) and very likely (303) of becoming pregnant in the next six months not withstanding their age group (table 4.2.2).

Table 4.2.2 Age Group and Likelihood of Getting Pregnant if Some One Does Not Use Any Birth Control

	Do you see yourself having a risk of getting pregnant?					*Total*
Marital Status	***Not very likely***	***Not likely***	***Not sure***	***Likely***	***Very likely***	
Sixteen to twenty five	6	21	56	61	85	**229**
Twenty six to thirty five	24	44	150	102	148	**468**
Thirty six to forty five	27	27	30	29	51	**164**
Over forty six	24	17	6	5	19	**71**
Total	81	109	242	197	303	**932**

Pearson Chi-Square test of independence was performed at an alpha error rate of 0.05 to see whether age group was associated with the likelihood getting pregnant in the absence of birth control, The *p* value was 0.000. In this case we conclude that there is a relationship between age and likelihood getting pregnant in the absence of birth control among HIV positive women.

The women were asked how they rated the importance of becoming pregnant. Less than half of the women (420 / 45.1%) in the sample rated getting pregnant as important as compared to 512 (54.9%) who rated pregnancy as not important (Table 4.2.3).

Table 4.2.3 Level of Importance of Getting Pregnant

Level of Importance	***n***	***%***
Extremely important	165	17.7
Important	255	27.4
Not sure	219	23.5
Not important	138	14.8
Not very important	155	16.6
Total	932	100.0

The women were asked how they rated the importance of being safe from pregnancy when they had sex with a partner (table 4.2.4).

Majority of the respondents in this study n = 503 (54%) felt that it was important to be safe from pregnancy whereas n = 429 (46%) felt it was not, indicating a skew in the data towards pregnancy being a more important paradigm.

Table 4.2.4 Level of Importance to Be Safe From Pregnancy When You Have Sex with A Partner

Level of Importance	*n*	*%*
Extremely important	313	33.6
Important	190	20.4
Not sure	183	19.6
Not important	108	11.6
Not very important	138	14.8
Total	932	100.0

Analyses of counselling on contraceptive methods

The majority of the respondents were counselled primarily by nurses than any other type of health worker. Surprisingly, a few of the respondents were counselled by friends (table 4.2.5).

Table 4.2.5 Who has counselled you most of the times?

Person doing the Counselling	*f*	*%*
Nurse	621	66.6
Clinical officer	138	14.8
Medical Officer	161	17.3
Friend	12	1.3
Total	932	100.0

When the respondents were asked whether they agreed with health workers in discussing with them family planning issues on a scale from 1 point (strongly disagree) to 11 points strongly agree, it was evident that respondents agreed that health workers created time to discuss family planning issues. This is evident by the presence in the sample of larger percentage women (see Cumulative Percent is 81.5%) with scores of agreement greater than the mean (8.68 ± 3 SD). These are shown in bold and represented by an arrow (table 4.2.6).

Table 4.2.6 Level of Agreement with discussing family planning

Score of level of agreement	Frequency	Percent	Cumulative Percent
1	67	7.2	7.2
2	7	.8	7.9
3	16	1.7	9.7
4	18	1.9	11.6
5	32	3.4	15.0
6	36	3.9	18.9
7	**73**	**7.8**	**26.7**
8	**72**	**7.7**	**34.4**
9	**80**	**8.6**	**43.0**
10	**135**	**14.5**	**57.5**
11	**396**	**42.5**	**100.0**
Total	**932**	**100.0**	

When the respondents were asked how far they agreed with health workers discussing with them safer sex and based on the level of agreement from 1 point (strongly disagree) to 11 points strongly agree, it was evident that during each visit to the ART centre, the respondents agreed that health workers created time to discuss safer sex issues. This is evident by the presence in the sample of larger percentage women (see Cumulative Percent is 85.5%) with scores of agreement greater than the mean (8.68 ± 3 SD). These are shown in bold and represented by an arrow (table 4.2.7).*Table 4.2.7 Level of Agreement with Discussing Safer Sex*

Score of level of agreement	Frequency	Percent	Cumulative Percent
1	22	2.4	2.4
2	10	1.1	3.4
3	12	1.3	4.7
4	21	2.3	7.0
5	33	3.5	10.5
6	37	4.0	14.5
7	**75**	**8.0**	**22.6**
8	**83**	**8.9**	**31.5**
9	**76**	**8.2**	**39.6**
10	**142**	**15.2**	**54.8**
11	**420**	**45.1**	**99.9**
12	**1**	**.1**	**100.0**
Total	**932**	**100.0**	

When the respondents were asked how far they agreed with health workers

discussing with them in terms of how much they take part in deciding when they would wish to get pregnant or not, it was evident that during each visit to the ART centre, the respondents agreed that health workers created time to discuss when to get pregnant or not to. This is evident by the presence in the sample of larger percentage women (see Cumulative Percent is 86.9%) with scores of agreement greater than the mean (9.18 ± 2.4 SD). These are shown in bold and represented by an arrow.

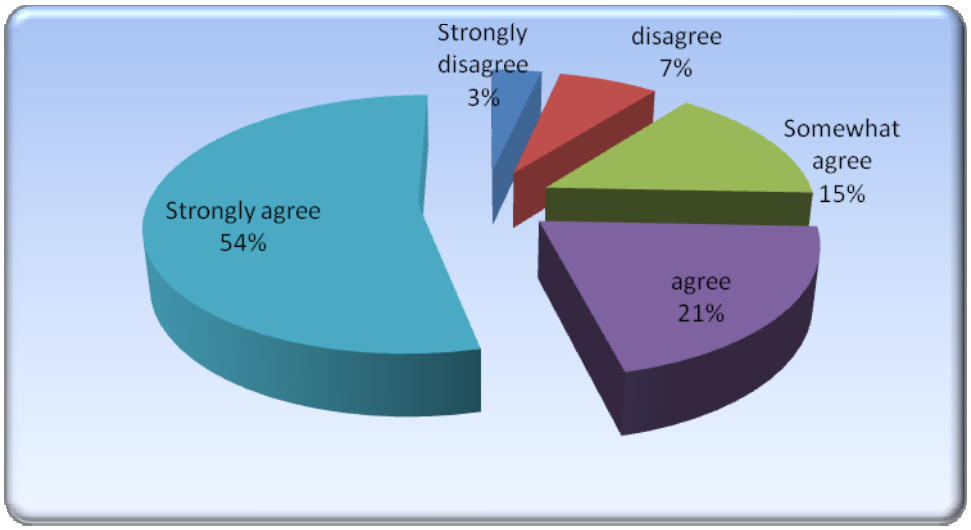
Table 4.2.8 Level Of Agreement With Taking Part In Deciding When To Get Pregnant Or Not

Score of level of agreement	Frequency	Percent	Cumulative Percent
1.00	22	2.4	2.4
2.00	7	.8	3.1
3.00	5	.5	3.7
4.00	19	2.0	5.7
5.00	31	3.3	9.0
6.00	38	4.1	13.1
7.00	**67**	**7.2**	**20.3**
8.00	**90**	**9.7**	**30.0**
9.00	**80**	**8.6**	**38.6**
10.00	**158**	**17.0**	**55.6**
11.00	**412**	**44.3**	**99.9**
12.00	**1**	**.1**	**100.0**

When the respondents were asked how far they agreed with health workers discussing with them in terms of how much they take part in deciding when they would wish to get pregnant or not, it was evident that during each visit to the ART centre, the respondents agreed that health workers created time to discuss when to get pregnant or not to. This is evident by the presence in the sample of larger percentage women (see Cumulative Percent is 85.5%) with scores of agreement greater than the mean (9.14 ± 2.5 SD). These are shown in bold and represented by an arrow.

When the respondents were asked how their level of agreement was generally in discussing family planning matters, there were higher scores of agreement (75%) than disagreement (10%) if we take 140 (15%) respondents who somewhat agreed and occupied the median positions. The level of agreement was significant (***ρ*** = 0.000) across health worker type.

Figure 4.2.9 Cumulative categorical Level, of agreement with health worker performance



All health care workers in the ART setting in Lusaka had similar grading in terms of quality of counselling.

Table 4.2.9 Agreement on Quality of Counselling By Staff Category

		Cumulative categorical health worker performance score			
		Disagree	**Somewhat agree**	**Agree**	**Total**
Who has counselled you most of the times	Nurse	59	81	581	621
	Clinical officer	24	9	105	138
	Medical Officer	15	46	100	161
	Friend	0	12	0	12
Total		**98**	**148**	**786**	**932**

In order to facilitate the selection of a contraceptive method of preferred choice, the health workers counselled the respondents on nearly all of the methods but the emphasis of counselling was more (the rate was more than 50%) on four methods which are condoms (male and female) oral pill and injectable hormonal drug. They were however least counselled on husbands to consider undergoing vasectomy,

trying to conceive use of withdrawal method, use of diaphragm and use of intrauterine device (the rate was more than 50%. Table 4.2.10 lists the commonly and uncommonly cited forms of contraception (Bold shows the most dominant response).

Table 4.2.10 Commonly and Uncommonly Counselled forms of Contraception

Contraception Method	***Frequency***			
	Yes		***No***	
	f	***%***	***f***	***%***
I have been counselled on the use of male condoms	**823**	88.3	109	11.7
I have been counselled on the use of female condoms	**723**	77.6	209	22.4
I have been counselled on tubal ligation and/or hysterectomy	98	10.5	**834**	89.5
I have been counselled on abstinence	283	30.4	**649**	69.6
I have been counselled on the use of oral contraceptives	**492**	52.8	440	47.2
I have been counselled on the use of injectable drug	**514**	55.1	418	44.8
I have been counselled on the use of skin implant	447	47.9	**485**	**52.0**
We were counselled that my husband could under go vasectomy	57	6.1	**875**	93.9
I have been counselled on trying to conceive	16	1.7	**916**	**98.3**
I have been counselled on the use of withdrawal	44	4.7	**888**	**95.3**
I have been counselled on the use of diaphragm	25	2.7	**907**	**97.3**
I have been counselled on the use of intrauterine device	116	12.4	**816**	**87.6**

While some of these women were counselled on some methods and not other methods, emphasis by the health workers was greatest on using condoms and especially the male condom. A very small percentage of the women (26.5%) used hormonal therapy and other methods. Most of them 87.1 % were at least using condoms (table 4.2.11).

Table 4.2.11 Type of Contraception Used

Type of Contraception		Frequency			
		Yes		No	
		n	%	n	%
1.	I am using male Condoms	520	55.8	412	44.2
2.	I am using female condoms	292	31.3	642	68.9
3.	I am using Tubal ligation and/or hysterectomy	31	3.3	901	96.7
4.	I am abstaining	92	98	840	90.1
5.	I am using oral contraceptives	110	12	820	88.0
6.	I am using Injectable drug	135	14.5	797	85.5
7.	I am using Skin implant	90	9.6	842	90.3
8.	My husband under went vasectomy	12	1.3	920	98.7
9.	I am using withdrawal method	11	1.2	921	98.8
10.	I am trying to conceive and using no method	26	2.8	906	97.2
11.	I am using an intra uterine device	16	1.7	916	98.3

Qualitative Findings

When the respondents were interviewed about their sexual life and the use of particular contraceptive methods, it was evident that most of them were rather sexually active and had mixed feelings about the condom. The informants' descriptions and feelings about condoms were invariably negative, reflecting similar themes reported in the literature. The narratives below seem to support what has been presented above.

> The sex had been good when we didn't use a condom (Female, aged 34).

Descriptions of condoms include - embarrassing, uncomfortable, not sexy, not fun, unreliable, unnatural, a form of accusation, pleasure inhibiting, showers in raincoats and interfering with spontaneity.

> It's embarrassing or distressing for some men - they have to do something which they feel a bit foolish doing. And I hate them [condoms] afterwards - you have to take them off and find a tissue, and I find them pretty disgusting (Female, age 32).

> My husband says that he does not like to fumble around, getting the thing on . . . whether your partner puts it on or you do it, it interrupts the moment of passion (Female, age 36).
>
> The most positive reference to condoms was 'condom as health necessity'. I don't like them much. I can see that as a means of contraception they are necessary and I can see the health benefits . . . (Female, age 29).
>
> I don't believe you have a choice - it's a case of 'have to' (Female, age 25).

4.3 Reasons Women Living with HIV and AIDS Have For Selecting Particular Family Planning Methods

When the women were asked in the FGDs and personal interviews, the reasons they opted for a particular contraceptive method were varying from time to time. A few women among those interviewed actually engaged in unprotected sex because their partner was also HIV seropositive. Several women with HIV-seropositive partners used condoms for birth control and not for safer sex. It was evident that men seemed to be at the centre of making decisions than the women. A few examples of the methods used and reasons for selecting them will suffice.

> I use depoprovera because now it is my only means of safer sex. If I use the pill, he will see it and their will be fights in the home. So I get the injection while he is at work.
> (Sexually active grand mother of three, age 44).
>
> I just let him have his way and not wear condoms, so I wouldn't lose him (Mother of three, age 23).
>
> He wore them as a favour to me really - to prevent pregnancy. It was entirely for me, it wasn't helping him out any . . . so it was difficult to insist (Woman, age 29).
>
> I am on nothing now. I suffered from BP (meaning hypertension) the first two years of my sero status disclosure. I settled for an IUD but my husband complained that a string inside me disturbed him. So I just rely on the calendar method.
> (Woman, age 32)
>
> I have said to myself…..I do not want to have a child in the future. So I use both a condom and a pill….. Another attempt of unprotected sex

> will put me at risk of pregnancy. In fact I am already too old to be pregnant…What will people say seeing me pregnant.
> (Mother of four, age 38).
>
> If it was not for the nurse insisting that we talk about safe sex….and the pill, I was actually…..not going to consider using oral contraceptives.
> (Business lady, mother of three, age 22).

It was observed that these women who knew that they were HIV positive had strong desires to have children. It is very clear from the women's feelings that even if an HIV-positive woman is told of her sero status and is counselled on the risks of MTCT, they will still go on to have unprotected sex and get pregnant. In addition to contraception and risk reduction concerns, women are willing to risk vertical transmission of HIV in order to have children. In the FGDs and in-depth interviews, the data shows a strong desire for future childbearing among women who know they are HIV-positive. The data also shows that women were pressured by kinfolk, friends and their partners to have children. Below are some key examples.

> I had to struggle against … this thing of talking you know…I decided to be pregnant because people talk…they will know that you are positive if you do not have child that….Yeah as for me , I just planned to have a child to conceal my HIV status.
> (Teacher aged 31).
>
> I just have to live with the risks of getting pregnant. I need a child. It is now safer because they give you (meaning drugs) something to protect you and the baby when you are positive…The days are gone when women used to die in pregnancy or even lose a baby.
> (Lay Counsellor, age 33).
>
> Every one is saying it is safe to have child as long as you are taking your medication. My husband wants a baby girl. He says we could try. His mother too…what could I do any way but to get on the bandwagon…He may get a child elsewhere you know. (House manager, age 25)

While the women gave reasons easily for all that they did, it was not fairly easy to sort out the types of reasons they gave for using or not using some or none of the methods or even for desiring to be pregnant. The women could clearly state that a particular method should be used, or that they would be pregnant but their discussions were rather too argumentative. In many cases, focus group members

challenged each other when someone tried to describe a negotiation scenario with a husband, giving any number of sensational, situational, or relational reasons as to why the negotiation being described would not work or work.

4.4 Differences or Similarities There Are Between the Family Planning Choices ART Health Care Providers Render and What the Women Living With HIV and AIDS and On ART Desire

In this study, there were difficulties that the women faced. Though their counsellors had an opportunity to share with their clientele the possible options, counsellors seemed to have a preference of particular methods. Most of the respondents claimed that counsellors seemed comfortable to encourage them to abstain (for those who were single or widowed), use a diaphragm, condoms and a pill or injectable hormone. The nurses seemed to discourage the women from getting pregnant or to use the preferred methods among the women. The women stated that when they were counselled in favour of a particular method or methods, the women had problems in negotiating refusal of condom use or pills or saying no to sex for instance. Some stated that even if they were counselled, they would not initiate a discussion with their partner on a selected method either because it was taboo or embarrassing.

> I was advised by the clinical Officer to use a condom. I have disadvantage to say I do not want a condom. He will cite our tradition that says “be silent when your husband arises to speak.” But I would say to the clinical Officer I need a baby at least for the moment… you see!
>
> (Woman aged 24)
>
> How do I speak to him (the doctor) that I do not want a condom or a pill? He is an expert you know. I will have trouble at home. The doctor would say find a way of telling him….he does not actually show you how to go about it.
>
> (Teacher aged 32)
>
> Yes everything goes on well at the clinic. We are given options but I have always chosen an injection … and condoms. Some times my husband wants it live…The nurse keeps on saying you are likely to promote resistance…. it seems you also desire live sex….

(Married woman, two children aged 34)

> At the first counselling session, I settled for a diaphragm. (The fact that a woman can use the diaphragm without her partner knowing). But the nurse was against me. She had a misconception about me. The nurse believed the diaphragm was inappropriate for me. This nurse told me that I would not make an ideal diaphragm user. She said that an ideal user was someone who is responsible, has self-control, and is comfortable touching her body. You see because of my small frame, I look very young… I have come to believe that nurses maybe more willing to recommend the diaphragm to older and more educated women because they perceive those women as being more likely to have such characteristics.

(Married Cashier aged 28)

For those women who desired to be pregnant, the nurses either used their expert knowledge to discourage the women from using one method. It is important to note that a significant number of the women in our sample perceived themselves not to be at risk for and were highly motivated to be pregnant. The health professions had reasons for insisting that the women use the methods recommend to them. They gave varying reasons which included, age, education, medical and gynaecological complications.

> As nurses, we find the diaphragm least successful because most mothers are not willing to know their bodies or even touching them citing that it is taboo. So I do not have the desire to counsel women on this
> (Family Health Nurse).

> The problem with our mothers is that they do not use some methods consistently and correctly. They forget when to wear the female condom; they drink the pill after two or three days.
> (Nurse Midwife, 40)

> I tend to advise most women that the diaphragm and gels are good alternatives for women who do not want to use hormonal contraceptives. The diaphragm could be appealing to women who feel less capable of using condoms. They normally say gels are messy and the diaphragm makes you have less sensation.
> (Doctor)

4.5 Reasons Health Workers Have For Structuring the Current Reproductive Health Care for Women Living With HIV and AIDS

Focus group and key informant interviews with heath workers revealed that it was not possible in the current health care setup that reproductive health issues of people living with HIV and AIDS could be provided under one roof that is within the ART clinic. There were notable key barriers that could be profiled. When in charges of health centres and staff in the ART were asked for the reasons behind not providing reproductive health care services to the women living with HIV and AIDS within the ART setting, several reasons were made . However, three themes were generated from the interviews and focus group discussions and these included the following:

a) The public-health priority agenda
b) Organisation of services
c) Human resources for ART care

Below, the researcher presents the prevailing public-health priority agenda and its effect on funding; the complexity of and resistance to providing reproductive health care services in an ART setting.

Theme I: The public-health priority agenda

In response to a question about providing integrated holistic care (care under one roof) to people living with HIV and AIDS, most of the in charges cited funds and that integrated holistic care at the moment was not possible because there were no available funds for such a service. Respondents said that integrated holistic care had a low position on public-health agendas at national and district levels. They were concerned that HIV and AIDS with reproductive health were not named a

Millennium Development Goal (MDG) not even as an MDG-related target, despite the fact that there are established links between MDG 5 (Improving maternal health) and MDG 6 (Combating HIV/AIDS, malaria and other diseases). Three illustrations from in charges would suffice here two looking at funding and the other looking at incommensurability.

> "As a Ministry, we have recognised rates of HIV infection, but we have not included integrated holistic care to people living with HIV and AIDS, in our Poverty Reduction Strategy Paper document. When it came time to determine what will be financed within the Poverty Reduction Strategy Credit, HIV and Reproductive health have not been included together since it is not explicitly mentioned as an MDG. The result is that the Ministry of Health cannot finance these two services at once.
>
> (In charge 1)

> There are no funds at all out of the cooperating partners financing of HIV and AIDS health care /credit funds that could be mixed with reproductive health, even if the two are an expressed need separately or even as an observed need. Remember that an integrated strategy does not exist eve if HIV and AIDS is now provided under one roof.
>
> (In charge 2)

It can be inferred from these descriptions that a raised profile on national and international agendas is not only essential for augmentation of funds but also for generation of the political support needed for the difficult decisions that are often part of HIV and AIDS global funding. Respondents identified a range of factors to explain the inadequacy of funding for HIV and reproductive health under one roof, which the researcher takes as a proxy indicator for a low position on the agenda in the health sector. First, advocates for HIV and reproductive health under one roof might have different perspectives, which lead to contradictory plans.

One doctor observer noted that:

> There several donors bringing funds into basket the common funding. Though this is the case, HIV and reproductive health under one roof has suffered from a real and perceived lack of consensus on how to organise and account for resources among leading experts. This turns donors and policymakers off."

Because there are many activities in HIV and AIDS care and family planning, advocates for separate units in a health unit often lobby against one another to draw attention to different activities, each of which might need different health approaches and solutions. Yet, even when advocates agree on problem definition (eg, to provide family planning services like abortion or a pill), they too often offer competing views on the indications and contra indications. There was also the element of trivialising the reproductive needs of people living with HIV and AIDS. The health worker interest in the wellbeing of those with HIV and AIDS desiring to have or not to have a baby was reported to be low. The excerpt from a psycho social counsellor below is one such an example.

> While there is need to provide reproductive health services to people living with HIV and AIDS, the successes of these pregnancies cannot be guaranteed. Imagine the toil of caring for positive children in the event that a mother fails on adherence. We do not seem to have so much of interest here. Perhaps focussing more on those who are negative and emphasising on preventive health care.

Organisation of services

The way in which ART and reproductive health services are organised affects the use of family planning services for people with diverse medical conditions and stages of the infection.

> The ART clinic has its own times and appointment dates which may be conflicting for family planning services and it would require a person living with HIV and AIDS to go through fur to five checkpoints. We just

> have to see what we could do in the ART area…Just to have everything all at once. This may even overcome the stigma.
>
> (Nurse)

A doctor in an ART clinic noted the absence of a “ground swell of public opinion on reproductive health issues for people living with HIV and AIDS that it is sparsely echoed in the health settings.

> People out there and not only those infected need to force the government to consider rooming in the two. It is either the services are offered in the consulting rooms.

Human resources for reproductive health and HIV and AIDS

One well-established barrier to scaling-up of providing reproductive health services in the ART is the inadequate number of people who are trained to provide the combined care. There wee instances that staff that had the necessary combined in service training skills were operating solitary service units ad bridging was not possible. There were however proposals made by respondents.

> As for me, I would suggest that more flexibility and creativity is needed to diversify the workforce, as far as possible by building on existing formal and non-formal resources. We can provide the needed service to these in one place. They do not need one appointment after another. These things ‘eat’ on their survival activities you see…..
>
> (Clinical Officer)

Some argued that lay members of the community could be the prime resource for care, and several advocated support for, and even formalisation of, their voluntary caregiver role. Yet, professional staff might resist such flexible solutions. For example, one in charge discussed the decision to train lay people in reproductive health building on the good work done by tradition birth attendants to take on some of the roles of nurse midwives and family health nurses. She said:

“We retrained traditional birth attendants. We also have lay helpers in many areas ….. in counselling and not forgetting malaria treatment. This public health decision of training lay people in reproductive health to help out in the ART clinic has found great resistance in the medical establishment. As a result, it has been subject to continuous debate.”

CHAPTER FIVE - DISCUSSION AND CONCLUSIONS

5.0 Introduction

This chapter initially presents a summary of the findings to the main question and the sought objectives before contextualising the findings the research beyond the findings.

5.1 Summary of Findings

The main findings related to the first research question are that majority of the respondents in this study n = 503 (64%) felt that it was important to be safe from becoming pregnant whereas n = 429 (46%) felt that it was not. In order to facilitate the selection of a contraceptive method of preferred choice, the health workers counselled the respondents on nearly all of the methods but the emphasis of counselling was more (the rate was more than 50%) on four methods which are condoms (male and female) oral pill and injectable hormonal drug. They were however least counselled on husbands to consider undergoing vasectomy, trying to conceive use of withdrawal method, use of diaphragm and use of intrauterine device (the rate was more than 50%). While some of these women were counselled on some methods and not other methods, emphasis by the health workers was greatest on using condoms and especially the male condom. A very small percentage of the women (26.5%) however used hormonal therapy and other methods. Most of them 87.1 % were at least using condoms.

The women had reasons for selecting particular family planning methods were varying from time to time. A few women among those interviewed actually engaged in unprotected sex because their partner was also HIV seropositive. Several women with HIV-seropositive partners used condoms for birth control and not for safer sex. It was evident that men and other significant people like friends and kinfolk seemed to be at the centre of making decisions than the women. It was very clear from the women's feelings that even if an HIV-positive woman is told of her sero status and is

counselled on the risks of MTCT, they will still go on to have unprotected sex and get pregnant.

Regarding the differences or similarities there are between the family planning choices ART health care providers rendered and what the women living with HIV/AIDS and on ART desired, most of the respondents claimed that counsellors seemed comfortable to encourage them to abstain (for those who were single or widowed), use a diaphragm, condoms and a pill or injectable hormone. The nurses seemed to discourage the women from getting pregnant or to use the preferred methods among the women. The women stated that when they were counselled in favour of a particular method or methods, the women had problems in negotiating refusal of condom use or pills or saying no to sex for instance.

For those women who desired to be pregnant, the nurses either used their expert knowledge to discourage the women from using one method. It is important to note that a significant number of the women in our sample perceived themselves not to be at risk and were highly motivated to be pregnant. The health professions had reasons for insisting that the women use the methods recommend to them. They gave varying reasons which included: age, education, medical and gynaecological complications.

With reference to the reasons health workers have for structuring the current reproductive health care for women living with HIV and AIDS, focus group and key informant interviews with heath workers revealed that it was not possible in the current health care setup that reproductive health issues of people living with HIV and AIDS could be provided under one roof that is within the ART clinic. There were notable key barriers that could be profiled. When in charges of health centres and staff in the ART were asked for the reasons behind not providing reproductive health care services to the women living with HIV and AIDS within the ART setting, several reasons were made. However, three themes were generated from the interviews and focus group discussions and these included (a) The public-health priority agenda, (b) organisation of services and (c) human resources for ART care.

An important, but not significant, decrease in the percentage of women using no method and who wanted to be pregnant (2.8%) and those who were using withdrawal method (1.2%) was noted. This finding suggests that family planning counselling had been provided and most of the women decided to avoid pregnancy. The significant decrease in the use of oral contraception in the post-knowledge phase, compared with the percentage of women using this method at the time of counselling, was similar to the decrease found in a study carried out in Rwanda by King et al., (1995) that focussed on family planning intervention to reduce vertical transmission.

In this study, an increase in the number of those using male condoms was marked. This result is similar to the Rwanda study and another report involving but a small population than in this study of 340 HIV infected women in the state of Sao Paulo, Brazil (Rodrigue et al., 1998). Unlike this study which showed very low numbers of tubal ligation (3%), data in Brazil and within the sub region (Tanzania to be specific) demonstrated an increase in the post sero-conversion phase, although with a smaller prevalence than that found in the present study (Lindsay, 1995; Kapiga et al., 1998). The results observed in Brazil reflect contraceptive practices in the country where tubal ligation is a very popular method, even for non infected women.

While in some studies knowledge following counselling on reproductive health among infected women resulted in an increase in contraceptive use, other studies found a lack of persistent use of contraception beyond one year or no significant difference compared with HIV-negative women (Allenet al., 1992; 1993; Nebie et al., 2001). This seems to suggest that the counselling which is taking place in our clinics is effective. Like this study, a Uganda study found that 73% of women exhibiting behaviour that put them at risk of pregnancy did not want any more children (Nakayiwa et al., 2006). In addition to contraception and risk reduction concerns, it is becoming imperative for health care workers to include family-planning issues in the counseling of HIV-infected women. Like this study, Silbiger (1997) also found that women are willing to risk vertical transmission of HIV in order to have children. Now that the knowledge about the reduced risk of vertical transmission due to the administration of ARVs during pregnancy has become more widely disseminated,

the desire of having a child will increase and the opposition to therapeutic abortion for pregnant HIV-infected women will decrease. This was shown in a study in the US (CDC, 1997). It is likely that more and more HIV-infected women will plan to conceive as long as safe drugs are available that facilitate retention of pregnancy and guarantee a reduction of mother to child transmission of HIV.

An unexpected finding in our study was that few of the respondents were not using Condoms. Some authors like Galavotti and Schnell (1994) have suggested that many HIV infected women consider methods to avoid pregnancy having similar effectiveness in the prevention of transmission. These findings confirm the need for comprehensive counseling about reproductive issues, not only at the time of HIV diagnosis but at every ART appointment.

In an interesting dichotomy, the respondents in this study showed overwhelmingly that they would not prefer to learn about HIV/AIDS-related issues from a doctor as was the case in studies by Epstein et al., (1998) and Manning et al., (1989). In reality, doctors may do an inadequate job of counseling on HIV/AIDS-related issues (Epstein et al., 1998). This study has demonstrated adequacies in counseling patients about HIV-related Topics across all health care providers (ρ = 0.000).

5.2 Lessons learned

There are many lessons that could be drawn from this study about the reproductive health services, needs and barriers to meeting reproductive health needs of people living with HIV and AIDS. Firstly, it is possible to provide holistic and essential care for people living with HIV and AIDS within the ART even when co-operating partners are insisting on vertical programming and accountability. Concerning the service delivery barriers, most of the barriers limiting the development of holistic and essential care of people living with HIV and AIDS within the ART unit can be overcome by generation of sufficient political will to improve availability of and access to humane health care. Political will, in this context, refers to the inclination, shaped by convictions or incentives, for policymakers to take action and to make or block change. Political will is likely to be directly affected by national and

international factors, such as lobbying by professionals, consumers' groups, and other advocacy groups; expressions of public opinion; and donors' political priorities.

Advocacy for reproductive health for people living with HIV and AIDS within the ART health service will be more likely to succeed if such advocacy is informed by much needed research on the factors that shape political will for improvement of such services among different types of policymakers. Moreover, advocacy in the past has not been sufficiently clear, informative, consensus-based, or focused. This observation has implications for national-level HIV and family planning health planning.

5.3 Implications for Program Mangers

The findings of the present study have significant implications for program managers in the District as well as at the health centre. Managers of family planning programs should proceed with more confidence to establish reproductive health for people living with HIV and AIDS within the ART. Retraining of health care providers rendering care to people living with HIV and AIDs should be broad based. In addition, coordination should be established between the content of technical training courses for professional staff and lay care providers. Rapid professional staff turnover in some family planning clinics and ART clinics may warrant consideration of non-conventional forms of training such as lay care.

5.4 Implications for HIV and AIDS Care

Health care workers have the responsibility to their patients and their patients' potential partners and unborn children to make sure that they receive accurate and adequate counseling and assistance in decisions about safer sex, contraceptive practices, and pregnancy decisions. More than half of the respondents in our survey cited a nurse as a source of safer sex and birth control counseling. Non doctor health care workers in the ART setting in Lusaka are also valuable members of the health care team.

There is need to build capacity within the counselling training for our health care providers and especially creating counselling skills that address empowering clients to solve problems that centre on negotiation. Most women failed to negotiate what was given to them during counselling because circumstances on the ground were rather different. The majority of the women the researcher surveyed preferred male condoms for both purposes.

Further research is both warranted and pertinent due to increasing numbers of women desiring to be pregnant in the face of economic adversity, the burgeoning rates of HIV and other STIs and suboptimal contraceptive method and conflicts in condom utilization.

5.5 Strengths and Limitations of This Study

One limitation of this study is that it did not use the earlier model (The Precaution Adoption Process Model) in designing the data collection. The model could have worked better in a longitudinal study that could have followed behavioural change over time and involving a small sample in order to follow the seven stages of the model serially. A ‘‘stages of change’’ model posits that preventative behaviours are adopted through a series of decisional changes and these could not be captured by any of the tools that were used in this study.

Another limitation is the possibility of recall bias on self-reported reproductive healthcare utilization data. This may be difficult to remedy and complex because recall bias may have affected the reporting of use of method, evaluating the quality of care provided by health care workers when one is not consistently seen by the same health worker. The researcher acknowledges that some of the findings from the current study may be attributed to socio-political and cultural contexts of HIV and AIDs.

The studies in these clinics are generalisable to Lusaka urban. However, one last point needs to be made regarding generalisability of findings of this study. This study was only conducted in one set of ART clinics in Lusaka. While ART consultations in Lusaka Zambia share many of the characteristics of those in other cities, it is still

worthwhile for each city and town to conduct studies to confirm the relevance of these findings and the assumptions to their own settings.

Further studies need to be conducted with similar larger cohorts of women in other districts to gain a broader perspective on current trends in contraception, safer sex, and pregnancy decision-making. In addition, investigations into the motivations behind counselling habits of health care providers who treat HIV-infected women need to be conducted to pinpoint the reasons for the gaps in preferred methods and suggested methods that have been encountered in this study.

In spite of these limitations, the study has strengths. This study is among the first to examine family planning use among women living with HIV and AIDS in Zambia. The study should be considered for its strength and particularly for using a rigorous study design with a very large random sample from a cross-sectional population-based study, which allows for a more generalisable inference. This study employed both quantitative and qualitative research methods that tended to support one another and explores unique features that one method could not.

5.6 Conclusion

As HIV continues to spread among women of childbearing age, there is an increasing need for support programs for infected women regarding sex, safer sex, pregnancy and family planning. Some women are going to plan a pregnancy with or without health care worker input. Thus, it is crucial that these women have easy access to care under one roof or as close to the ART Clinic and that this care is offered all at once. Health care workers need to raise and discuss these issues with their superiors so that these women are properly looked after. Women also need to clearly understand the potential risk to their own health that occurs with repeated exposures to HIV. It is imperative that women with HIV infection receive appropriate counselling about risk reduction and safer sex and contraception options, and it is the responsibility of health care professionals to see that these needs are met.

Nursing professionals who seem to be the bulk of providing care to these women can play a major role in meeting these needs.

5.7 Recommendations

Family planning is often delivered separately from HIV services and is not integrated into HIV programs resulting in missed opportunities. As ART programs scale-up, they should be part of a continuum of care that includes strong family planning and other integral health services. Likewise, in some settings, family planning programs and maternal-child health services can be an efficient way of reaching potential ART users. While not all services may be integrated in all instances, looking at financial limitations, the researcher still sees a greater possibility of integrated approaches that could expand access to and coverage of family planning, STI, and HIV and AIDS services. These recommendations are being made because in a review of field experience on the integration of family planning and PMTCT services, the Population Council found that family planning is a standard component of PMTCT programs, but that many PMTCT sites still miss valuable opportunities for providing FP counseling to clients.[290] Moreover, PMTCT programs themselves are only reaching an estimated five percent of people living with HIV and AIDS (Rutenburg et al., 2003). In an evaluation of pilot PMTCT projects in 11 countries, although most sites offered FP services and contraceptive supplies, services were not found to be well-integrated, resulting in relatively little progress made toward addressing prevention of unintended pregnancy in HIV-infected women (USAID, 2004). For example, out of 48 family planning counseling sessions at a PMTCT site in Zambia, HIV transmission was only mentioned in 12 of the sessions, MTCT in eight of the sessions and HIV testing was only mentioned in nine sessions. Dual protection through use of condoms was only introduced in 16 sessions. Furthermore, two of the three PMTCT pilot sites surveyed in Rwanda were run by faith-based organizations that offered FP counseling, but did not provide contraceptives (Rutenburg et al., 2003).

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APPENDICES

Appendix I - Contraption Survey Tool

You have been selected by chance with other women to help us know what may relate to you. Please read /listen to each item carefully and decide to what extent it is characteristic of you. Give each item a rating that applies to you by using a scale that is given for each question. Please remember to respond to all items. There is indeed no right or wrong answers. Your answers will be kept by me in the envelope that I have given you in the strictest confidence for only six months after which time I shall have examined all the responses. There after I shall destroy them. There will be no identification mark that relates to you on the questionnaire. I am sure that you will be open in responding to these statements.

1. Age --------
2. Age range: sixteen to twenty five-------- twenty six to thirty five……. thirty six to forty five …….and over forty six…….
3. What is your occupation?

Occupation	**Tick only one**
Student at College/University	
Student at Secondary School/Primary	
Administrator	
I am in a sales and clerical job	
I am a professional	
I am in business	
Farmer	
I work for sex	
I am a home maker	
I am just a home maker (Just married)	

4. How far have you gone in school?

	Never	**Primary**	**Lower Secondary**	**Upper secondary**	**College /University**
T**ick**					

5. If you have someone in a sexual relationship, what applies to you?

Sexual relationship	**Tick only one**
I have someone in a casual sexual relationship	
I am married	
I am in a short-term sexual relationships	
I am in a long-term sexual relationships	
I am cohabiting (*living as married*)	
I am now divorced and single	
I am now widowed and single	
I am single	

6. What is your religious faith?

	Tick only one
I do not have a faith	
I am a Christian but a Catholic	
I am a Christian but a Pentecostal	
I am a Christian but another (Seventh Day, New Apostolic etc)	

7. How long ago did you know about your status?.....months
8. How many children do you have .....
9. Do you see yourself having a risk of getting pregnant?

Not very likely	Not likely	Not sure	Likely	Very likely

10. How likely is it that you could get pregnant if you don't use any birth control?

Not very likely	Not likely	Not sure	Likely	Very likely

11. How do you rate the importance of becoming pregnant?

Extremely important	Important	Not sure	Not important	Not very important

12. How important is it to you that you are safe from pregnancy when you have sex with [your partner]?

Extremely important	Important	Not sure	Not important	Not very important

13. Have you ever been pregnant after knowing your status? Yes.....No.....
14. If yes, how many times?.....
15. Was or were the pregnancy planned? Yes.....No.....
16. How many children have you had after knowing your status?.....
17. Have you ever had a pregnancy which did not go to the end? Yes.....No.....
18. If Yes how many times?.....
19. If Yes, how long ago?

a. Before I knew my status	
b. After I knew my status	
c. Before and after I knew my status	

20. Are you planning to conceive? Yes.....No.....
21. If yes, from question 16, when do you intend to?

1 to 5 months	6 to 10 months	11 to 15 months	16 to 20 months	20 to 25 months

22. Who is your reliable source of counselling on family planning? (Tick one)

Nurse	Clinical officer	Medical Officer	Pastor	Friend

23. At each visit, does this health worker discuss family planning issues with you? (Score your level of agreement from 1 to 11 points)

Not all	1	2	3	4	5	6	7	8	9	10	11	Very much

24. At each visit, does this health worker discuss safer sex issues with you? (Score your level of agreement from 1 to 11 points)

Not all	1	2	3	4	5	6	7	8	9	10	11	Very much

25. Do you feel that this health worker gives you enough information about birth control? (Score your level of agreement from 1 to 11 points)

Not all	1	2	3	4	5	6	7	8	9	10	11	Very much

26. Do you feel that this health worker gives you options of methods to choose from about birth control? (Score your level of agreement from 1 to 11 points)

Not all	1	2	3	4	5	6	7	8	9	10	11	Very much

27. On which methods below have you been counselled by your health worker? (Tick all that which is applicable in your case?

Male Condoms	
Female condoms	
Tubal ligation and/or hysterectomy	
Abstinence	
Oral contraceptives	
Injectable drug	
Skin implant	
Vasectomised partners	
None (trying to conceive)	
Withdrawal	
Abstinence	
Diaphragm	
Intrauterine device	
None of the above	

28. From the methods below, what are you using now?

Method	**Tick**
Male Condoms	
Female condoms	
Tubal ligation and/or hysterectomy	
Abstinence	
Oral contraceptives	
Injectable drug	
Skin implant	
Vasectomised partners	
None (trying to conceive)	
Withdrawal	
Abstinence	

Diaphragm	
Intrauterine device	
None of the above	

29. If you have used the following, what has been the frequency?

Method	**Always**	**Frequently**	**Once in a while**	**Rarely**	**Never**
Male Condoms					
Female condoms					
Abstinence					
Oral contraceptives					
Injectable drug					
None (trying to conceive)					
Withdrawal					
Abstinence					
Diaphragm					
Are you on ARVs?				Yes	No
How long have you been on treatment?					

Appendix II - Schema of In-depth Interview Questions with Women Living with HIV and AIDS

Theme I: Demographics

1. Please could you tell me about yourself?
2. Please describe for me, as completely, clearly as you can an experience with your status and your sex life now and onwards.

Theme II: Reproductive Health Life

I would like to know what you are doing or intend to do to have or not to have a child. From this then specific experiences were continuously probed for depth below surface responses. Probe for the following:

a. Condom use (male or female).
b. Oral contraceptive medication.
c. Injectable contraceptive medication.
d. Sterilization (tubal ligation or hysterectomy).
e. Abstinence.
f. Withdrawal.
g. None (trying to conceive).
h. Intrauterine device.

Theme IV: Organisation of family planning services

1. How do you find the organisation of reproductive health services for Women Living With HIV and AIDS in the ART clinic (Probe for integrated or separate service)?

Theme V: How Best the Organisation of family planning services could be met

1. To what extent are you happy with the services?
2. Please describe how the reproductive health needs of Women Living With HIV and AIDS on ART could be met (probe to account for the current arrangement and the reason for it).

Summary

Let's summarize some of the key points from our discussion. Is there anything else?

Do you have any questions?

Thank you for taking the time to talk to us!!

Appendix III - Schema of In-depth Interview Questions with Health Workers

Theme I: Demographics

1. Please could you tell me about yourself? (Probe for qualifications, in-service trainings attended *inter alias.*
2. Please describe for me, as completely, clearly as you can an experience with your status and your sex life now and onwards.

Theme II: Methods of contraception that you being given at the ART or Family planning Clinic

Please tell me about what you feel about the options among the methods of contraception that you are offering to Women Living With HIV and AIDS. Probe for the following if possible:

a. Condom use (male or female)
b. Oral contraceptive medication
c. Injectable contraceptive medication
d. Sterilization (tubal ligation or hysterectomy)
e. Abstinence
f. Withdrawal
g. None (trying to conceive)
h. Intrauterine device

Theme III: Family Planning Service Actually provided

Please tell me about what actually you are providing to Women Living With HIV and AIDS in the ART clinic.

Theme IV: Organisation of family planning services

Please tell me about the organisation of reproductive health services to Women Living With HIV and AIDS in the ART clinic. (Probe for integrated or separate service).

Theme V: How Best the Organisation of family planning services could be met

Please describe how the reproductive health needs of Women Living With HIV and AIDS on ART could be met.(probe to account for the current arrangement and the reason for it).

Summary

Let’s summarize some of the key points from our discussion. Is there anything else?

Do you have any questions?

Appendix IV - Focus Group Discussion Guide-1 FOR Women Living with HIV On ART

Ice breaking or energizers, and motivators for focus group discussions

Before the FGDs could engage in serious dialogue, the researcher will motivate them to ice breaking. When groups first meet, there is often some fear about what may happen. This is true even when many do not know each other or have not attended group events before. As interactive and often fun sessions in form of ice breaking will have to run before the main proceedings because they do not just help people get to know each other but also to buy into the purpose of the event.

1. The Check in

The FGD will begin by asking them the following questions:

1. State your FULL name and what you like to be called in our discussion.
2. Say where you live now and another place you have lived (may use a different question if all from the same place).
3. Share something about how this day or week has gone.
4. How do you want to be remembered by those who love you once you have shifted to a new place or country?

- The FGD will start by asking each person to team up with another person they know the least. If the group is uneven, I will put three in one group. Then present the cognitive topic. When they finish talking, I will ask some to share with the large group what they talked about.
- When this is done, I will ask them to find another partner they do not know well.
- This will then be followed by exploring the subject matter using the following thematic questions:

Based on this aim, the specific objectives of the research are as follows:

1. Given our condition now, what are the family planning choices Women Living with HIV and AIDS and are on ART practice?
2. What problems if any do we face regarding family planning choices and sex as well as desiring to have or not have children?
3. What makes us select your family planning choice?
4. How can we make our family planning choices work to our best?

Appendix V - Focus Group Discussion Guide-1 FOR HEALTH WORKERS AT ART CLINICS

Ice breaking or energizers, and motivators for focus group discussions

Before the FGDs could engage in serious dialogue, the researcher will motivate them to ice breaking. When groups first meet, there is often some fear about what may happen. This is true even when many do not know each other or have not attended group events before. As interactive and often fun sessions in form of ice breaking will have to run before the main proceedings because they do not just help people get to know each other but also to buy into the purpose of the event.

1. The Check in

The FGD will begin by asking them the following questions:

1. State your FULL name and what you like to be called in our discussion.
2. Say where you live now and another place you have lived (may use a different question if all from the same place).
3. Share something about how this day or week has gone.
4. How do you want to be remembered by those who love you once you have shifted to a new place or country?

- The FGD will start by asking each person to team up with another person they know the least. If the group is uneven, I will put three in one group. Then present the cognitive topic. When they finish talking, I will ask some to share with the large group what they talked about.
- When this is done, I will ask them to find another partner they do not know well.
- This will then be followed by exploring the subject matter using the following thematic questions:

Based on this aim, the specific objectives of the research are as follows:

1. Given the nature of HIV infection and sexuality issues affecting women who are HIV positive, what are the family planning choices that are available to Women Living with HIV and AIDS and are on ART?
2. What problems if any do you face in reaching out to them particularly those who desire to or not have children?
3. What do you do in fostering family planning needs of these women?
4. How do you go about sustaining the services to these women?

APPENDIX VI - CONSENT FORMTO PARTICIPATE IN A RESEARCH STUDY

Title of the Research study

Reproductive Choices for Women Living with HIV On ART: The Views of Providers and Clients on Contraception and Fertility

Investigator

Esnart Mwaba Nunkwe Lab Research Coordinator, CIDRZ Lusaka. Cell no. 097 7 406476.

Purpose and Background This is a research relating to HIV/AIDS and problems of faced when making reproductive choices This study is exploring this issue from the women's point of view who are on ART and also from health care providers to provide health workers opportunity to meet reproductive needs of women on ART; provide an opportunity for women on ART to have input in how they would like to receive family planning services and to Integrate family planning services with ART services.

The main purpose of this study is to explore the critical contraceptive and fertility choices Women Living With HIV and AIDS on ART make and their correlation with what health care providers provide to meet their needs.

Procedure

If I agree to participate, the following things will happen:

1. I will be asked questions on my views on family planning services and ART services
2. My name will not be written on the questionnaire.

Benefits

I will benefit more information on HIV transmission, prevention, coping skills, communication skills and psychosocial counselling.

Risks

There are no envisaged risks to me that may ensue from participating in the study.

Reimbursement

I will be paid a token sum of money as transport reimbursement and an expression of gratitude for availing time and information.

For further information about this, I may contact the Chair Person, Biomedical Ethics Committee of the University of Zambia, School of Medicine, PO Box 50110, Ridgeway campus, Lusaka.

Confidentiality

A private room shall be made available for answering the questionnaire.

An envelope will be provided for me to put in my completed questionnaire.

My identity will be kept confidential in so far as the law allows.

My answers to the questions will be kept confidential and will only be used for research purposes.

The answered questionnaire will be kept by the researcher in the strictest of confidence for only six months after which time all the responses will have been examined. There after it shall be destroyed.

Questions

……, the research assistant has discussed this information with me and offered to answer my questions. If I have further questions, I will contact her on phone no. ……. or Esnart Mwaba Nunkwe the researcher of the study on 097 7 406476.

Right to refuse or withdraw

My participation in the study is entirely voluntary and I am free to refuse to take part or to withdraw at any time without affecting or jeopardizing my future medical care.

Consent

I have been given a copy of this form and I have read it. The purpose of this research has been fully explained to me. I also understand that my rights and privacy will be respected. I agree to participate in this study.

Name of participant: ……

Signature or thumb print of participant ……..

Name and signature of interviewer ……