FACTORS ASSOCIATED WITH CONCEPTION AMONG HIV POSITIVE WOMEN IN MUBENDE DISTRICT, UGANDA

A Thesis
Presented to the
School of Postgraduate Studies and Research
Kampala International University
Kampala, Uganda

In Partial Fulfillment of the Requirements for the Degree
Master of Arts in Project Planning and Management

By:
Zziwa Martin Luther

September, 2011
DECLARATION A

"This dissertation is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

[Signature]

Name and Signature of Candidate

6/10/11

Date
DECLARATION B

"We confirm that the work reported in this dissertation was carried out by the candidate under our supervision".

Name and Signature of Supervisor

Date

Date
This thesis entitled "FACTORS ASSOCIATED WITH CONCEPTION AMONG HIV+ WOMEN IN MUBENDE DISTRICT, UGANDA" prepared and submitted by ZZZWA MARTIN LUTHER in partial fulfillment of the requirements for the degree of MASTERS OF ARTS IN PROJECT PLANNING AND MANAGEMENT has been examined and approved by the panel on oral examination with a grade of PASSED.

Name and Sig. of Chairman

Name and Sig. of Supervisor

Name and Sig. of Panelist

Name and Sig. of Panelist
DEDICATION

The researcher dedicates this piece of work to his family, wife Naguija Ronah. Z, and children Zziwa R. S, Ssenyonjo R, Ssendege R and Zziwa Randy Junior. Also to his parents Mr. Sam Musoke K and Mrs. Faith Nalubega B.
ACKNOWLEDGEMENT

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I feel greatly indebted to my esteemed respondents without whom it would not have been possible to complete this research. Thank you for the care and effort put in when giving opinions on the study variables.

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Last but not least I thank all my course mates for their support and encouragement.
ABSTRACT

The study was conducted to establish factors associated with conception among HIV + women in Mubende district, Uganda. The Specific objectives determined in this empirical investigations were the; (1) socio-demographic factors; (2) economic and socio-cultural factors; (3) level of perception of risks; (4) level of perceived benefits; (5) level of use of contraceptive methods; (6) significant differences in the level of perceived risk, benefits and level of use of contraceptive methods according to age of the respondents. The study employed a cross sectional design. Three hundred twenty two respondents were interviewed using an interview-administered questionnaire.

The statistical parameters used were; frequency and percentage, mean and Fisher’s one-way Analysis of Variance (ANOVA). The findings of the study were: Factors associated with conception among HIV +women are age, low educational level, unemployment, marital status, low income, alcohol consumption, perceived benefits of avoiding pregnancy in HIV +women and low utilization of contraceptive methods to prevent pregnancy.

It was concluded in this study that: There was significant difference in the level of perceived risk according to age, therefore the null hypothesis is rejected; There was no significant difference in the level of perceived benefits according to age, therefore the null hypothesis is accepted and there was also no significant difference in the level of use of contraceptives according to age, therefore the null hypothesis is accepted.

The recommendations for this study are; Government should set up programmes, policies and efforts towards HIV prevention, which should also address issues such as empowerment of women, creating
job opportunities, gender equality, education and integrate family planning services into (or with) HIV/AIDS services.
**LIST OF ABBREVIATIONS /ACRONYMS**

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<thead>
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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>AIDS</td>
<td>Acquired Immune deficiency syndrome</td>
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<tr>
<td>ART</td>
<td>Anti-retroviral therapy</td>
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<td>AZT</td>
<td>Zidivudine</td>
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<td>CBQ</td>
<td>Childbearing Questionnaire</td>
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<td>DHO</td>
<td>District Health Officer</td>
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<td>DHT</td>
<td>District Health Team</td>
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<td>HAART</td>
<td>Highly Active Antiretroviral Therapy</td>
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<td>HC III</td>
<td>Health Centre Three</td>
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<td>HCIV</td>
<td>Health Centre IV</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>MTCT</td>
<td>Mother to Child Transmission of HIV</td>
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<tr>
<td>NCM</td>
<td>Negative childbearing Motivation</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organization</td>
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<tr>
<td>PCM</td>
<td>Positive childbearing Motivation</td>
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<tr>
<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Scientist</td>
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<tr>
<td>STD</td>
<td>Sexually Transmitted Disease</td>
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<td>UAC</td>
<td>Uganda AIDS Commission</td>
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<td>UBOS</td>
<td>Uganda Bureau of Statistics</td>
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<td>Uganda Demographic Household Survey</td>
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<td>UNAIDS</td>
<td>Joint United Nation Against HIV/AIDS</td>
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<td>VCT</td>
<td>Voluntary Counseling and Testing</td>
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CHAPTER ONE
THE PROBLEM AND ITS SCOPE

Background of the Study
Conception among HIV Positive individuals is an important health and social issue. However, the proportion of HIV Positive women who conceive while being aware of their serostatus and the factors that influence this decision is not well documented (Kisakye et al., 2009).

Fertility intentions of HIV infected persons have significant implications on the transmission of HIV to sexual partners and their new born. Maternal transmission accounts for almost all new HIV infected children. Therefore this subset of women is likely to increase the number of HIV infected children and consequent public health burden.

Therefore there is need to analyze fertility intentions and associated factors of conception among HIV positive women. HIV positive women conceive often despite the counseling or knowing risks of pregnancy. The magnitude and factors associated with conception after diagnosis of HIV sero-positivity is poorly understood in developing countries including Uganda.

In the United States the prevalence of pregnancy after diagnosis of HIV was 18-40% (Stephenson et al., 1996). A study carried out in Zimbabwe showed sixteen of fifty two positive women interviewed conceived after diagnosis and seven of sixteen pregnancies were desired (Feldman et al., 2000). The prevalence of conception after diagnosis of HIV in Uganda is not known. However, fertility issues of HIV positive women are becoming increasingly important as HIV treatment with antiretroviral drugs has led to decreased transmission from infected mothers to their
children to almost 2% (The International Perinatal HIV group, 1999). Despite this, conception in such women is of great public health importance regarding efforts for HIV prevention, both heterosexual and vertical transmission.

HIV/AIDS is a disease that affects both children and adults worldwide. There are many women of reproductive age group (15-49 years) accounting for nearly half of adults living with HIV worldwide (UNAIDS, 2004). The HIV positive women in their prime ages still want to produce children despite their positive sero status. UNAIDS (2008) reported that expectant and new mothers accounted for 630,000 infants infected with HIV worldwide, which HIV they contract during their mother’s pregnancy, labour and delivery.

UNAIDS (2004) reported that the annual number of voluntary counseling and testing (VCT) clients had doubled, the number of women offered services to prevent mother to child HIV transmission had increased by 70% and the number of people receiving antiretroviral therapy increased by 56% between 2001 and 2003, this clearly shows that women with HIV still have the desire of giving birth despite all odds of infecting their Children and weakening their health.

With the advent of antiretroviral therapy (ART) and heightened global support of HIV/AIDS treatment, HIV-positive women are living healthier and longer lives. While research, programmatic, and policy communities have often taken as their point of departure that HIV positive women do not wish to or should not become pregnant, HIV-positive women have long advocated for recognition and fulfillment of their sexual and reproductive rights, including the ability to decide if and when to have children (Holmes W, 2007; ICW, 2002; Kaufman J, & Messer smith L, 2005)

In all settings, a range of factors are known to influence HIV-positive women’s desire to bear children, including: age; health status; cultural significance of motherhood; number of living children; previous
experience of a child’s death from HIV-related causes; the availability of HIV treatment and prevention of mother-to-child transmission (PMTCT) programs; the attitudes and influence of partners, family, and health care workers; and stigma and discrimination on the basis of HIV status especially for women coming from already marginalized populations (Nattabi B et al., 2009).

Among sero discordant couples, the desire for pregnancy has been shown to outweigh concerns about horizontal transmission (Van Leeuwen et al., 2008). Research from Brazil suggests that cultural norms are important and in some settings, HIV-positive men may be more likely to want children than HIV-positive women (Segurado A & Paiva V, 2007).

At the same time, studies show women may not want to become pregnant for fear of potential HIV infection in their children or the fear that these children may be orphaned (Nattabi et al., 2009; Paiva et al., 2003; Cooper et al., 2003; Kanniapann et al., 2008).

HIV-positive women have also expressed concern that, once pregnant, they may be more vulnerable to violence and abandonment by their partners, family and community (Cooper et al., 2003; Sahin et al., 2009). Spousal, family, community and cultural influences greatly shape HIV-positive women’s desire to become pregnant.

Studies in India, South Africa, Taiwan and Vietnam have demonstrated the weight of culture-specific spousal and family wishes that a woman will need to consider in addition to her own desires and HIV status (Kanniapann et al., 2008; Sahin et al., 2009; Ko N & Muecke, 2005; Oosterhoff et al., 2008). Some women may also take economic factors into account, viewing children as a future resource, for example, or as a means of maintaining a relationship that provides financial security (Dyer et al., 2002; Dyer et al., 2008; Speizer & White, 2008; Ujiji O, 2010).
Despite the growing importance of fertility issues for HIV infected women, little is known about the actual fertility intentions in women in Mubende district. In Uganda the prevalence of HIV in females aged 15-49 years was found to be 7.3% (Uganda AIDS Commission, 2004-2005). Studying fertility intentions before conception directly is essential to focus on the subset of HIV infected women who are most likely to conceive by choice. Counseling and other services to this subpopulation might differ substantially from those women who experience unwanted pregnancy. Since it is also known that maternal transmission accounts for almost all new HIV infected children (Lindegren et al., 1999), this subset of women is likely to increase the number of such HIV infected children. These intentions and how they vary by individual, social and demographic characteristics and health factors is not well understood in Mubende district. Likewise, whether the obstetric outcome among HIV positive women who conceive with knowledge of their sero-positivity differs from those who get to know after conception is not known.

Statement of the Problem

Fertility intentions as well as eventual conception among HIV positive women who already know their sero-status poses a threat to HIV preventive strategies all over the world. How often HIV positive women conceive either knowingly or unintentionally is not known.

The prevalence of HIV positive women who conceive while knowing their sero-status and factors associated with conception is not known. HIV positive women conceive often despite counseling and knowledge of conception use.

It is surmised that of the HIV positive women, many conceive knowingly out of choice, or may conceive out of negligence or complacency while others may conceive after pressure from relatives,
in-laws or other social pressure, whether and to what extent these factors apply to HIV positive women is not known in Mubende district.

Likewise whether obstetric outcome among mothers who conceive with knowledge of their sero-positivity differs from that of those who get to know after conception is not known.

In light of the above scenario, the prevailing problem which the study intends to investigate are the factors which force HIV positive women to conceive despite all the available methods of avoiding pregnancy as well as counselling messages given to them about the risks and complications associated with pregnancy and HIV.

The current status and trends of the epidemic in Uganda poses significant challenges to the country, particularly for designing, implementing and supporting an appropriate response to the disease. The number of HIV-positive individuals increased from 1 million in 2006 to about 1.2 million in 2010 (UAC, 2010).

Meanwhile, evidence of new infections (incidence) has shown an increase over the years with 132,500 new cases estimated in 2005. This includes 25,000 mother-to-child transmissions (UAC, 2007).

According to Uganda AIDS Commission (2007), women are infected more than men across the age spectrum from birth to age 45-49 years (60% for women versus 40% for men) and the gender impacts of the disease are significant. Women are often unable to negotiate safer sex due to lower status, economic dependence and fear of violence. Women endure the most of caring for sick family members and are more likely to be rejected, expelled from the family home and denied treatment, care and basic human rights.
**Purposes of the Study**

The following are the reasons for conducting this study:

1. To test the hypothesis of no significant differences in the level of perceived risk, benefit and level of use of contraceptive according to age of the respondents.
2. To generate new information based on the findings of the study.
3. To validate existing information within the context of the theory to which the study is based.
4. To bridge the gaps based on the previous studies mentioned in this study.

**Research Objectives:**

**General:** The study investigated on the factors associated with conception among HIV positive women in Mubende District, Uganda.

**Specific objectives:** Determined in this empirical investigation were the:

1. Socio-demographic characteristics of the respondents as to age, educational level, religion, occupation, marital status, number of year in marriage or with partner.
2. Economic and socio-cultural factors associated with conception among women with HIV.
3. Level of perceived risks associated with pregnancy among women with HIV.
4. Level of perceived benefits of avoiding pregnancy in HIV+ women.
5. Level of use of contraceptive methods among women with HIV.
6. Significant differences in the levels of perceived risk, perception on the benefits and use of contraceptive methods according to age of the respondents.
Research Questions
1. What are the socio-demographic characteristics associated with conception among HIV+ women?
2. What are the economic and socio-cultural factors associated with conception among women with HIV?
3. What is the level of perceived risk associated with pregnancy among women with HIV?
4. What is the level of perceived benefit of avoiding pregnancy in HIV+ women?
5. What is the level of use of contraceptive methods among women with HIV?
6. Are there significant differences in the levels of perceived risk, benefit and level of use of contraceptive methods according to age of the respondents?

Null Hypothesis
\( H_0 \): There are no significant differences in the level of perceived risk, benefit and level of use of contraceptive methods according to age of the respondents.

Scope
Time scope
The study was conducted for a period of two months from July to August 2011.

Geographical scope
The study was conducted in Mubende District in the following facilities: Mubende Regional Referral Hospital, Kassanda HCIV, Kiganda HCIV.
Theoretical scope
This study was based on the systems theory by Morgan (1986) who states that an organization is a system. A system is defined as a number of interdependent parts functioning as a whole for some purpose.

Content scope
The independent variables in this study were the factors associated with conception such as economic and socio-cultural factors. Other variables were: age, marital status, parity, education, occupation, disclosure, family size, perceived risks, perceived benefits and use of contraceptives. Conception was the dependent variable.

Significance of the Study
The following are the benefits derived from the findings in this study: During counseling the HIV positive women will recognize mitigating the fertility intentions without putting themselves and babies at undue risk of HIV complication, therefore there is need to describe motivations for fertility among HIV-infected individuals. The extent of these factors and how they may vary by individual, social, demographics characteristics and health factors is not well understood in Mubende district. The low rates of sero-status disclosure and contraceptives use reported in Uganda might influence conception even among HIV positive women despite regular advice and counseling. Results will help in pre-conception counseling of HIV positive women but also HIV negative women. This information will be used by the DHT, government and other stakeholders to institute strategies for effective implementation of PMTCT programmes and other preventive and promotive strategies that would
enhance the control and prevention of HIV among women of reproductive age group.

Operational Definitions of Key Terms

Conception is the visible evidence of pregnancy with products that may have been terminated by an abortion, operation or normal delivery provided the mother noted some body parts.

Factors associated with conception refer to the following:

Economic factors which include; income per month, number of biological children, number of biological children alive, dependants, sexual partners, number of years with HIV, marital status at HIV diagnosis and spouses HIV status.

Perceived benefit refers to benefits of a woman with HIV not to conceive and reasons for not conceiving.

Perceived risks refer to dangers for a woman to conceive with HIV and risks to a baby as well as enrollment in the PMTCT programme.

Socio-cultural factors that include; reasons to conceive and social habits.

Socio-demographic characteristics which are; age, educational level, religion, occupation, marital status and number of years in marriage.

Level of use of contraceptive methods includes; knowledge on family planning, methods used for family planning, sources of contraceptives, availability and accessibility to contraceptives and acceptability to use contraceptives.
CHAPTER TWO
REVIEW OF RELATED LITERATURE

Concepts, Ideas, Opinions from Authors/Experts
Factors associated with conception among HIV positive women.

Socio-demographics characteristics
More than two million children world wide are infected with HIV and almost all of them through mothers to child transmission of the virus, and nearly 500,000 deaths from AIDS occurred among children occur in the sub-Saharan Africa where AIDS has increased infant mortality in the most severely affected countries.

Suppression or viral load and infant formula may prevent vertical transmission, and therefore provide hope for HIV positive women to conceive. Until recently, assisting couples who are infected by HIV to conceive was considered inappropriate. Excessive perinatal transmission rates of approximately 20%-25% and limited life span of an infected mother were contraindications to assisted reproduction. A major obstetric breakthrough occurred in 1994 when a landmark trial was published that demonstrated dramatic reduction in the prenatal transmission of HIV with Zidovidine (AZT) from 25% down to 8% (Joia et al., 2001). The administration of highly active antiretroviral therapy (HAART) and the rapid expansion in medications that are available for treatment has resulted in further reduction in the prenatal transmission rates to approximately 1-2% in ideally treated patients (EPPATA, MMWR).

Further integration of reproductive health services and sexually transmitted diseases (STD)/HIV will enhance better reproductive practices in the community. HIV vertical transmission is still responsible for 90% of pediatric HIV infections, this attests to the infectivity of the disease and the importance of bringing reproductive issues to the
HIV/AIDS has influenced reproductive health at personal level, some individuals because of the high infant and child mortality still want more children so that some survive while others do not want to leave burden of care to others (Baylies, 2000).

Panazzo et al., (2003) reported that irrespective of the fertility desire, 47% of all participants in the Switzerland cohort felt that health care providers would not sufficiently address issues such as relationship, sexuality and desire for children. This issue is very important as regards the task of caring for HIV positive people and may influence decisions of many things like use of ARV’s and conception.

Similarly Chen et al., (2001) reported that 28-29% of HIV infected men and women receiving medical care in the United States desire children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in future. The fertility desires of HIV positive individuals do not always agree with their partners, HIV-positive individuals who desire children are young with few children if any.

**Socio-cultural and Economic factors**

Society has a lot of influence on the behavior and outcome of individuals with HIV, which behavior change determines the fertility (Margolese, 2004); in support of this are various studies and such include: age of sexual onset, women’s role in society to fight HIV, demand for big families, culture, economic reasons, fear of HIV to progress to AIDS, fear to infect unborn and widow remarriage as described below.

Women with HIV have a role to play in society and fighting HIV/AIDS as they bear the consequences of the disease and face daily stigma and discrimination, while in certain cultures they are even to blame by men for being carriers of HIV, for this reason women living with HIV should share their experiences with a variety of audiences...
and should be respected and acknowledged for their role in dealing with the epidemic but also in other aspect of everyday life (UNAIDS, 2004).

Families have developed norms of small families due to economic reasons just like HIV infected people avoid pregnancy because of economic reasons like, medical cost, looking after many children, orphans or if one is infected can die before bringing up his/her children (Rutenberg et al., 2000, Margolese, 2004), similarly women and girls take care of home and other source of income activity to sustain families which in turn reduces their chance of further education (UNAIDS, 2004).

There is increasing interest in ways of living that can affect health (health lifestyles) Health lifestyles can be defined as voluntary health behavior based on making choices from alternatives that are available in individual health situations (Cockerham et al., 1993). The various models of behavior used by psychologists in order to analyze how people view and react to health-related events have been critically reviewed and their implications discussed by Stroebe (1995) and Ogden (1996).

The health belief model is one of the most influential theories of health-related actions. It postulates that people’s behavior in relation to health is related to their perceptions of the severity of an illness, their susceptibility to it, the costs and benefits incurred in following a particular course of action. Behavior may also depend on a trigger, such as a symptom of ill health (Rosenstock 1966, Becker 1974). This model is used to understand people’s use of preventive health measures and services, as well as their response to symptoms and adherence with prescribed therapies. The model holds that socio-demographic and psychological factors are likely to modify health beliefs, just as emotions such as fear and denial (Ogden 1996).
Consequently, Becker and Rosenstock (1987) revised the model to include self-efficacy (i.e. beliefs in one's ability to perform the action).

Control can be categorized as internal (e.g. information, ability, urge) or external (e.g. opportunity, dependence on others) to the person (Ajzen, 1988), and is influenced by the person's expectations of the outcome. With this theory, a person's locus control has the greatest explanatory power over whether a person will engage in preventive health behavior (Wallston et al., 1976, Lau & Ware. 1981; Wallston, 1981); internal locus of control in turn has been associated with self-esteem (Hallal, 1982).

The motive force behind human childbearing conceptualized as originating in two broad traits which have biological bases, are shaped by experiences during early life and are expressed through their effect on desires and intentions. There are some instruments for measuring childbearing motivation, which integrate social, behavioral and biological approaches to childbearing motivation such as Childbearing Questionnaire (CBQ) (Miller 1995, Miller 2004). The instrument measures Positive Childbearing Motivation (PCM) and Negative Childbearing Motivation (NCM). PCM subscales include satisfaction of child rearing; feeling needed and connected. Instrumental values of children, traditional parenthood, and joys of pregnancy, birth and infancy. NCM subscales were identified as discomforts of pregnancy and child birth, fears and worries of parenthood, negatives of child care, and parental stress. Findings indicate that all of the correlations of PCM and NCM with childbearing desires and intentions were very significant. Correlations were greater for desires than intentions. The results confirm the validity of CBQ as a useful measure of fertility motivation. PCM and NCM had moderately long-term stability. The measures were not correlated with each other. Parenting experiences also affected subsequent childbearing motivations. Age was negatively associated with PCM.
Perceived risks associated with pregnancy and HIV

Most women who do not want children after HIV diagnosis cite vertical transmission risk as the reason, and most of the women already had children (Sowell & Misener 1997; Chen et al., 2001). Women who become pregnant after diagnosis may be younger, less educated, living with HIV longer and having more previous pregnancies, miscarriages and abortions than women who do not become pregnant. HIV-positive women in poor health may as likely to become pregnant as their healthier counterparts, but less likely to continue a pregnancy to term (Kline et al., 1995). Those who become pregnant or desire children after their diagnosis seem more confident in the efficacy of risk reduction strategies and often have no children (Kline et al., 1995).

The perceived risk of bearing an HIV-infected child, rather than a woman’s HIV status alone is often associated with reproductive decision-making (Sowell & Misener 1997). However, women’s knowledge and perception of vertical transmission risk varies widely. Some women believe that vertical transmission risk is over-estimated by health workers, or are just ambivalent and complacent. Although knowledge of available treatments to reduce vertical transmission may lead women to consider pregnancy, other factors may play an important role in pregnancy decisions. These include acceptability and value attached to children.

Risk perception varies with age and sex. Young females perceive themselves at higher risk of HIV infection than the male but the reverse is true in older age group, while HIV infected individual perceive themselves at risk than the HIV negative, married, divorced or separated women had higher risk perception (Kengeya et al., 1999) individuals of young age in Uganda have the “I don’t care attitude” as they do not want to die alone, this negative attitude breeds bad behaviours (Mukiza and Ntozi, 1995).
Mukiza and Ntozi (1995) reported that with HIV/AIDS epidemics, widows cannot find new sexual partners to continue producing children. This is because the traditional practice of widow inheritance where a male relative of the late husband used to marry the widow has been discouraged for fear of spreading HIV infection. The widow remarriage rates have fallen.

**Use of contraceptives**

Since antiretroviral medication allows HIV positive women to live longer and healthier lives, a better understanding of the interaction between HIV and family planning is needed. The demand for family planning is shaped not by fertility intention, but the acceptability and availability of contraceptives as well as by concerns about the effect of contraceptive methods on HIV infection. In East Africa where contraceptive prevalence is low, strong fears persist about the impact of contraceptive methods on women health, regardless of their HIV status (Rutenberg & Baek, 2005).

Although the HIV epidemic is growing among women, knowledge of contraception and access to family planning were limited among HIV positive women (Olaitan et al., 1996). Dual function contraceptives that simultaneously prevent HIV transmission as well as unwanted pregnancy might be the most appropriate contraceptive method of HIV positive women (IPPF Med Bills 2000).

While family planning is an ideal component of most antenatal care and maternal-child health programs within which PMTCT programs are offered, PMTCT sites often miss opportunities to provide HIV-positive clients with family planning counseling. The demand for family planning among HIV-positive clients varies depending on the extent of communities, openness about HIV/AIDS fertility norms and knowledge of PMTCT programs. In Kenya and Zambia, no differences were observed in use of contraceptives between HIV positive and HIV negative women in the study communities, but HIV positive women
had more affirmative attitudes about condoms and use them significantly more frequently than do their HIV negative counterparts (Rutenberg & Baek, 2005).

PMTCT, stakeholders including Uganda, endorse preventing unintended pregnancy among HIV positive women as a cornerstone of PMTCT services. Yet when this strategy is discussed, a tension is evident concerning whether to prioritize public health or reproductive rights. While family planning has been adapted as one of the elements of national PMTCT programmes, the content of services varies considerably (Rutenberg & Baek, 2005).

There is unmet need for family planning in women who would wish to postpone pregnancy. Desired children increase with age and men demand for big families than women. The never married, divorced, widowed, better educated and those with multiple partners were using condoms more than other groups in Rakai district (Lutalo et al., 2000).

HIV infected women after diagnosis still have choice of getting pregnant (Thackway et al., 1997), some women would wish to stop having children by using modern family planning such as tubal ligation, pill and Injections but these are against their culture (Rutenberg et al., 2000).

In Uganda, as in many countries with high rates if HIV infection, rates of sero-status disclosure after HIV testing and contraceptive use are low. Consequently, many HIV positive women conceive despite regular advice and counseling.

**Theoretical Perspective**

This study was based on the open systems model which looks at an organization as a complex living organism which interacts with its environment (Morgan, 1986; Bertalanffy, 1971).
The organization is depicted as distinct and separate from its external environment but with permeable and often ill-defined boundaries. It is a purposeful entity producing output which it exchanges with stakeholders in its external environment in return for resources and support and so is dependent upon its environment.

Ludwig von Bertalanffy (1971) is recognized as the founder of general system theory. The system approach is based on the concept that an organization is a system. A system is defined as a number of interdependent parts functioning as a whole for some purposes. The systems theorists contend that organizations are assemblages of interrelated and interdependent parts that have a complex unit. That like all systems, organizations are made up of inputs, a transformation process, outputs, feedback and the environment. They have a designated boundary (geographical or conceptual). Systems theorists say that the theory to be applied should be contingent (dependent variable) upon the prevailing conditions (independent variable) e.g. causes of a problem. Systems theory is an alternative to the classical and neo-classical organizations theories; the other competing theory was modern theories. Modern theories tend to be based on the concept that the organization is a system which has to adapt to changes in its environment. HIV and pregnancy should be managed like systems where programmes are designed and redesigned to realize the importance each part makes to the whole and the necessity of eliminating the parts that make negative contributions. The systems theory is mainly concerned with the problems of relationships, of structures and of interdependence, rather than with constant attributes of objects (Katz & Kuhn, 1996). One common element of all systems is described by Kuhn. Knowing one part of a system enables us to know something about another part. The information content of a “piece of information” is proportional to the amount information that can be inferred from the information (Kuhn, A, 1974).
in the general systems theory is the notion of emergence and interaction. As adapted in this study systems theory holds that factors associated with conception among HIV+ women are demographic factors, economic and socio-cultural factors, perceived risks and benefits and level of use of contraceptive methods.

Bertalanffy (1971) formulated the systems theory to account for similarities in the functioning of such diverse phenomena as living organisms, machines, galaxies and organizations. It was a unique departure from the earlier emphasis on separate analysis of individual parts. By systems, he means, complexes of elements standing in interaction. Cole (1986) simply defined a system as the collection of interrelated parts which form some whole. According to Nwankwo (1982), a system is a series of interrelated and interdependent parts, such that the interaction of the parts affects the whole system. Benedict (1995) explained a system as an inter-relation of parts, which has a specific function and the parts and their functions are interrelated to each other in specific ways so that together they can perform adequately to achieve the purpose of the system as a whole.

The concept of “system” dates back to Aristotle’s time (about 384-322 B.C). Aristotle suggested that the whole is greater than the sum of its part. Since that time, ‘system’ is a concept that has been applied to almost everything in our daily discussion such as body system, social system, solar system, communication system, and Health system.

According to Ludwig Von Bertalanffy, there are two basic types of systems: closed systems and open systems.

Closed systems are those which are completely self-supporting and do not interact with their environment. The astronaut’s life-support pack is a good example. Open systems are those which interact with their environment on which they rely for obtaining essential inputs, and for the discharge of their outputs. All
organizations are open systems, although the degree of interaction may vary. Three major features of the open system include; receiving inputs to outputs; and discharging their outputs into the environment (Cole, 1986). The success of an open system is a function of continuous inflow of inputs, their transformation and outflow of outputs. In other words, for an open system to maintain its operation, it must receive, from its environment, sufficient input of resources, get them processed and export the transformed resources to the environment in sufficient quantity.

**Figure 1: systems model by Morgan (1986)**

- **Inputs**
  - Human
  - Physical
  - Financial
  - Information resources
  - Drugs

- **Transformation process**

- **Outputs (products and services)**
  - Number of HIV+ women who conceive.
  - Level of mortality and morbidity of HIV + women and children

- **Feedback**

Environment
Related Studies
Factors associated with conception among HIV positive women.

Socio-demographic factors
Some studies have shown that age, marital status, education, family size and occupation influence the choice of conception among HIV positive women. Asimwe-Okiror et al. (1997) reported that in Uganda, the youngest age groups (15-24 yrs) of women with HIV were associated with getting pregnant. Amanda et al. (1999) in a study in Masaka found that women aged 20-24 years were strongly associated with high pregnancy, while HIV, marital status, illness and disease decreased pregnancy.

Young people are at risk, women in south-western Uganda educated to high level (above primary) perceived high risk to HIV infection just like those people who settled in a community more than 5 years (Amanda et al. 1999). Gray et al. (1998) in a population based study in Uganda reported that more pregnancy occurred in the age group of 20-29 years.

The HIV Cost and Services Utilization Study (HCSUS), which examined fertility desires of a large sample of HIV-positive men and women in the United States, revealed that 12% of all infected women and 26% of those younger than 30 years conceived after diagnosis (Schuster et al., 2000). An additional 10% had their infection diagnosis during pregnancy and carried to term (Schuster et al., 2000). HIV is an important influence on HIV-infected women’s reproductive choices, regardless of the decision being made (Bedimo-Rung et al., 2005).

A cross-sectional study of 1,092 HIV-infected men and women attending The AIDS support organization (TASO) in Jinja, Uganda showed 18% desired more children (Nakayiwa et al., 2006)
A study carried out in Zimbabwe showed sixteen of fifty-two positive women interviewed conceived after diagnosis and seven of the sixteen pregnancies were desired (Feldman et al., 2000).

Studies in several African countries have suggested that HIV diagnosis has little effect on subsequent child bearing (Ryder et al. 1991, Gregson et al., 1998, and Baylies et al., 2000). Yet, one limitation of these studies is that none has directly examined the effect of intention to reproduce following HIV diagnosis. A study of HIV-infected and uninfected Rwandan women, showed that both groups expressed equally the desires for additional offspring's after HIV testing (Allen et al., 1993) suggesting that knowledge of HIV infection and intention to reproduce following diagnosis may interact to influence subsequent reproduction.

Among HIV-positive women in four US cities, it was found out that although AIDS-related deaths among these women had decreased (due to use of highly active antiretroviral therapy), the numbers of such women of reproductive age had the relationship between factors that influence pregnancy decision making increased (Kirshenbaum et al., 2004). It is therefore important that studies take more interest among HIV positive women. HIV-positive and at-risk women of child-bearing age may benefit from counseling interventions sensitive to factors that influence infected women's pregnancy decisions (Chen et al., 2001).

The proportion of HIV infected women desiring a child in the US was shown to be lower than with the general population (Chen et al., 2001). Sero-positive women were also less likely than sero-negative women to have a subsequent pregnancy after leaning of their HIV status (Lindsay et al., 1995).

Work by Rutenberg et al., (2000) on respondents with HIV in Zambia showed that fear to develop the AIDS disease was a deterring factor to conception. There was good knowledge of the effects of
pregnancy in an HIV infected person. Overwhelming majority of women and men felt that infected women if they became pregnant the unborn baby would become infected and die because of the vertical transmission of the HIV virus. The same focus group also suggested that the infected couples should abstain by having two beds, having another partners elsewhere or send away the wife, these were superseded by the suggestion of using family planning methods mainly the condom.

Evidence from a population based survey in rural and urban study in Uganda showed that age of sexual onset has been increased from the previous 15 years to now about 18 years, similarly marriage in the age group 15-19 years has decreased to less than 15% and the non-regular sex in urban areas was 80% in exchange for money (Asimwe-Okior et al., 1997).

The six-district study in Uganda observed high proportions of widows not remarried in their prime reproductive ages rising from 59% among the 20-24 year olds to about 70% among the 25-29 and 30-34 year old. Naila et al. (1998) reported 51% of the respondents had a steady partner of whom 64% were sexually active; the mean age of the respondents was 32 years, while the length since diagnosis was 45 months and 1/3 of the women had no income of their own. This study also revealed that 31% of the respondents were married, 30% widowed, 29% single 10% separated.

In a study out in France, contraceptive use was reported in 91% of the visits of women with an HIV sero-negative partner and 69% of women with an HIV sero-positive partner (P = 0.001), indicating that significantly fewer discordant couples were using contraception. Consistent use of condom was higher in sero-discordant couples than in a sero-concordant couple’s odds ratio = 6.1, P<0.001). Among women with an HIV-sero-negative partner, the use of oral contraception and Intra uterine device decreased after the introduction
of highly active antiretroviral therapy in 1998 (P = 0.02 and was higher in couples with inconsistent condom use (OR =2.0, 95% CI 1.3 -3.3). These data emphasized the need for contraception counseling to include a discussion on reproductive issues as well as transmission of HIV and other sexually transmitted infections, taking into account the partner's sero-status (Olaitan et al., 1996).

In a study conducted in Burkina Faso, pregnancy incidence remained comparable with the pregnancy rate in the general population (Nebie et al., 2001). To improve this situation, approaches for involving husbands or partners in VCT and prevention of MTCT interventions should be developed, evaluated, and implemented.

Isabelle et al. (1997) reported a significant decrease in incidence of pregnancy in HIV- infected women in France; the study also reported a more than double in the voluntary interruption of pregnancy after HIV diagnosis with a four fold increase in sexually inactive women.

Evidence from a population based survey in rural and urban study in Uganda showed that age of sexual onset has been increased from the previous 15 years to now about 18 years, similarly marriage in the age group 15-19 years has decreased to less than 15% and the non-regular sex in urban areas was 80% in exchange for money (Asimwe-Okiror et al.,1997).
CHAPTER THREE

METHODOLOGY

Research Design

Employed in this study was the cross sectional design as it studied the pattern and characteristics of a certain group who were the HIV positive women at a shorter period of time from July to August 2011.

Within this design, a descriptive comparison was further utilized to distinguish significant differences in the levels of perceived risk, perceived benefits and use of contraceptive methods by age of the respondents.

Research Population

The target study population was 2000 HIV positive women within reproductive age group 15-49 years.

Sample Size

A medium sample size of three hundred twenty two (322) HIV positive women were involved in this study. Sample size was calculated using Kish and Leslie formula (1965)

Sampling Procedure

The purposive sampling was used to select the respondents utilizing these inclusion criteria: the women (1) were of reproductive age group (15-49 years) who tested positive for HIV at least 3 years before this study and has conceived or not conceived since knowing her sero status. (2) had their sero status disclosed at least 3 years ago at any government facility or any other private/NGO facility included in this study. Excluded in this study the eligible women but had previous diagnosis of infertility, the very sick and those who could not talk.
The simple random sampling was utilized to choose the actual respondents from the sampling frame of the qualified group based on the selection criteria set.

**Research instrument**

Data was collected using a researcher-devised questionnaire to all study participants. The questionnaires were administered to the respondents by the research assistants in the health facilities.

Three sets of researcher-devised questionnaires were administered to the study population namely the face sheet, questionnaire to determine the socio-cultural and economic factors, questionnaire to determine the perceived risk and benefit and level of use of contraceptive methods.

The face sheet contained the following socio-demographic characteristics of the respondents: age, educational level, religion, occupation, marital status and number of years in marriage. The respondents were to fill as directed.

The questionnaire on socio-cultural and economic factors included two items to determine socio-cultural factors and ten items to gather responses on economic factors. Each respondent chose an option that was appropriate to her.

Meanwhile the questionnaire on perceived risk, benefit and level of use of contraceptives included seven items on perceived risk, two options on perceived benefit and seventeen items on level of use of contraceptives methods. The questionnaires were answered using these response modes:

<table>
<thead>
<tr>
<th>Response Mode</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>(4)</td>
<td>You agree with no doubt at all</td>
</tr>
<tr>
<td>Agree</td>
<td>(3)</td>
<td>you agree with some doubt</td>
</tr>
<tr>
<td>Disagree</td>
<td>(2)</td>
<td>You disagree with some doubt</td>
</tr>
</tbody>
</table>

26
Strongly disagree (1) you disagree with no doubt at all Very Low
TABLE 1
Respondents of the study

<table>
<thead>
<tr>
<th>Institution</th>
<th>Number of registered women</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRRH</td>
<td>1040</td>
<td>202</td>
</tr>
<tr>
<td>Kiganda HCIV</td>
<td>280</td>
<td>40</td>
</tr>
<tr>
<td>Kasanda HCIV</td>
<td>200</td>
<td>22</td>
</tr>
<tr>
<td>Nabingola HCIII</td>
<td>120</td>
<td>12</td>
</tr>
<tr>
<td>Bukuya HCII</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>Kasambya HCIV</td>
<td>240</td>
<td>30</td>
</tr>
<tr>
<td>Madudu HCIII</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2000</strong></td>
<td><strong>322</strong></td>
</tr>
</tbody>
</table>

Validity and Reliability of the Instrument

To measure the validity of the research instrument, the researcher used content validity approach by use of three judges to assess every item of the instrument as valid, then the inter judge coefficient of validity was calculated. The content validity index was 0.8 considered as valid. Reliability of the instrument was established using a test-retest method. A pre-test was conducted in two Health facilities and a retest was done two weeks later in the same facilities to the same respondents and the results were the same. The respondents in the reliability test were not included in the actual study.

Data Gathering Procedures

*Before the data gathering*

1. An introduction letter from the school of post graduate studies and research was addressed to the authorities of the facilities in this study.
2. The researcher also requested permission from the district authorities to carry out the study in the district.
3. The research instruments were tested for validity and reliability.
4. The research assistants were oriented and briefed regarding the sampling and data gathering procedures.

**During data gathering**

The researcher and his research assistants first established a good relationship with the respondents; informed the respondents about the purpose of the interview and the study and requested them to participate in the study; went through the informed consent form for the respondents’ signature, the questionnaires were then administered to the respondents until they were fully completed. The questionnaires were translated into the local language for those who did not understand English. After completion of the exercise, the researchers thanked the respondents their time.

**After data gathering**

The data collected were organized and encoded into the statistical package for social sciences (SPSS) for data processing and analysis.

**Data Analysis**

The statistical tools used in this study were as follows: (1) the frequency and percentage distribution for the socio-demographic characteristics, socio-cultural and economic factors of the respondents ;(2) the mean for the level of perceived risk, perceived benefit and use of contraceptive method;(3) the Fisher’s one way Analysis of Variance(ANOVA) to establish the significant differences in the levels of perceived risk, benefit and use of contraceptive method by age of respondents.
The following numerical values were obtained and are for the levels of perceived risk, perceived benefit and use of contraceptive method:

<table>
<thead>
<tr>
<th>Mean Range</th>
<th>Response Mode</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.26-4.00</td>
<td>strongly agree</td>
<td>Very high</td>
</tr>
<tr>
<td>2.51-3.25</td>
<td>Agree</td>
<td>High</td>
</tr>
<tr>
<td>1.76-2.50</td>
<td>Disagree</td>
<td>Low</td>
</tr>
<tr>
<td>1.00-1.75</td>
<td>Strongly disagree</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

Ethical Considerations

Ethics was practiced in this investigation as indicated below:
1. To carry out the study approval was sought from the Ethics Committee of the school of post graduate studies and Research, Mubende District authorities and managers of the respective facilities that care for HIV patients in Mubende district.
2. Informed consent was obtained from the study participants before they were interviewed.
3. Confidentiality of all information obtained through questionnaire and records was ensured through use of anonymous identifiers and the principal investigator restricted access to the questionnaire.
4. Participants in the study were on a voluntary basis. No treatment, benefits or standard care was denied to those who declined to participate in the study.
5. Authors mentioned in this study were acknowledged through citations and referencing.
6. Findings of this study were presented in a generalized manner.

Limitations of the Study

An acceptable 5% margin of error was claimed by the researcher in view of the confounding variables beyond the researcher’s control, which were as follows:
1. The study obtained information from respondents by self-report, with this volunteered information there was a possibility of respondents not giving their true opinion of why they conceived. However having used respondents who had disclosed much of the information to the health facilities, it was most likely that the responses were valid.

2. Some respondents could not accurately remember all the information hence causing a recall bias. Nevertheless, these were very few and did not affect the validity of the results.
CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Demographic Characteristics of the Respondents

A. Age

Figure 2 shows the age distribution of the respondents which were as follows: about half of the respondents (49.52%) belonged to the early adulthood stage; 27.3% were in the middle adulthood, 13.02% were below 20 years of age (teenage group) and 10.16% were late adults.

Figure 2
Age of Respondents

Age as reflected in this study was a factor viewed among the respondents. Women between 20-40 years had a high likelihood of conceiving than those below 20 years or above 40 years. This finding is explained by the fact that this age group is still in the prime level with a high desire of having children. Likewise they may be economically depending on others making them vulnerable to risks of conception.
Gray et.al, (1998) in a population based study in Uganda reported that more pregnancies occurred in age groups 20-29 years. These results are also in agreement with the findings from a cohort of HIV infected mothers in France on pregnancy and contraception in which younger women were more likely to become pregnant after being diagnosed of HIV (Isabella D, 1997).

Some studies have shown that age, marital status, education, family size and occupation influence the choice of conception among HIV positive women. Asimwe-Okiror et al., (1997) reported that in Uganda, the youngest age groups (15-24 yrs) of women with HIV were associated with getting pregnant. Amanda et al., (1999) in a study in Masaka found that women aged 20-24 years were strongly associated with high pregnancy, while HIV, marital status, illness and disease decreased pregnancy.

B. Educational level

Figure 3 shows the educational level of the respondents which were as follows: about half of the respondents attained primary education (47.62%); 23.17% attained secondary education; 18.1% had not gone to school and 11.11% completed tertiary education.
Low education level was found to be a factor common among the respondents. Results were similar to a study conducted in Abidjan; Cote D'Ivore as cited in Desgree et al. (1999) in which they found that there was a positive effect of education level on conception. Another possible explanation for these results was based on the fact that Mubende district is a rural district with a low literacy rate of less than 38% (UBOS, 2002).

Hargreaves et al., (2008) reviewed 4000 abstracts and 1200 full papers and thirty-six articles, containing data on 72 discrete populations from 11 countries between 1987 and 2003, representing over 200,000 individuals, they found out that studies on data collected prior to 1996 generally found either no association or the highest risk of HIV infection among the most educated while studies conducted from 1996 onwards found out a lower risk of HIV infection among the most educated. Where data over time were available, HIV prevalence fell more consistently among highly educated groups than among less educated groups, in whom HIV prevalence sometimes rose while overall population prevalence was falling. In several populations, associations suggesting greater HIV risk in the more educated at earlier time points were replaced by weaker associations later.
C. Religion

In terms of religion, Figure 4 revealed the following findings: about half of the respondents were Catholics (47.65%); 31.21% were protestants; 13.1% were Moslems and the rest of the 8.1% belonged to other religions such as orthodox, seventh Adventist etc.

Figure 4
Respondents’ Religion

Majority of the respondents who conceived were Catholics. This could be explained by the fact that the Catholic Church doesn’t promote use of contraceptives and it is the dominant religion in the district.

Much of the research in this area has focused on Muslim populations in African countries. It has been suggested that several of the religiously motivated behaviors practiced by Muslims are favorable for HIV prevention and have led to lower HIV prevalence rates among Muslims. These factors include higher rates of circumcision, fewer self-reported instances of extramarital sexual intercourse and reduced consumption of alcohol (decreasing high-risk sexual activity).

It has also been argued that the Pentecostal church’s emphasis on salvation and strong social presence (e.g. youth groups, frequent prayer meetings) prevents members from engaging in as much extra-
and pre-marital sex as other Christian denominations, thus protecting against HIV. However, strong religious beliefs do not always correlate with HIV protective behaviors.

In a rural region of Senegal, Muslims and Catholics who considered religion "very important" were less likely to display HIV-preventive attitudes (e.g. intentions to change behavior to protect against contracting HIV) than those who attached less importance to religion.

In other studies, religious affiliation has been found to correlate with level of HIV knowledge; but not necessarily with protective behaviors. Evidence from South Africa (Garner 2000), Zimbabwe (Gregson et al., 1999), and Brazil (Hill, Cleland, and Ali 2004) shows that members of Pentecostal and AIC churches exhibit reduced risk of HIV infection, due in part to their reduced likelihood of having extramarital partners when compared with members of other religious groups.

Another recent study shows that independent of denomination, attendance at religious services is associated with reduced odds of both risk behavior and perceived risk, an effect that is particularly strong for members of Pentecostal churches (Trinitapoli and Regnerus 2004). Other research, however, suggests that due to restrictions on sexual behavior and the consumption of alcohol and the practice of circumcision, Muslims in Africa may experience reduced levels of risk for contracting HIV (Gray 2004; Gray et al., 2000). By establishing patterns of denominational differences in sexual behavior, and subsequently in HIV risk, the literature described above has made an important contribution to better understanding the relationship between religion and the AIDS epidemic at the individual level.

As the HIV/AIDS crisis has spread throughout the world, HIV rates among Christian populations have remained significantly higher than among Muslim populations. This trend can be seen through the
example of Nigeria, a state known for conflict between Muslim and Christian populations. With an HIV positive population of over 3 million, Nigeria has the second highest burden of HIV infection in sub-Saharan Africa. Within Nigeria, the highest prevalence rates are found in Christian areas of the country, such as Benue where 10% of the population is HIV positive. All of the states with an HIV prevalence rate above 6% are in the Christian area of the country. The prevalence rates within Muslim states, on the other hand, generally fall between 2-4%. Given the religious conflict in Nigeria, many Muslims and Christians present different explanations for the variance in HIV rates. Muslims can argue that Christians are more lax in following the moral code set forth by their religion and are thus more likely to contract HIV. Christians, on the other hand, explain these rates by arguing that the societal enforcement of the Islamic code is more oppressive. While both arguments are common, neither captures the complexity of the issue. Religion does play a large role in shaping the HIV/AIDS crisis in Nigeria, but not because of underlying differences in beliefs and moral choices between Christians and Muslims.

D. Occupation

The occupation of the respondents as noted in Figure 5 were observed in these percentages: half of the respondents (50.64%) were peasants; 21.02% were engaged in various businesses such as managing retail shops, selling food and items like clothes, shoes in markets, selling alcohol etc; 20.38% were unemployed and 7.96% were civil servants.
The study found out that peasants and unemployed women conceived more than the employed. Hence, employment appeared to be a dominant demographic characteristic among HIV+ women. The unemployed and peasants depend economically on their partners and bear children for their spouses for economic survival.

Women and girls take care of home and other source of income activity to sustain families, which in turn reduces their chance of further education (UNAIDS, 2004).

E. Marital Status

Notably, the marital status of the respondents shown in Figure 6 revealed this numerical picture: 42% of the respondents were married, 37.42% were cohabiting; 12% were divorced and 8.6% were single mothers.
Majority of the women who conceived were either married or cohabiting meaning that they had a partner who could make them pregnant unlike those who had divorced or were staying alone. This finding was contrary to the results of the study by degrees et al., (1999) on impaired fertility in HIV-1 infected pregnant women in which they showed that marital status significantly delayed the occurrence of pregnancy. Amanda and colleagues (1999) in their study conducted in Masaka, Uganda also established that marital status decreased pregnancy. Those two studies were carried out in the late 90's when ARV'S were not available in most of the African countries and the health teaching at that time was to avoid pregnancy as long as a woman was HIV positive. But with the introduction of PMTCT services even in remote areas of Africa the trend has changed HIV + women can now be allowed to make informed decisions about conception.

Most new HIV infections in sub-Saharan Africa now occur in married and cohabiting couples, many of whom do not realize that only one of them may be infected with HIV. HIV-negative individuals living in stable HIV-discordant partnerships (in which one partner is HIV-infected while the other one is not) are twice as likely to get infected
with HIV as those living in concordant HIV-negative relationships (Bedimo-Rung et al., 2005).

**F. Number of Years in Marriage or With Partners**

The number of years in marriage or with a partner as reflected in Figure 7 were noted to be in these percentages as follows: less than half of the respondents (47%) had stayed with their partners for more than three years; 23% had lived with their partners between 1-2 years; 20% had stayed together for 2-3 years and 10% had been in marriage for less than a year.

**Figure 7**

**Numbers of Years in Marriage or with Partner**

Based on Figure 7, those who had been married for more than one year conceived more than those who were in marriage for less than a year. Couples under observable circumstances want more children, accessibility to PMTCT services, experience stigma of childlessness, pressure from relatives, need of a child of different sex etc. The sex of the child wanted and need to have a baby for the new partner were some of the factors that influenced HIV+ women's decision making (Van Benthen et al., 2000).
Economic Factors Associated With Conception Among HIV+ Women

The economic factors associated with conception among HIV+ women shown in Table 2A reflected a view in terms of percentage majority in the aspects of income per month (60% less than 100,000 UGX); number of biological children (88% had at least one child); number of biological children still alive (85% had at least one child alive); total number of dependents (83% had at least one dependant); number of sexual partners (80% had one partner) and marital status at the diagnosis of HIV (45% were married).

While Table 2B obviously showed these aspects in percentage majority:
<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income Per month in Ugandan Shillings (UGX)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 100,000</td>
<td>182</td>
<td>60</td>
</tr>
<tr>
<td>100,000/-200000</td>
<td>62</td>
<td>20</td>
</tr>
<tr>
<td>200001-500000</td>
<td>32</td>
<td>11</td>
</tr>
<tr>
<td>500001-1000000</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>above 1 million</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>304</td>
<td>100</td>
</tr>
<tr>
<td><strong>Number of Biological Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td>1-2</td>
<td>103</td>
<td>33</td>
</tr>
<tr>
<td>3-5</td>
<td>127</td>
<td>40</td>
</tr>
<tr>
<td>Above 5</td>
<td>46</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>315</td>
<td>100</td>
</tr>
<tr>
<td><strong>Number of Biological Children Still Alive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>43</td>
<td>15</td>
</tr>
<tr>
<td>1-3</td>
<td>160</td>
<td>52</td>
</tr>
<tr>
<td>Above 4</td>
<td>105</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>308</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Number of Dependents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>52</td>
<td>17</td>
</tr>
<tr>
<td>1-3</td>
<td>124</td>
<td>40</td>
</tr>
<tr>
<td>4-6</td>
<td>88</td>
<td>28</td>
</tr>
<tr>
<td>Above 6</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>309</td>
<td>100</td>
</tr>
<tr>
<td><strong>Number of Sexual Partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>244</td>
<td>80</td>
</tr>
<tr>
<td>two</td>
<td>42</td>
<td>14</td>
</tr>
<tr>
<td>More than 2</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>306</td>
<td>100</td>
</tr>
<tr>
<td><strong>Marital Status at the Diagnosis of HIV</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>138</td>
<td>45</td>
</tr>
<tr>
<td>Single</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Divorced</td>
<td>40</td>
<td>13</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>91</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>310</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data 2011
### Table 2B
Economic Factors Associated with Conception Among Women With HIV

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How Long one Has Been HIV Positive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than one year</td>
<td>92</td>
<td>29</td>
</tr>
<tr>
<td>1-2 years</td>
<td>116</td>
<td>37</td>
</tr>
<tr>
<td>2-3 years</td>
<td>55</td>
<td>18</td>
</tr>
<tr>
<td>above 3 years</td>
<td>50</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>313</td>
<td>100</td>
</tr>
<tr>
<td><strong>Whether one is Aware of Partner’s HIV Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>191</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>125</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>316</td>
<td>100</td>
</tr>
<tr>
<td><strong>Spouses/Partners HIV Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>163</td>
<td>51</td>
</tr>
<tr>
<td>Negative</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Not known</td>
<td>114</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>318</td>
<td>100</td>
</tr>
<tr>
<td><strong>Whether one’s Spouse/Partner is aware of HIV Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>213</td>
<td>68</td>
</tr>
<tr>
<td>No</td>
<td>101</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>314</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data 2011

**As shown in Table 2A**

**Income per month**

Income per month as an economic factor among the respondents revealed that low income earners were conceiving more than those earning over five hundred Ugandan shillings a month with a known reason that these women depend on their spouses for economic support. This is supported by the facts from Figures 2, 3, 5 and 6 where majority of women who conceived were early adults, with
low education, unemployed or peasants and were married or cohabiting.

**Number of biological children**

Majority of the respondents had at least more than three children as supported by the fact that about half of the respondents who conceived were in their prime reproductive age groups hence the desire to have more children coupled with low use of contraceptives as reflected in Table 4. Amanda et al., (1999) in a study of fertility and HIV in Masaka established that low gravidity was associated with increased pregnancy in HIV women; just as low health facility attendance by HIV infected women as compared to HIV negative women reduced the risk of pregnancy. Similar findings by Desgrees et al., (1999) showed that outcome of previous pregnancy, post-partum amenorrhea, post partum abstinence, contraceptive use, marital status and education level affected the next pregnancy.

Many factors influencing HIV-positive women’s pregnancy decisions are not different than those influencing non-infected women, such as the need to satisfy a partner's desire to have a child and to experience fulfillment and happiness (Siegel & Schrimshaw, 2001; Sowell, Murdaugh, Addy, Moneyham, & Tavokoli, 2002).

The values of American society surrounding motherhood make pregnancy decisions even more complex for HIV-positive women (Ingram & Hutchinson, 2000) and being HIV positive does not diminish women’s natural and socialized motherhood values. Women still view reproducing as socially and psychologically fulfilling and desirable (Ingram & Hutchinson, 2000). Traditional gender roles and interpersonal motivation to have children are significantly associated with pregnancy intentions of women who are HIV positive (Sowell et al., 2002). Siegel and Schrimshaw (2001) reported that women with HIV felt a need to justify their desire to have children given the presence of an illness that they could transmit to their children.
Examples of such justifications included: God would protect the baby; other women with HIV had healthy babies; AZT would prevent seroconversion; and being “healthy” and young would most likely result in the birth of a healthy child (Siegel & Schrimshaw, 2001).

Number of biological children alive

Table 2A showed that despite being HIV positive women, these women can still produce live babies who can survive whether infected or not. It is very important to plan for these children in postnatal clinics and PMTCT services. Shonda M et al. (2006) reported that 82.4% of women in their study indicated having had at least one child, 58% reported having two or more children, in terms of lifetime pregnancy history, 62% of the women indicated they had experienced pregnancy prior to their diagnosis, of these women, 30.4% had carried a pregnancy to term, 32.6% received their diagnosis during pregnancy, and 32.6% had been pregnant since receiving their diagnosis. Overall, 29.6% of the total sample had become pregnant since receiving their diagnosis.

Chen et al., (2001) reported that 28-29% of HIV infected men and women receiving medical care in the United States desire children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in future. The fertility desires of HIV positive individuals do not always agree with their partners, HIV-positive individuals who desire children are young with few children if any.

In all settings, a range of factors are known to influence HIV-positive women’s desire to bear children, including: age; health status; cultural significance of motherhood; number of living children; previous experience of a child’s death from HIV-related causes; the availability of HIV treatment and prevention of mother-to-child transmission (PMTCT) programs; the attitudes and influence of partners, family, and health care workers; and stigma and discrimination on the basis of HIV
status especially for women coming from already marginalized populations (Nattabi B et al., 2009).

**Total number of dependents**

Majority of the respondents had dependents, low income, as shown in Table 2A and low education and peasants as shown in figure 3 and figure 5. Such a community is likely to have a high burden of disease. Society has a lot of influence on the behavior and outcome of individuals with HIV, which behavior change determines the fertility (Margolese, 2004); in support of this are various studies and such include: - age of sexual onset, women's role in society to fight HIV, demand for big families, culture, economic reasons, fear of HIV to progress to AIDS, fear to infect unborn and widow remarriage.

**Number of sexual partners**

The overall picture in Table 2A implied that the spouses of these women were cohabiting with other women and vice versa. As reflecting in Figure 6 where the percentage of cohabiting women was 37%. This has implications on the spread of HIV in this population.

According to Uganda AIDS Commission (2007) HIV transmission is highest in married or cohabiting couples (45%-50%) compared to commercial sex workers (10-20%), casual sex (10-15%) and mother to child transmission at 24%, medical injections at 1% and blood transfusion at less than 1%.

Men's multiple sexual partnerships contribute to the spread of HIV in sub-Saharan Africa, but the social determinants of these relationships remain poorly understood. Prevailing wisdom suggests that men's institutionalized authority over women and their control of economic resources are key facilitators of multiple partnerships in this region. Men's exposure to or freedom from social control mechanisms embedded in family and village life may also play a role.

The prevalence of self-reported multiple partnerships vary widely among countries. Sociodemographic patterns of such partnerships
confirm the importance of men's control of economic resources and suggest that men's freedom from social control mechanisms may be more important than their authority over their wives (Bingenheimer JB et al., 2005).

**Marital status at the time of HIV diagnosis**

As shown in Table 2A, the majority percentage implies that either their spouses were also HIV + or these women had not disclosed their status to their partners. This explains why HIV rates are high in married people. Rutenberg & Baek (2005) found out that in many African countries with high rates of HIV infection, the rate of disclosure is very low. This could also be due to the fact that men do not attend PMTCT services in Mubende district.

In one study which compared women who had become pregnant after their HIV diagnosis with women who had not, Kline and colleagues reported that women who became pregnant tended to be younger, less educated, more sexually active, more experienced with pregnancy and abortion, less likely to use contraception, more likely to want future children, more likely to have a partner who wanted a child, and less likely to know their partner's HIV status than women who did not become pregnant.

**AS shown in Table 2B**

**Number of years with HIV**

The overall picture in Table 2B in terms of number of years with HIV, projected that most of the infections were new i.e. less than three years and this was further explained by Figure 7 on the number of years in marriage where 53% of the respondents were in marriage for not more than three years. This finding may be explained that age group of most respondents is still prime with a high desire of having children, on the other hand most infections are new meaning that many are still asymptomatic of HIV disease. Likewise they may be
economically depending on their spouses making them vulnerable to conception.

These results are in agreement with the findings of from a cohort of HIV infected mothers in France on pregnancy and contraception younger women who had been in marriage for a few years were more likely to become pregnant after being diagnosed of HIV (Isabella D et al.1997).

**Awareness of partner’s status**

Sixty percent of the respondents were aware of their spouse’s status while 40% were not. This implies that majority of the respondents’ spouses had disclosed their status to them. This explains the scaled up HIV/AIDS services within most parts of the district. Studies of HIV status disclosure rates to sexual partners from the developing world i.e sub-Saharan Africa (one from Burkina Faso, two from Kenya, three from Rwanda, and five from the United Republic of Tanzania), and one reporting disclosure rates from a multi-country study in Kenya, Tobago, and the United Republic of Tanzania. The assessment period for disclosure ranged from two weeks to almost four years. The rates of disclosure among the studies from the developing world were notably lower than rates reported from the developed world. The rates ranged from 16.7% to 86%. Among the studies that reported disclosure rates to current and/or steady partners the average rate of disclosure was 49%, considerably less than the average rate reported from studies conducted in the developed world 79% (Niccolai L et al.,1999).

According to reviews of the fifteen studies based in the United States of America (USA) by Suzanne & Medley (2004) that reported HIV status disclosure rates to sexual partners, six reported on samples of women only, three reported disclosure rates among homosexual men and the remaining six studies included both men and women in their sample. Fourteen of the fifteen studies recruited their participants
from clinic-based settings. All fifteen reported disclosure rates to sexual partners and some studies included multiple categories of sexual partners such as current, past, casual and steady partners. The period of time that lapsed between diagnosis and assessment of disclosure ranged from two months to 13 years. There was also one study from France that looked at HIV status disclosure to sexual partners among HIV-positive patients attending treatment services at an HIV clinic in Paris, France. The disclosure rates to sexual partners were quite high, ranging between 42% to 100%, depending in large part on the type of sexual partner to whom the person disclosed. The lowest rates of disclosure were reported among past partners or current casual partners. Among the studies that reported disclosure rates to current and/or steady sexual partners the average rate of disclosure was 79%. There was variation in rates of HIV status disclosure to sexual partners among different ethnic groups in the USA and in France.

Armistead (1999) reported a relatively lower percentage of women who disclosed to partners (56%) as compared to women from a study by Simoni (87%) and men from a study by Hays (98%). In a study among ethnically diverse HIV-infected women, Simoni found that Spanish-speaking Latinas reported lower rates of disclosure than English-speaking Latinas, African-Americans.

**Spouse's HIV Status**

About half 51% of the respondents’ spouses were HIV positive. This is explained by the fact that about half of the respondents were already married at the time of HIV diagnosis and majority of respondents had been with HIV for more than a year. In a study by Kairania R et al., (2006) reported rates of disclosure were 81.3% in male HIV-positive and 80.2% in female HIV-positive discordant couples. Disclosure did not vary by age, education or occupation. In summary, disclosure of HIV-positive results in discordant couples using
facilitated couple counseling approach is high, but requires a stepwise process of sensitization and agreement by the infected partner.

**Whether one’s spouse/partner is aware of HIV status**

Over half 68% had disclosed their HIV status to the partners while 38% had not. These findings were contrary to earlier studies from different African countries with high rates of HIV infection where the rate of disclosure was very low (Rutenberg and Baek, 2005). But this can be explained by the improved HIV/AIDS services especially within districts. HIV positive women have also reported a fear of disclosure, both of their own HIV status and of the status of their children (Serovich, Kimberly, & Greene, 1998). As such, HIV-positive women devote a great deal of mental and physical energy to ensuring privacy (Ingram & Hutchinson, 2000). HIV-infected women have legitimate reason to fear disclosing their HIV status as breaches of confidentiality may lead to rejection and discrimination from partners, family members, friends, community members, employers, and health care providers (Serovich et al., 1998). These relationships may be necessary for the economic and emotional survival of the women and their children.

Recent studies of HIV disclosure in Africa show that most people (approximately 80%-90%) have disclosed to someone, but more meaningful is whether or not someone is able to disclose to key members of their social network. A review by Medley and others of studies conducted in sub-Saharan Africa found that disclosure rates to sexual partners ranges from 17% to 86%.

The World Health Organization estimates that 52% of PLWHA disclose their status to their sexual partners in Africa. Other studies of disclosure to sexual partners or spouses in Africa have reported rates ranging from 24% to 91% (WHO, 2003).

In Uganda, the study by King and colleagues reported a disclosure rate of 62% to sexual partners. Although limited, emerging data on
disclosure to members of a person’s social network other than spouses or sexual partners, such as family, children, and friends, indicate that rates of disclosure to these members of the network are much lower than disclosure to sexual partners.

Visser et al., (2008) examination of disclosure among women in South Africa established that 20% had reported to their parents and 23% to other family members. In Ethiopia, Deribe et al.,(2008) found that approximately one third had disclosed to family or relatives, and only 6% to children and 7% to neighbors. Evidence is beginning to emerge that there are differential rates of disclosure across different segments of a person’s social network, and men and women may differ with regard to who they disclose to. For example, HIV-positive parents did not disclose as much to their children as they did with other adults.

In Uganda, King et al. ,(2008) noted that men were most likely to disclose their status to their sexual partners and brothers, while women were more likely to disclose their status to their sisters. Similarly in Kenya, Miller and Rubin (2007) established that men were more likely to disclose to their wives than other family members, while women were more likely to disclose to family members.

Women-specific studies such as the one by Rice et al. ,(2009) noted that women were more than 2.5 times more likely to disclose to a particular network member if that member provided the women with social support. Moreover, these women preferred to disclose to female network members who were believed to also be HIV positive.

From a public health perspective, HIV disclosure has been advocated primarily because of its contribution to reduced risk of HIV transmission as disclosing HIV status, especially to one’s sexual partner, encourages the partner to engage in preventive behaviors such as condom use and HIV testing. HIV disclosure is also thought to contribute to reduced HIV stigma in the community and enhanced awareness of the importance of HIV prevention. Conversely,
community support especially from groups of PLWHA is thought to enhance disclosure of HIV status to family members.

**Socio-Cultural Factors**

Table 2C evidently revealed these findings: regarding intentions to conceive, 22% wanted more children; 24% wanted a child of a different sex; 10% wanted to deliver for the new partner; 13.2% wanted to deliver because of pressure from relatives, spouses or in-laws; 9% considered themselves to be in reproductive age; 7.8% believed to be healthy; 5% wanted to replace a dead child and 8.7% feared stigma of childlessness.

As to social habits, more than half 68.3% were drinking alcohol; 25.6% did not take alcohol or smoked; 3.5% were drinking alcohol and smoking while 2.6% (6) were smoking.

Table 2C

**Socio-cultural Factors Associated With Conception Among Women with HIV**

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons for Intentions to Conceive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure from relatives</td>
<td>14</td>
<td>4.5</td>
</tr>
<tr>
<td>Pressure from in laws or spouse</td>
<td>27</td>
<td>8.7</td>
</tr>
<tr>
<td>Stigma of childlessness</td>
<td>27</td>
<td>8.7</td>
</tr>
<tr>
<td>Still health</td>
<td>24</td>
<td>7.8</td>
</tr>
<tr>
<td>Wanted a boy</td>
<td>37</td>
<td>12.0</td>
</tr>
<tr>
<td>Wanted a girl</td>
<td>38</td>
<td>12</td>
</tr>
<tr>
<td>Wanted to deliver for the new partner.</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Still in reproductive age group</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>To replace those who died</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Wanted more children</td>
<td>68</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>309</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>Social Habits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks alcohol</td>
<td>155</td>
<td>68.3</td>
</tr>
<tr>
<td>Smokes</td>
<td>6</td>
<td>2.6</td>
</tr>
<tr>
<td>Drinks alcohol and smokes</td>
<td>8</td>
<td>3.5</td>
</tr>
<tr>
<td>Others</td>
<td>58</td>
<td>25.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>227</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Primary data 2011
This study confirmed conspicuously the following socio-cultural factors among the respondents: alcohol consumption, need for more children, need for a child of different sex, pressure from relatives, in-laws or spouse, stigma of childlessness and delivering for a new partner. These findings are similar to various studies done in different parts of the world. The sex of the child wanted and the need to have a baby for the new partner were some of the factors that influenced HIV + positive women’s decision making (Van Benthen et al., 2000). These findings are also supported by a study in Switzerland by Panazzo and colleagues (2003) in which 20% of HIV + women expressed desires for children. According to Ntozi (1997) the culture in most parts of Uganda is that people want to leave behind a heir or to have a big family for social reasons.

In a study by Beyeza et al., (2010) reported that 59%, of the participants, desired to have children. The belief that their partner wanted children was a major determinant of the desire to have children, irrespective of the HIV sero-status (adjusted odds ratio 24.0 (95% CI 9.15, 105.4)). Among couples in which the woman was HIV-positive, young age and relatives' expectations for children were significantly associated with increased fertility desire, while among couples in which the man was positive; knowledge of ART effectiveness was associated with increased fertility desire.

Studies also show a consistent association between alcohol use and sexual risks for HIV infection. Among people who drink, greater quantities of alcohol consumption predict greater sexual risks than does frequency of drinking (kalichman et al., 2007).

In addition, there are clear gender differences in alcohol use and sexual risks; men are more likely to drink and engage in higher risk behavior whereas women's risks are often associated with their male sex partners' drinking. Factors that are most closely related to alcohol and sexual risks include drinking venues and alcohol serving
establishments, sexual coercion, and poverty. Research conducted in southern Africa therefore confirms an association between alcohol use and sexual risks for HIV. Sexual risk reduction interventions are needed for men and women who drink and interventions should be targeted to alcohol serving establishments (Kalichman et al., 2007)

South Africa has a massive burden of HIV and alcohol disease, and these pandemics are inextricably linked. Much evidence indicates that alcohol independently influences decisions around sex, and undermines skills for condom negotiation and correct use. Thus, not surprisingly, people with problem drinking in Africa have twofold higher risk for HIV than non-drinkers. Also, sexual violence incidents often coincide with heavy alcohol use, both among perpetrators and victims.

Cherish et al., (2010) reported that reducing alcohol harms necessitates both population- and individual-level interventions, especially raised taxation, regulation of alcohol advertising and provision of brief Interventions. Alcohol counseling interventions must include discussion of linkages between alcohol and sex, and consequences thereof. Within positive-prevention services, alcohol reduction interventions could diminish HIV transmission.

**Level of Perception of Risks Associated With Conception and Perceived Benefits of Avoiding Pregnancy Among HIV + Women.**

Table 3 Shows perceived risk and perceived benefits associated with pregnancy among HIV +women who participated in the study. Leaving orphans to suffer is the highest ranked risk, followed by the fear of dying fast, infecting the baby, becoming very sick and baby falling sick all the time as the five highly ranked feared risks. Generally perceived risk was high.

Highest ranked in perceived benefits or reason for not conceiving are avoiding orphans, living longer and not wanting to
infect the child. Generally perceived benefits of avoiding pregnancy in HIV positive women was high.

Table 3
Level of Perceived Risk and Perceived Benefits Associated With Pregnancy Among HIV + Women

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Mean</th>
<th>Interpretation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Perceived Risk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Following your testing positive for HIV you had intentions/desire of getting a child.</td>
<td>3.08</td>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td>Intention to conceive within the last 3 years.</td>
<td>2.99</td>
<td>High</td>
<td>7</td>
</tr>
<tr>
<td><strong>The dangers for a woman to conceive are as follows</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No danger</td>
<td>1.64</td>
<td>Very low</td>
<td>15</td>
</tr>
<tr>
<td>She dies very fast</td>
<td>3.25</td>
<td>High</td>
<td>2</td>
</tr>
<tr>
<td>She can leave orphans to suffer</td>
<td>3.33</td>
<td>Very high</td>
<td>1</td>
</tr>
<tr>
<td>She becomes very sick</td>
<td>3.21</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td><strong>Risks to a baby when a woman with HIV conceives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No danger</td>
<td>1.65</td>
<td>Very low</td>
<td>14</td>
</tr>
<tr>
<td>Baby gets infected with HIV</td>
<td>3.24</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>Baby fall sick all the time</td>
<td>3.18</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>Enrolled for the PMTCT programme for any of your conceptions</td>
<td>2.33</td>
<td>Low</td>
<td>13</td>
</tr>
<tr>
<td>You are on ARVs</td>
<td>2.75</td>
<td>High</td>
<td>8</td>
</tr>
<tr>
<td><strong>Period on ARVs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>2.44</td>
<td>Low</td>
<td>11</td>
</tr>
<tr>
<td>1-2 yrs</td>
<td>2.65</td>
<td>High</td>
<td>10</td>
</tr>
<tr>
<td>2-3 yrs</td>
<td>2.74</td>
<td>High</td>
<td>9</td>
</tr>
<tr>
<td>Above 3 yrs</td>
<td>2.35</td>
<td>Low</td>
<td>12</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>2.74</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td><strong>B. Perceived Benefits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasons for not conceiving within the last three years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You do not want</td>
<td>2.78</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>Your spouse does not want</td>
<td>2.48</td>
<td>Low</td>
<td>5</td>
</tr>
<tr>
<td>You are not healthy</td>
<td>2.43</td>
<td>Low</td>
<td>6</td>
</tr>
<tr>
<td>You do not want to infect the child</td>
<td>2.76</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td>No benefit</td>
<td>1.60</td>
<td>Very low</td>
<td>7</td>
</tr>
<tr>
<td>She lives longer</td>
<td>3.34</td>
<td>Very high</td>
<td>2</td>
</tr>
<tr>
<td>She avoids orphans</td>
<td>3.43</td>
<td>Very high</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>2.71</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data 2011
Mean Range  |   Response Mode  |   Interpretation
---|---|---
3.26-4.00  |   Strongly agree  |   Very high
2.51-3.25  |   Agree  |   High
1.76-2.50  |   Disagree  |   Low
1.00-1.75  |   Strongly disagree  |   Very Low

The findings of the study are consistent with findings of studies by other researchers. The perceived risk of bearing an HIV-infected child rather than a woman HIV status alone was associated with reproductive decision making (Sowell & Misner 1997). Rutenberg and colleagues (2000) found that an overwhelming majority of men and women felt that infected women if they became pregnant the unborn baby would become infected and die because of vertical transmission. These findings are still true since vertical transmission is the second cause of HIV in Uganda. The predominant factors among all women were the fear of transmitting HIV to their child, personal health-related concerns, and desire to have children. These results also varied by age, as women who were diagnosed before age 30 reported they were more strongly influenced by each of these factors than women who received their HIV diagnosis after age 30.

Similar personal characteristics were reported in previous studies (Siegal & Schrimshaw, 2001; Sowell et al., 2002) for women with HIV who had deliberately chosen to become pregnant. Clearly, a woman’s age, as well as her motivation to have children, plays a significant role in subsequent decisions to become pregnant; however, for the women in this study, an HIV diagnosis did not dampen the appeal of motherhood. The opinions of family members, friends, and the media were outweighed by personal desires and concerns for those women who chose to become pregnant. Medical personnel were more influential upon the decision to terminate a pregnancy than the choice to become pregnant.
The findings on perceived benefits are consistent with the findings of the study carried out in Zambia on reproductive decision making in the context of HIV/AIDS in which women advocated for prevention of pregnancy among women as they believed that pregnancy will make AIDS manifest as pregnancy progresses and lead to rapid deterioration of the woman’s health and eventual death (Rutenberg et al., 2000). Regardless of women’s pregnancy experiences or intentions, reproductive decision-making themes included the perceived risk of vertical transmission, which was often overestimated; beliefs about vertical transmission risk reduction strategies; desire for motherhood; stigma; religious values; attitudes of partners and health care providers; and the impact of the mother’s health and longevity on the child.

Most women who did not want children after their diagnosis cited vertical transmission risk as the reason, and most of these women already had children. Those who became pregnant or desired children after their diagnosis seemed more confident in the efficacy of risk reduction strategies and often did not already have children (Kirshenbaum et al., 2004).

**Level of Use of Contraceptive Methods Among Women With HIV**

Table 4 shows the level of use of contraceptives among women with HIV. Majority of the respondents had heard about family planning and considered it very important to be included in HIV care services for women with HIV because both indicators were ranked very high, however the level of use was found to be low because of the various reasons indicated in the table below.

These include the type of contraceptive given in the ART clinic which are not readily available, some respondents fear discussing family planning issues with their spouses, types of contraceptives given...
in the clinic are like female condoms, sterilization, intrauterine devices, and injections are not available, some respondents spouses do not want family planning, aspects which hinder accessibility to family planning services contributed to low levels of use of contraceptives. Lastly lack of counseling sessions on family planning and poor knowledge of the sources of family planning also contributed to low level of use.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Mean</th>
<th>Interpretation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever heard of family planning</td>
<td>3.65</td>
<td>Very high</td>
<td>1</td>
</tr>
<tr>
<td>Used anything or tried in any way to delay or avoid getting pregnant</td>
<td>2.92</td>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td><strong>Method of Family Planning Used</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injectable</td>
<td>2.51</td>
<td>High</td>
<td>13</td>
</tr>
<tr>
<td>Pills</td>
<td>2.23</td>
<td>Low</td>
<td>18</td>
</tr>
<tr>
<td>Norplant</td>
<td>1.83</td>
<td>Low</td>
<td>34</td>
</tr>
<tr>
<td>IUDS</td>
<td>1.81</td>
<td>Low</td>
<td>35</td>
</tr>
<tr>
<td>Barrier methods</td>
<td>2.19</td>
<td>Low</td>
<td>20</td>
</tr>
<tr>
<td>Still sexual active</td>
<td>3.30</td>
<td>Very high</td>
<td>4</td>
</tr>
<tr>
<td><strong>Aspects Which Hinder Accessibility to Family Planning Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious beliefs</td>
<td>2.15</td>
<td>Low</td>
<td>23</td>
</tr>
<tr>
<td>Cultural beliefs</td>
<td>1.96</td>
<td>Low</td>
<td>31</td>
</tr>
<tr>
<td>Myths and misconceptions</td>
<td>2.29</td>
<td>Low</td>
<td>17</td>
</tr>
<tr>
<td>Distance Health centers</td>
<td>1.98</td>
<td>Low</td>
<td>30</td>
</tr>
<tr>
<td>Unaware of family planning services in health units</td>
<td>1.61</td>
<td>Low</td>
<td>36</td>
</tr>
<tr>
<td>Frequent stock out in health centre</td>
<td>2.12</td>
<td>Low</td>
<td>26</td>
</tr>
<tr>
<td><strong>Sources of Family Planning Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government health facility</td>
<td>3.43</td>
<td>Very high</td>
<td>3</td>
</tr>
<tr>
<td>NGO health facility</td>
<td>2.77</td>
<td>High</td>
<td>7</td>
</tr>
<tr>
<td>Drug shop</td>
<td>2.52</td>
<td>High</td>
<td>12</td>
</tr>
<tr>
<td>Private clinic</td>
<td>2.61</td>
<td>High</td>
<td>9</td>
</tr>
<tr>
<td>Do not know</td>
<td>2.18</td>
<td>Low</td>
<td>21</td>
</tr>
<tr>
<td>Receive counseling sessions on family planning</td>
<td>2.16</td>
<td>Low</td>
<td>22</td>
</tr>
<tr>
<td><strong>Availability of Contraceptives in ART Clinic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regularly</td>
<td>2.11</td>
<td>Low</td>
<td>27</td>
</tr>
<tr>
<td>Irregularly</td>
<td>2.49</td>
<td>Low</td>
<td>14</td>
</tr>
<tr>
<td>Not available</td>
<td>2.58</td>
<td>High</td>
<td>10</td>
</tr>
<tr>
<td><strong>Types of Contraceptives Given in ART Clinic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male condoms</td>
<td>3.04</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>Sterilization</td>
<td>2.00</td>
<td>Low</td>
<td>29</td>
</tr>
<tr>
<td>Female condoms</td>
<td>1.75</td>
<td>Very low</td>
<td>37</td>
</tr>
<tr>
<td>IUDs</td>
<td>1.93</td>
<td>Low</td>
<td>32</td>
</tr>
<tr>
<td>Injection</td>
<td>2.14</td>
<td>Low</td>
<td>24</td>
</tr>
<tr>
<td>Pills</td>
<td>2.25</td>
<td>Low</td>
<td>16</td>
</tr>
<tr>
<td>Family planning talked about in the ARV clinic</td>
<td>2.33</td>
<td>Low</td>
<td>15</td>
</tr>
<tr>
<td>Discuss with you partner about importance of family planning</td>
<td>2.66</td>
<td>High</td>
<td>8</td>
</tr>
<tr>
<td>You do not like using family planning</td>
<td>2.14</td>
<td>Low</td>
<td>25</td>
</tr>
<tr>
<td>Fear discussing family planning with your husband</td>
<td>1.90</td>
<td>Low</td>
<td>33</td>
</tr>
<tr>
<td>You do not want to discuss family planning with your husband.</td>
<td>2.08</td>
<td>Low</td>
<td>28</td>
</tr>
<tr>
<td>Your spouse support the use of family planning</td>
<td>2.55</td>
<td>High</td>
<td>11</td>
</tr>
<tr>
<td>You have fears/ concerns about using family planning</td>
<td>2.22</td>
<td>Low</td>
<td>19</td>
</tr>
<tr>
<td>It is important to include family planning in the HIV care services for women with HIV/AIDS</td>
<td>3.48</td>
<td>Very high</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.42</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data 2011
These findings are similar to those studies done in other parts of the world. In East Africa where contraceptive prevalence is low, strong fears persist about the impact of contraceptive methods on women health, regardless of their HIV status (Rutenberg & Baek, 2005). Although the HIV epidemic is growing among women, knowledge of contraception and access to family planning were limited among HIV positive women (Olaitan et al., 1996). Dual function contraceptives that simultaneously prevent HIV transmission as well as unwanted pregnancy might be the most appropriate contraceptive method of HIV positive women (IPPF Med Bills, 2000).

While family planning is an ideal component of most antenatal care and maternal-child health programs within which PMTCT programs are offered, PMTCT sites often miss opportunities to provide HIV positive clients with family planning counseling. The demand for family planning among HIV-positive women varies depending on the extent of communities, openness about HIV/AIDS fertility norms and knowledge of PMTCT programs. In Kenya and Zambia, no differences were observed in use of contraceptives between HIV positive and HIV negative women in the study communities, but HIV positive women had more affirmative attitudes about condoms and use them significantly more frequently than do their HIV negative counterparts (Rutenberg & Baek, 2005).

PMTCT, stakeholders including Uganda endorse preventing unintended pregnancy among HIV positive women as a cornerstone of

<table>
<thead>
<tr>
<th>Mean Range</th>
<th>Interpretation</th>
<th>Response Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.26-4.00</td>
<td>Strongly agree</td>
<td>Very high</td>
</tr>
<tr>
<td>2.51-3.25</td>
<td>Agree</td>
<td>High</td>
</tr>
<tr>
<td>1.76-2.50</td>
<td>Disagree</td>
<td>Low</td>
</tr>
<tr>
<td>1.00-1.75</td>
<td>Strongly disagree</td>
<td>Very Low</td>
</tr>
</tbody>
</table>
PMTCT services. Yet when this strategy is discussed, a tension is evident concerning whether to prioritize public health or reproductive rights. While family planning has been adapted as one of the elements of national PMTCT programmes, the content of services varies considerably (Rutenberg & Baek, 2005).

In Uganda, as in many countries with high rates of HIV infection, rates of sero status disclosure after HIV testing and contraceptive use are low. Consequently, many HIV positive women conceive despite regular advice and counseling. To improve this situation, approaches for involving husbands or partners in VCT and prevention of MTCT interventions should be developed, evaluated, and implemented.

**Significant difference in the level of perceived risk, benefit and level of use of contraceptive methods according to age.**

This objective was to establish whether there are significant difference in the level of perceived risk, benefit and level of use of contraceptive methods according to age of respondents. The researcher tested a null hypothesis that the levels of perceived risk, benefit and use of contraceptive methods do not differ significantly according to age. The Fisher's one way Analysis of Variance (ANOVA) was used to test the null hypothesis and results are indicated below.
Table 5
Significant Difference in the Level of Perceived Risk, Benefits and Level of Contraceptives Use According to Age

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age Group</th>
<th>Mean</th>
<th>F</th>
<th>Sig.</th>
<th>Interpretation</th>
<th>Decision on Ho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Perceived Risk</td>
<td>Below 20 years</td>
<td>2.52</td>
<td>3.414</td>
<td>.018</td>
<td>Significant difference</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>21-30 years</td>
<td>2.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31-40 years</td>
<td>2.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 40 years</td>
<td>2.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Perceived Benefits</td>
<td>Below 20 years</td>
<td>2.51</td>
<td>2.083</td>
<td>.102</td>
<td>No significant difference</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>21-30 years</td>
<td>2.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31-40 years</td>
<td>2.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 40 years</td>
<td>2.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Use of Contraceptives</td>
<td>Below 20 years</td>
<td>2.20</td>
<td>2.566</td>
<td>.055</td>
<td>No significant difference</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>21-30 years</td>
<td>2.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31-40 years</td>
<td>2.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 40 years</td>
<td>2.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source; Primary data 2011

Results in Table 5 indicate a significant difference in the level of perceived according to age (F=3.414, Sig.0.018), hence the null hypothesis was rejected.
There was no significant difference in the level of perceived benefit according to age (F=2.083, Sig.0.102), hence the null hypothesis was accepted. There was no significant difference in the level of use of contraceptive methods according to age (F=2.566, Sig.0.055), hence null hypothesis was accepted.

The issues around contraception choice for an HIV positive woman living in poverty in a resource poor country with inadequate healthcare services and without access to antiretroviral therapy will be very different from those faced by a woman in a developed country receiving highly active antiretroviral therapy (HAART) with a wide
range of contraception methods available to her (Mitchell et al., 2004). There is wide variation in contraception prevalence worldwide ranging from 8% of women aged 15–49 years in western Africa up to 78% in northern Europe. Female sterilization (32%), intrauterine devices (22%), and the oral contraceptive pill (14%) account for more than two thirds of all contraceptive practice worldwide. In less developed countries 70% of contraception users rely on female sterilization and intrauterine devices in part because they are advocated by healthcare services as a result of cost effectiveness in terms of pregnancy prevention and service provision (Mitchell 2004).

Contraception use and compliance is related to the range of methods available, patient choice, prevalent health and religious beliefs, perceptions of method effectiveness, and side effects (for example, women may have less tolerance for heavy and prolonged vaginal bleeding than amenorrhea). Correct use of most user dependent methods requires a basic knowledge of reproduction and literacy skills to follow written instructions. In many countries women are unable to make autonomous decisions about their sexual and reproductive health because of political instability within society, lack of economic independence, and prevailing cultural or religious attitudes to women’s rights.

In studies of women with HIV infection approximately 70% are sexually active, effective contraception use is variable, and unplanned pregnancy frequently reported. In a cohort of Irish HIV positive women only 57% of the sexually active women used a reliable method of contraception. The French SEROCO study on the impact of HIV diagnosis on sexual and contraceptive behavior found that of the sexually active women, 20% were using no contraception, 24% became pregnant, and 63% of conceptions ended in abortion. In the African DITRAME Project 39% of women with HIV infection used contraceptives; factors significantly related to contraceptive use were
marital status and level of education. The incidence of further pregnancy was 16.5 per 100 women years at risk; 50% of these pregnancies were unplanned and one third terminated by abortion, significant determinants of pregnancy were death of the previous child, cessation of breast feeding, and cessation of postpartum abstinence.

Lactation amenorrhea is an important and effective means of child spacing in developing countries. For HIV positive women breast-feeding increases the risk of HIV transmission to her infant, which has to be balanced against the cost of artificial feeds and risk of death from gastroenteritis.

The World Health Organization estimates that half a million women die annually from complications of pregnancy, childbearing, or abortion; 90% of these deaths occur in sub-Saharan Africa and Asia where there is significant unmet need for contraception provision. The risks of unplanned pregnancy for women with HIV infection are compounded by the risk of mother to child HIV transmission, which occurs in 30–40% of pregnancies when interventions to reduce vertical transmission, particularly antiretroviral therapy, are not available. In several areas of southern Africa, approximately 30% of women attending antenatal clinics are infected with HIV-1.

Across Africa around 1900 children acquire HIV 1 infection from their mother every day and three million children under 15 years are living with HIV. In contrast, only 720 pregnancies in HIV positive women were confirmed in the United Kingdom during 2002 and very few infants born to previously diagnosed women were infected (<2%).
CHAPTER FIVE
FINDINGS, CONCLUSIONS, RECOMMENDATIONS

FINDINGS
The major findings of the study are summarized as follows:

Socio-Demographic Factors Associated With Conception Among HIV+Women

Half of the total number of respondents who conceived belonged to early adulthood (49.52%); nearly 50% attained education up to primary level; nearly 50% of the respondents were Catholics; half of the number (50.64%) of respondents were peasants; most of the respondents were married (42.05%); nearly half (46.96%) of the respondents were in marriage for more than three years.

Economic Factors Associated With Conception Among HIV+Women

Sixty percent of the respondents were earning less than 100000/=Uganda shillings a month; 40% had 3-5 biological children; 52% had 1-3 biological children alive; 40% of the respondents had 1-3 dependents; 80% had one sexual partner; 45% were married at the time of HIV diagnosis; 37% had been living with HIV for 1-2 years; 60% were aware of the partner’s status; 51% had partners who were positive; 13% were in discordance; 68% of the respondents’ partners knew their wives’ status.

Socio-cultural Factors Associated With Conception Among HIV+Women

Twenty two percent of the respondents wanted more children; 68.3% were drinking alcohol.
Level of Perception of Risks Associated With Pregnancy Among Women With HIV

The level of perception of risks was found to be high (75%). Leaving orphans was the highest feared risk while no danger to both baby and mother was lowest perceived risk.

Level of perceived benefit of avoiding pregnancy among women with HIV

The level of perceived benefit was found to be high. Living longer and avoiding orphans were the most ranked benefits while no benefit was the lowest.

Level of Use of Contraceptive Methods Among Women With HIV

The level of use of contraceptives was found to be below (30%). The following options were ranked very high; ever heard of family planning, still sexually active, government facilities offering family planning services and important to include family planning in HIV care services while the availability of female condoms was rated very low.

Significant Difference In The Level of Perceived Risk, Benefits And Level of Use of Contraceptive Methods According To Age

There was a significant difference in the level of perceived risk according to age.

There was no significant difference in the level of perceived benefit and use of contraceptive methods according to age.

CONCLUSIONS

Based on the findings of the study the following conclusions are drawn:

1. The null hypothesis of no significant difference in the level of perceived risk according to age is rejected.
2. The null hypothesis of no significant difference in the level of perceived benefits according to age is accepted.

3. The null hypothesis of no significant difference in the level of use of contraceptive methods according to age is accepted.

4. According to the systems theory used in this study, the contingent variable was conception and the prevailing condition was HIV therefore the factors found in this study that are associated with conception in HIV +women were age, level of education, occupation and disclosure of sero status to partner, alcoholism, desire for more children, sex of another child, income per month, number of sexual partners and low level of use of contraceptive methods. These are the factors that influence reproductive decisions of HIV +women. The findings of the study have validated the existing information in the context of systems theory.

5. New information generated from the findings: factors associated with conception among HIV positive women are alcoholism, low education, occupation, income per month, religion and high rate of disclosure.

RECOMMENDATIONS

The following are recommended based on the findings of the study:

1. Government should set up programmes, policies and efforts towards HIV prevention, which should be integrated into other social issues such as empowerment of women, creating job opportunities, gender equality, strengthening educational opportunities like Universal primary and Secondary education especially in rural areas.

2. Government and stakeholders involved in provision of HIV/AIDS services should train and provide People Living With HIV/AIDS
with income generating activities and entrepreneurship skills in order to empower them economically.

3. Government should set up policies and programmes to address the influence of alcohol on risky sexual behaviors especially on HIV transmission, unsafe sex and sexual violence.

4. Government and all Health institutions should integrate Family planning services into (or with) HIV/AIDS services and vice versa.

5. Government and stakeholders should improve the provision of family planning services, personnel involved in service delivery should be given adequate, and up-to date information on family planning in relation to reproductive choices of HIV + positive people.

6. Health authorities should work closely with men within communities and initiate open discussions on reproductive issues of HIV positive couples because male involvement in PMTCT services has been low (it has always been women centred).

7. Government, Healthworkers, researchers and other stakeholders addressing pregnancy desires of HIV+ women must also include men and their fertility desires, as they have an impact on women’s desire and decisions.

8. The following studies are recommended for the future researchers:

8.1 Sexual Behavior of PLWHA’s in Reproductive Age Group

8.2 Practices Related To Use of Family Planning and Contraception Among HIV +Couples

8.3 Factors Associated With Conception Among HIV Positive Couples
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OFFICE OF THE ASSOCIATE DEAN, SOCIAL SCIENCE  
SCHOOL OF POSTGRADUATE STUDIES AND RESEARCH (SPGSR)

June 27, 2011

Dear Sir/Madam,

RE: REQUEST FOR ZZIWA MARTINLUTHER MPP/100017/81/DU  
TO CONDUCT RESEARCH IN YOUR ORGANIZATION

The above mentioned is a bonafide student of Kampala International University  
pursuing a Master of Arts in Project Planning and Management.

He is currently conducting a field research of which the title is “Factors and  
Prevalence Associated with Conception among HIV Positive Women in  
Mubende District, Uganda.”

Your organization has been identified as a valuable source of information pertaining to  
his research project. The purpose of this letter is to request you to avail him with the  
pertinent information he may need.

Any information shared with him from your organization shall be treated with utmost  
confidentiality.

Any assistance rendered to him will be highly appreciated.

Yours truly,

Dr. Roseann Mwaniki
Associate Dean, Social Sciences, (SPGSR)
APPENDIX IB

TRANSMITTAL LETTER B

Dear Sir/Madam,
Greetings!

I am a student of Masters of Arts in Project Planning and Management at Kampala International University. A thesis is one of the requirements for the award of this postgraduate course.

My study is about **Factors Associated With Conception Among HIV Positive Women in Mubende District**. There are no risks involved in this study, as we are not discussing any identity of any individual information.

Your participation is voluntary and you can withdraw at any time you wish not to continue with the interview. When you withdraw you will not be denied any service.

The information obtained from you will be for academic purposes only and shall be treated with utmost confidentiality.

Thank you very much in advance.
God bless you.

Yours faithfully,

Zziwa Martin Luther, MBCHB
APPENDIX II

CLEARANCE FROM ETHICS COMMITTEE

Date________________

Candidate’s Data

Name____________________________________
Reg.# ______________________________________
Course _____________________________________
Title of Study ______________________________

Ethical Review Checklist

The study reviewed considered the following:

___ Physical Safety of Human Subjects
___ Psychological Safety
___ Emotional Security
___ Privacy
___ Written Request for Author of Standardized Instrument
___ Coding of Questionnaires/Anonymity/Confidentiality
___ Permission to Conduct the Study
___ Informed Consent
___ Citations/Authors Recognized

Results of Ethical Review

___ Approved
___ Conditional (to provide the Ethics Committee with corrections)
___ Disapproved/ Resubmit Proposal

Ethics Committee (Name and Signature)

Chairperson ________________________________
Members _________________________________
APPENDIX III

INFORMED CONSENT

I am giving my consent to be part of the research study of Dr. Zziwa Martinluther on Factors Associated With Conception Among HIV Positive Women in Mubende District.

I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation anytime.

I have been informed that the research is voluntary and that the results will be given to me if I ask for it.

Initials:____________________________
Date_____________________________
APPENDIX IVA

FACE SHEET: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Questionnaire Number _____

Direction: Please tick the option which refers to you.

1. Age of respondent
   ___ Below 20 years
   ___ 21-30 years
   ___ 31-40 years
   ___ Above 40 years

2. Education level
   ___ None
   ___ Primary
   ___ Secondary
   ___ Tertiary

3. Religion
   ___ Protestant
   ___ Catholic
   ___ Muslim
   ___ Others specify

4. Occupation
   ___ Business person
   ___ Civil servant
   ___ Not employed
   ___ Peasant

5. Marital Status
   ___ Married
   ___ Cohabitating
   ___ Divorced
6. Number of years in marriage or with the partner.

- Single
- Less than 1 year
- Above 1yr to 2yrs
- Above 2yrs to 3 yrs
- More than 3 years
APPENDIX IVB
QUESTIONNAIRE TO DETERMINE ECONOMIC AND SOCIO-
CULTURAL FACTORS ASSOCIATED WITH CONCEPTION AMONG
HIV+ MOTHERS

**Direction:** Please tick the option which refers to you.

**A. Economic Factors**

1. Income per month
   - less than 100,000/= 
   - 100,000/= - 200,000/= 
   - 200,000/= - 500,000/= 
   - 500,000/= - 1,000,000/= 
   - above 1 Million

2. Number of biological children
   - none 
   - 1-2 
   - 3-5 
   - above 5

3. Number of biological children still alive
   - none 
   - 1-3 
   - above 4

4. Total number of dependants
   - none 
   - 1-3 
   - 4-6 
   - above 6

5. Number of sexual partners
   - one 
   - two 
   - More than two

6. Marital status at the diagnosis of HIV
   - married 
   - single
7. How long have you been HIV Positive?
   ___ less than one year
   ___ 1-2 years
   ___ 2-3 years
   ___ above 3 years

8. Are you aware of your partner’s/spouse HIV status.
   ___ yes
   ___ no

9. Spouses/partners HIV status
   ___ positive
   ___ negative
   ___ not known

10. Is your partner/spouse aware of HIV status?
    ___ yes
    ___ no

B. Socio-cultural Factors

11. Reason for your intentions to conceive
    ___ pressure from relatives
    ___ pressure from in laws or spouse
    ___ stigma of childlessness
    ___ still health
    ___ wanted a boy
    ___ wanted a girl
    ___ wanted to deliver for the new partner.
    ___ still in reproductive age group
    ___ to replace those who died
    ___ wanted more children

12. Social habits
    ___ drinks alcohol
    ___ smokes
    ___ drinks alcohol and smokes
    ___ others (specify) _____________________________
APPENDIX IVC
QUESTIONNAIRE TO DETERMINE THE LEVEL OF PERCEIVED RISKS ASSOCIATED WITH PREGNANCY WITH HIV AND PERCEIVED BENEFITS OF AVOIDING PREGNANCY IN HIV+ WOMEN

Direction: On the space provided before each option, indicate your best choice by using the rating system below:

<table>
<thead>
<tr>
<th>Response Mode</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>(4)</td>
<td>You agree with no doubt at all</td>
</tr>
<tr>
<td>Agree</td>
<td>(3)</td>
<td>You agree with some doubt</td>
</tr>
<tr>
<td>Disagree</td>
<td>(2)</td>
<td>You disagree with some doubt</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>(1)</td>
<td>You disagree with no doubt at all</td>
</tr>
</tbody>
</table>

A. Perceived Risks

1. Following your testing positive for HIV you had intentions/desire of getting a child.

2. It was your intention to conceive within the last 3 years.

3. The dangers for a woman with HIV to conceive are as follows:
   - no danger
   - she dies very fast
   - she can leave orphans to suffer
   - she becomes very sick
   - others (specify) ________________________

4. The risks to a baby when a woman with HIV conceives are as follows:
   - no danger
   - baby gets infected with HIV
   - baby fall sick all the time
   - others (specify) ________________________

5. You had been enrolled for the PMTCT programme for any of your conceptions.

6. You are on ARVs.

7. If you are on ARVs, you been using them for
   - less than one year
   - 1-2 yrs
B. Perceived Benefits

8. Your reasons for not conceiving within the last 3 years
   __ you do not want
   __ your spouse does not want
   __ you are not healthy
   __ you do not want to infect the child
   __ others (specify)

9. Some of the benefits of a woman with HIV not to conceive are as follows:
   __ no benefit
   __ she lives longer
   __ she avoids orphans
   __ others (specify)
APPENDIX IVD
QUESTIONNAIRE TO DETERMINE THE LEVEL OF USE OF
CONTRACEPTIVE METHODS AMONG WOMEN WITH HIV

Direction: On the space provided before each option, indicate your best choice with reference to your level of use of contraceptive methods.

Please be guided with the rating system below:

<table>
<thead>
<tr>
<th>Response Mode</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>(4)</td>
<td>You agree with no doubt at all</td>
</tr>
<tr>
<td>Agree</td>
<td>(3)</td>
<td>You agree with some doubt</td>
</tr>
<tr>
<td>Disagree</td>
<td>(2)</td>
<td>You disagree with some doubt</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>(1)</td>
<td>You disagree with no doubt at all</td>
</tr>
</tbody>
</table>

1. You have ever heard of family planning.
2. You have used anything or tried in any way to delay or avoid getting pregnant
3. The method of family planning you are using is:
   _injectable_ _others (specify)_____________
   _pills_
   _norplant_
   _IUDS_
   _barrier methods_
4. You are still sexually active
5. The following aspects hinder you from accessing family planning services:
   _religion beliefs_
   _cultural beliefs_
   _myths and misconceptions_
   _distance from Health centers_
   _unaware of family planning services in health units_
   _Frequent stock outs in health centre_
   _others (specify)__________________
6. You can easily/readily obtain family planning services from:
   _government health facility_
   _NGO health facility_
   _drug shop_
7. You receive counseling sessions on family planning use during your care at the ART clinic.

8. The contraceptives are available to you in the ART clinic
   - regularly
   - irregularly
   - not available

9. The types of contraceptives given to you from the ART clinic:
   - male condoms
   - sterilization
   - female condoms
   - IUDs
   - Injection
   - Pills
   - others (specify)

10. You hear family planning talked about in the ART clinic.

11. You discuss with your husband/spouse/sexual partner about the importance of using family planning.

12. You do not like using family planning.

13. You fear discussing family planning with your husband.

14. You do not want to discuss family planning with your husband.

15. Your spouse support the use of family planning?

16. You have fears/concerns about using family planning.

17. You think it is important to include family planning in the HIV care services for women with HIV/AIDS.
RESEARCHER’S CURRICULUM VITAE

Personal Profile

NAME
DR. ZIWA MARTINLUTHER

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PROFESSION
MEDICAL DOCTOR

NATIONALITY
UGANDAN

Educational Background

2008-2011
Pursuing Masters Degree in Project Planning and Management at Kampala International University.

2003-2004
Postgraduate Training in Health Services Management at Nkozi University

1991-1999
Bachelors of Medicine & Bachelor of Surgery (MBCHB) at Makerere Medical School

1989-1991
St Mary’s College Kisubi

1985-1988
St Mary’s College Kisubi

1978-1984
Namilyango Junior Boys

Work Experience

2011-June 2011
Head of HIV/AIDS Clinic
Mubende Regional Referral Hospital.

2007-2010
Head of Mubende RCE

2004-2006
Assistant District Directors of Health Services in charge of Buyanja Health Sub District- Kibaale District.

1999-2002
Assistant District Director of Health Services in charge of Bugangaizi Health Sub-District.