SEXUAL BEHAVIOUR AMONG PEOPLE LIVING WITH HIV ON ANTIRETROVIRAL THERAPY AT MPIGI HEALTH CENTER 1V, CENTRAL UGANDA

BY

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DECLARATION

I declare that this dissertation is my original work and has never been submitted to any university or institution for the award of any degree.

Signed ……

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DEDICATION

This work is dedicated to my parents Mr& Mrs Kiwuwa who educated me and gave me the light of the world. I sencerly thank them for their support through out my studies. I also dedicate this work to my children , Asher and Ashley .

May God reward you abundantly!

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ABSTRACT

This paper examined the sexual behaviour of people living with HIV who are on Antiretroviral Treatment. ART treatment improves the health status and life expectancy of people with HIV and this may gradually change their sexual behaviour. ART enables people living with HIV to regain their sexual viability.

This was a cross sectional descriptive study that aimed at examining the sexual behaviour among people infected with HIV on antiretroviral therapy. The study was composed of 358 respondents of whom 60% were females. The methods used during data collection included the structured questionnaires and focus group discussions. Data was analysed at three different levels i.e. univariate, bivariate using Pierson Chi-square and at the multivariate level, the multinomial logistic model was fitted.

The study revealed that 34.6% of the respondents were sexually active, 58% disclosed their status to their partners, and 52% engaged in sexual activity with partners whose status they knew. The findings also showed that 35% of the respondents engaged in sexual activity with HIV positive partners while 17% were discordant couples. Multiple partnering (48%) was highly observed amongst the married, Unfaithfulness and non-condom use were the risky sexual behaviours identified.

It is important for programme implementers to design effective programmes that will address the risky sexual behaviours observed amongst the PHA s. Such programmes if HIV transmission is to be reduced in Uganda. Similarly there was a growing number of PHA s that engaged in sexual activity with HIV negative people, it is therefore important to strengthen the counselling and adherence service provided to the PHA s as well as giving information about HIV status disclosure to the PHAs.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral therapy
ARVs	Antiretroviral drugs
CDC	Centres for Disease Control and Prevention
HIV	Human Immunodeficiency Virus
JCRC	Joint Clinical Research Centre
MOH	Ministry of Health
NGO	Non-Governmental Organization
PHAs	People Living with HIV/AIDS

CHAPTER ONE

INTRODUCTION

1.1 Background

The emergency of highly active Antiretroviral Therapies (ART) in the course of 1996 is one of the most radical steps in the treatment of AIDS. Antiretroviral treatment has greatly improved the health status and life expectancy of people with AIDS. Many HIV positive people on ART are living longer and are healthier. ART has changed the capabilities that would be lost due to the burden of illness such as social and economic viability and sexual activity (Ayiga, 2007, Duggan, *et al.,* 2005). Investigators have also established that when PHAs are on ART they increasingly become sexually active and some of them engage in risky behaviour (Stolte *et al.,* 2004). It has also been established that PHAs on ART practice unsafe sexual behaviour patterns such as not using condoms and having multiple partners (Ostrow, *et al,* 2002 and Crepaz, 2004).

In Uganda, the AIDS epidemic was first reported two decades ago. Sub-national longitudinal studies and indirect estimates indicate a rising rate of new infections with HIV incidence ranging from 0.2-2.0% in different regions of the country. The annual incidence reached 132,500 new cases in 2005. This includes 25,000 mother-to-child transmissions, (UAC, 2005-2011). The most important source of new infections continues to be sexual transmission, which accounts for 76%. HIV transmission is currently highest within marital sex (42%), with commercial sex workers (21%) and from casual sex (14%), (MOH, 2005).

Although efforts have been made to have about 42% of those infected with HIV on ART, the number continues to grow each year. The number of people living with HIV/AIDS over the past two years has increased and the world wide total now stands at nearly 40 million, (UNAIDS, 2006).

It was estimated that there were 270,000 PHAs eligible for ART in 2007, and the number is projected to reach 332,000 in 2012.. Ministry of Health has improved access to ART medication in Uganda. by accrediting 268 health facilities for ART therapy and apparaently 259 facilities are providing ART of which 136 are public facilities, 47 are private for profit Hospitals/Medical centres and seven are centres of excellence/research based facilities (MOH, 2007)

Studies have also established that when PHAs are on ART, they have improved quality of life and hence are sexually active. It has also been established that there are lower levels of risky sexual behaviour among people living with HIV/AIDS in Uganda (Ayiga,2007, Bateganya *et al.,* 2006, Bunnell *et al.,* 2006, and Bunnell *et al.,* 2006).

This study examined the sexual behaviour of PHAs on ART at Mpigi Health Centre IV. The health centre is government funded and is located in Mpigi district, Mpigi town Council. The patients access their medication from Mpigi Health Center and through the Joint Clinical Research Centre whose clinic is located at the health Centre.

1.2 Problem Statement

The advent of highly active antiretroviral therapies has helped to improve the health status and life expectancy of people living with HIV. Improvements in health and life expectancy of HIV-infected people may lead to a belief that HIV is no longer a serious and deadly disease. ART significantly reduces patients' viral loads, often to undetectable levels, which may lead to the perception that they are no longer infectious. In addition, ART significantly improves physical health and quality of life, which may enable or encourage individuals to resume sexual activity, including unsafe sex.

Studies have established that when PHAs' adhere to ART, there is an improvement in their quality of life and a decrease in depression. The improved quality of life may lead to a significant increase in sexual activity and reproductive intentions for both men and women (Ayiga, 2007), (Bunnell, *et al.,* 2006), (Bateganya, *et al.,* 2006), (Sarna, 2005),

Although PHAs are given knowledge about safer sexual behaviour during the ART clinic sessions, there is growing evidence that suggests that people on ART are increasingly becoming sexually active and many of them are involved with partners who are HIV negative, (Aloisi *et al,* 2000). Some of these people practice unsafe sexual behaviour patterns such as not using condoms and having multiple sexual partners, (Ostrow, *et al.,* 1999) and (Crepaz, 2004).

1.3.1 General Objective

The study examined the sexual behaviour among HIV positive persons on antiretroviral therapy.

1.3 Specific Objectives

1. To establish the proportion of PHAs on ART who are sexually active.
2. To establish the patterns of sexual behaviour of PHAs on ART.
3. To establish the type of sexual partners of PHAs on ART.

1.4 Hypothesis

1. The number of people living with HIV who are sexually active is higher than the number of people who are not HIV positive.
2. People living with HIV do not engage in multiple relationships

1.4 Study Justification

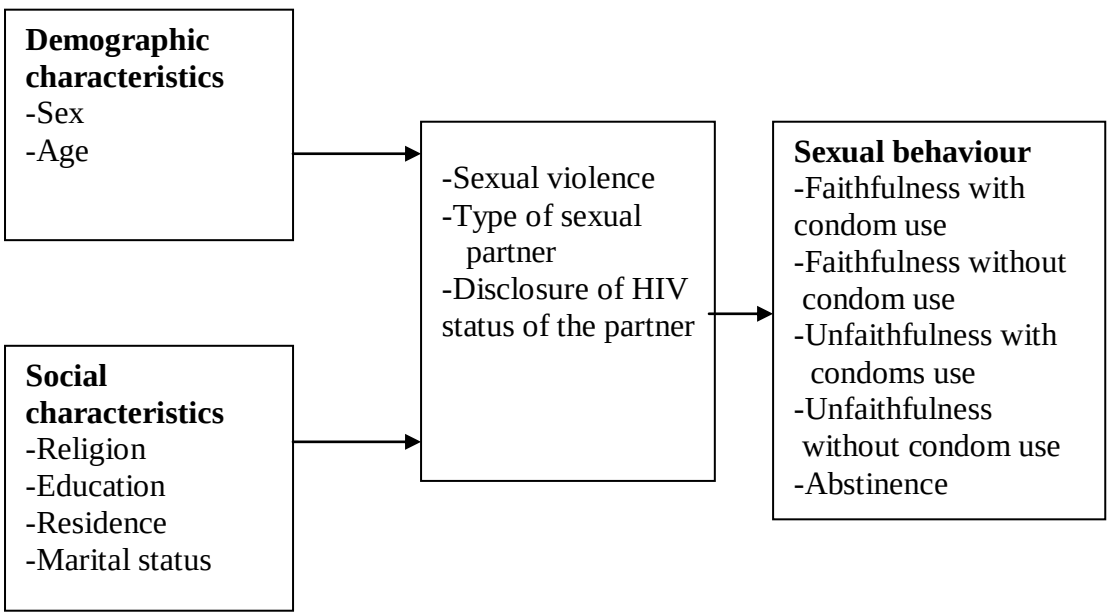
The study helped identifying sexual behaviours among people living with HIV/AIDS on antiretroviral therapy so as to integrate feasible and effective interventions to promote safer sex measures. The study also helped to identifying ways of preventing HIV transmissions; hence reduce the spread of HIV.

With the increased availability of ART, HIV positive individuals are living healthier lives and continuing or resuming sexual activity. Optimisms however related to ART success in slowing diseases progression reducing viral load, and improving health status may lead to more sexual practices that are responsible for the increase in transmission of HIV, (Giradi, *et al.*,2002), (Wilson, *et al.,* 2002), Quinn, *et al.*,2001). The findings helped to make recommendations that could be used to set up programmes on HIV prevention hence contributing to a reduction of incidence in Uganda.

1.6 The Conceptual Frame Work

The conceptual framework represented characteristics to consider when studying risky sexual behaviour among HIV positive persons taking ARVS. Each component was conceived as making an independent contribution to predicting sexual behaviour among PHAs on ART. It suggested an explanatory process or causal ordering where the predisposing factors might be exogenous and some enabling resources necessary but not sufficient conditions for sexual behaviour.

Figure 1: A conceptual framework of the characteristics of risky sexual behaviour among People living with HIV on ART



The conceptual framework illustrates the relationship between different variables and how they impact on sexual behaviour. The dependent variable is sexual behaviour. The background factors include religion, sex, marital status, residence, religion, employment and education.

The proximate factors might influence ones intentions to engage in risky sexual behaviour. The

reasons as to why PHAs engage in risky sexual behaviour, pressure from the partner, poor status disclosure and use of alcohol.

1.6.0 Description of variables

1.6.1 Violence from sexual partner the study examined whether the

Respondents were asked if their partners ever forced them into sexual activity during the reference time.

1.6.2 Type of Sexual Partner

The respondents were asked who they engaged with during sexual activity in the reference time. Partners who engaged in sexual activity with permanent people they were officially

married to were categorised as husband and wife, partners who were not officially married were in sexual relationship for more than one month during the reference time were considered boy frien and girl friend. Partners who engaged in sexual activity with partners they were in relationship with for less a day were considered casual partners.

1.6.3 Sexual Behaviour

The variable was measured by asking the respondents whether they were sexually active or not. Sexually active respondents were asked if they used condoms during sexual activity or not. They were also asked for the type of sexual partners that they engaged with during sexual activity. PHAs that had one sexual partner were considered faithful and those with multiple partners were considered unfaithful. The PHAs were also asked if they used condoms during the sexual activity

1.7 Layout of the Dissertation

Here after, chapter two provides a review of the existing literature on the sexual behaviour of the PHA s on ART (15-49). Chapter three provide the methodology that was used in the study, followed by chapter four and five presenting the findings and a discussion of the findings of the study. Chapter six summarizes the research findings, gives a conclusion and provides recommendations based on the study findings

CHAPTER TWO

LITERATURE REVIEW

2.1 Demographic Characteristics and Sexual Behaviour of PHAs on ART

The findings from a study that examined sexual behaviour of PHAs on ART in India, established that 61 percent of respondents reported having had sex during the reference period. Marital status was also strongly associated with sexual behaviour, (Avina, *et al., 2006*).

2.2 Education and Sexual Behaviour

An individual level analysis suggests that educated individuals should be at greater risk of infection at the early stages of an HIV epidemic but should be better equipped to change their sexual behaviour when faced with the facts of HIV transmission. There are a number of aspects of the sexual behaviour that puts the educated people at a greater risk of HIV infection (Desai *et al*,).

More educated individuals change partners more rapidly in part because they are mobile and because they have greater control over their own sexual behaviour. The higher socio-economic status of more educated men gives them a greater disposable income, increase leisure time, increased ability to travel and to use commercial ex partners In addition more educated women start having sex later but delayed marriage to an even great extent. This leads them to being single and sexually active for longer period of time and thus to them having greater number of sexual partners, (Deasai *et al.*, 2006).

Choice of contraceptive may also be influenced by education. Although educated people may be more likely to use contraception overall, they are also more likely to choose methods, such as the contraceptive pill which do not protect against sexually transmitted diseases such as HIV. Taken together, and in the absence of any response to an epidemic, these factors increase the vulnerability of more educated individuals to HIV infection in the early stages of an

epidemic.

Evidence and theory about HIV/AIDS suggests that more educated people are more likely to be exposed to formal schooling and also through the media, (Gregson, *et al.*, 1998). For example a study in 32 countries found that literate women were three times more likely than illiterate women to know that healthy looking person can have HIV and four times more likely to know the main ways to avoid getting infected with HIV.

Studies have proved that education is associated with increased self efficacy in general, (Bandura, 1977) and in context of the HIV epidemic, , more educated people are more likely to believe they have control over their own behaviour, rather than another individual or more fate and they are more likely to have actual control over their own behaviour. For example, educated women are more able to negotiate safe sex with a partner, (Desai *et al.*, 2006).This analysis suggests that education should lead to a greater adoption of safe sex sexual behaviour in response to the HIV epidemic.

Data from Demographic and Health Surveys (DHS) in 11 countries showed that women with primary school education were more likely than those with no education to report using a condom at last sex. In nine of these countries, secondary education was associated with further increased likelihood of using a condom at last sex. Another study in Zimbabwe, (Gregson, *et al.*, 2001) found that women with secondary education were less likely report having had unprotected casual sex. A study in the four African cities of Cotounou in Benin, Ndola in zambia, Younde in Cameroon, and Kisumu in Kenya found that education led to less risky sexual behaviour. Condom use was more common amongst more educated individuals in all four cities, (Gregson, *et al., (*2001).

Exchange for money for sex was less likely amongst educated women in all four cities and amongst more educated men in Younde. Non marital sex without a condom was less prevalent

among more educated women in all four cities and among more educated men in Cotonou and Kisumu. In Younde, more educated men and women were less likely to have sex with a casual partner on the day of meeting, and in Ndola, for both men and women; not knowing a partner's age was common amongst those with little schooling, (Gregson *et al., (*2001).

Studies have also proved that other behaviours that reduce HIV infection are also more common among the educated. For example, more educated people are more likely to seek treatment for other sexually transmitted diseases which would otherwise increase their chances of becoming infected with HIV, (Desai *et al.,* 2006). Over all, the evidence suggests that more educated people are at greater risk of HIV infection in the early stages of an epidemic but tend to adopt less risky sexual behaviours in response to the epidemic.

2.3 Sexual Behaviour and Condom Use

The spread of HIV and other sexually transmitted diseases has brought about an increase in awareness and use of condoms. Condom use is an important tool in the fight to curtail the spread of HIV/AIDS. Although truly effective protection would require condom use at every sexual encounter, the most important sexual encounters to cover are those considered to be higher risk, (Ezeh *et al.,* 1996, MOH, 2005)

Since HIV in Africa is spread primarily through unprotected sex, safe sex practices such as condom use can reduce HIV spread significantly. Nevertheless, because sexual behaviour involves complex dynamics, condom use is not an easy option for many people in Africa despite years of condom distribution intervention, (Ezeh *et al.,* 1996).

In Lomé, Togo, Qualitative interviews were conducted with 151 people living with HIV/AIDS, recruited from 3 HIV/AIDS centres. The results of this in-depth study suggested that although people living with HIV/AIDS might be aware of the risk of infecting their sexual partners, they deliberately ignore the risk because other considerations, such as wanting a

baby, take precedence. Consequently, condom access is inadequate to change risky sexual behaviour that spreads HIV, (Gregson *et al.,* 2001).

In a study conducted amongst PHAs on ART in India, the findings established that, overall condom use with a regular partner was high. Although 96 percent of respondents with an HIV-negative regular partner reported using a condom at last sexual contact, condom use with a partner of unknown status was lower (87 percent). The percentage who reported consistent condom use with a regular partner was less than the percentage who reported condom use at last sexual contact; a fifth did not use condoms consistently, (Avina, et al.,2006)

In a study done in Uganda, on resistance to behavioural change in the face of HIV in Africa revealed that there have been changes in sexual practices due to HIV/AIDS, there was an increase in the use of preventive measures like condom, abstinence and sticking to regular partners, (Ntozi, *et al., 2003*). However there were constraints to condom use and those included forced sex, anticipation of higher payments for sexual services and clients dislikes for condoms.

Similarly, findings from a study conducted in Uganda, (MOH, 2005) have established that having a regular partner is one of the reasons for non use of condoms. The only positive change by high risk group in the light of the epidemic is random use with casual partners. Many people still have multiple partners.

In a study done in Miami USA in 2004, study participants exposed before 1995 who practiced unprotected sex with HIV positive partners were six times more than those diagnosed after 1995 and 43% had multiple HIV positive and negative partners with only 7% using condoms consistently. Findings further revealed that the men with on HAART who

practiced unprotected anal sex were two times more than those not on HAART. Unprotected sex was also associated with receipt of HAART in another study among HIV infected women after initiation of HAART in New York, (Wilson *et al.*, 2004).

Studies conducted by (Bateganya, *et al.*, 2005),(Bunnell, 2006), (Moati, 2003) showed that Condom use was significantly higher among ART patients compared to non-ART patients in both cross-sectional studies.

The spread of HIV and other sexually transmitted diseases has also brought an increase in awareness and use of condoms. For example, in Kenya, Tanzania, and Zimbabwe where HIV and other STDs are widespread, DHS results show that virtually all men have heard of AIDS and engaging in sexual activity can transmit it. The surveys further reveal that many people know that using condoms is a means used to protect against HIV infection. In Zimbabwe for example, 57 percent of the men cited using condoms as a way to avoid contracting HIV, in Tanzania, 55 percent expressed the same view. In Kenya however, only 36 percent of the men believe that people can protect themselves against HIV infection, (Crepaz, *et al.*, 2004).

2.4 Sexual Behaviour and Types of Partners

Findings have established that patients on ART were more likely to report that the last sexual encounter was with a main partner compared to non-ART patient, (Moatti, 2003) In another study however, it has been established that there is no difference in the unadjusted percent of ART and non- ART patients reporting multiple sexual partners in the last six months, (Bateganya, 2004).

In another study, (Bunnell, et al., 2006) found that six months after initiating ART, the number of unprotected sex acts with a partner of known negative or unknown HIV status declined by 70%. Men experienced a 75% reduction and women experienced a 58% reduction. . Over 85% of unprotected sex acts with a negative or unknown partner occurred within

married couples. The estimated risk of HIV transmission to partners of negative or unknown status reduced from 45.7 per 1000 person-years at baseline to 0.9 per 1000 person years at follow-up, representing a 98% decrease.

Findings have also established that ART patients were more likely to report that the last sexual encounter was with a main partner compared to non-ART patients, (Moati et.al, 2003) (Bateganya *et al.,* 2004) has however reported no difference in the unadjusted percent of ART and non-ART patients reporting multiple sexual partners in the last 6 months.

2.5 Sexual Behaviour amongst People Living with HIV

In a comparative study done to gain an insight on whether being treated with HAART affects sexual risk behaviour of people living with HIV, it was established that generally more than half of the respondents had been sexually active over the past six months and patients on HAART were less likely to report sex with a casual partner compared to those on prophylactic therapy. Within regular relationships, patients on HAART reported greater condom use whereas patients receiving prophylactic therapy were four times more likely to have had unprotected sex with a regular partner compared to patients receiving HAART,,(Sarna et a*l.,* 2005),

A study done in Califonia Los Angeles among 227 infected patients attending an urban HIV continuity of care clinic revealed that infected people having risky sex with uninfected people account for most HIV transmission. The studies done in the US and in Africa, studies show that most infected people engaging in risky sex are unaware of their infection status, and when their infection is diagnosed, they usually take steps to protect the others with whom they are having contact, (Kirlmarx *et al.,* 1998).

Studies of men and women who have received their HIV sero positive antibody results show that roughly one in three people continue to practice sexual behaviours that put their partners

and themselves at risk for HIV and other sexually transmitted infections, (Hankins *et al.,*1997),.

Studies that were done in Uganda and Côte d'Ivoire that compared patients who had received ART to those who had not, found that approximately half of the participants reported practicing sexual abstinence. In the two cross-sectional studies, the high rates of sexual abstinence were reported for all HIV-infected patients in the previous six months, regardless of ART status. In the before/after study, the percentage of ART patients who were sexually abstinent in the previous three months did not change from baseline to follow-up. Frequency of sexual intercourse was not different between ART and non-ART patients in the one cross-sectional study that measured it. It also did not change from baseline to follow-up in the before/after study, (Bateganya *et al.,* 2005) (Bunnell et al., 2006), (Moatti *et al.,* 2003).

More to this, recent studies show that a significant number of HIV positive individuals continue to engage in unsafe sexual practices. When investigations were initiated to explore the correlates of high sex among two samples of HIV positive adults recruited from outpatient medical care facilities in Las vegas, Naveda. The study showed that 34% of the survey group and 28% of the interview group reported at least 1 occasion of unprotected anal sex or vaginal intercourse in the previous six months. Consistent with other research there were multiple correlates in high risk sex including multiple sexual partners, negative attitudes about condoms lack of risk avoidance strategies and recreational and intravenous drug use prior to sex. However contrary to other research, no association was found between low self esteem, depression and anxiety, receipt of skill based training or use of alcohol with unprotected sex (McCowan *et al.,* 2004)

The public health and epidemiology literature has suspected for a few years that the belief in the efficacy of ARVs increases risky sexual behaviour, (Crepaz, Hart and Marks, 2004), but it

has failed to link the change in incentives with the issue of testing. In addition, some of these studies rely on questioning individuals directly about their views on ARVs; hence they waver between a causal path from optimism to risk and optimism about treatments as a form of *post hoc* rationalization following risky encounters, (Huebner, Rebchook and Kegeles, 2004).

Another closely related paper is that by Lakdawalla, Sood and Goldman (2006) which analyzes risky sexual behaviour among HIV+ individuals using access to health insurance as an instrument for treatment status. They find that treatment results in more sexual risk-taking by HIV+ adults. Insofar as my population is mostly composed of HIV- individuals, this work can be thought as a complement to theirs.

In addition, it has been established that in a study conducted by (Wolf et al.,2000), 12% of the respondents reported unsafe sex, During the preceding 6 months, 55% of individuals had stable and 19% had occasional partners, and 6% had both types of partners. Sexual intercourse was reported by 82% of individuals with stable and 87% of individuals with occasional partners, and of those reporting sexual intercourse in each group, 76% and 86%, respectively, said that they always used condoms.

After adjustment for covariates, reported unsafe sex was not associated with optimal viral suppression or antiretroviral therapy. It was however associated with gender, age, ethnicity, HIV transmission group, HIV status of partner, having occasional partners, and living alone. There is no evidence that self-reported unsafe sexual behaviour is more prevalent among HIV-infected individuals with optimal viral suppression. However, unsafe sex is associated with other factors, (Wolf, et al., 2000)

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the methodology used to achieve the objectives of the study. It entails the ethical consideration, research design, sample size determination, pre-test, population and area of study, sampling design and selection procedure, data collection, processing and analysis..

3.1.1 Study Population

Mpigi Health Centre provides care to approximately 1500 patients on ART. At the centre, there are PHA s who access their medication through the Joint Clinical research centre while others get medication through the Ministry of Health plan. The patients undergoing ARV therapy collect their medication monthly. Patients coming to the clinic for the first time and those not yet eligible for ARV therapy (by Ministry of Health treatment algorithm) receive cotrimoxazole prophylaxis, management of opportunistic infections, and laboratory evaluation of stage HIV infection as clinically appropriate as per national guidelines). ART is initiated by HIV-positive patients with CD4 cell counts of less than 200 cells/mm3 or when they are in Stage IV of HIV infection (WHO classification for disease staging). At this point, patients can be quite sick and many will have experienced one or more episodes of opportunistic infections. Once patients begin ART their immune systems and health status improve, and many are able to engage in sexual activity.

3.2 Scope

This was a cross sectional study that looked at both qualitative and quantitative aspects. Participants were recruited from patients taking ART attending JCRC clinic and Mpigi Health Centre respectively. It concentrated on ART patients above 18 years attending Mpigi Health Centre and the JCRC Clinic based at the Health Centre

3.3 Procedure of selecting and conducting investigations

PHAs who receive treatment from the centre were approached to seek their consent on the participation in the study. The participants in the study were systematically selected from the lists of PHAs who received treatment from the centre. The participants were selected from the patient registers using the simple random method.

3.4 Sample size determination

$$n = \frac{z^2 pq}{d^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

Where

n= the required sample size

z= the standard normal value corresponding to the required level of confidence

(95%) =1.96

p = the proportion of people who were faithful and used condoms

q = (1-*p*) is the proportion of People who were unfaithful without using condoms.

d = the desired precision of the estimate 5% (0.05)

Therefore

$$n = \frac{z^2 pq}{d^2}$$

z= 1.96

p=0.37 (UDHS 2006)

q=1-0.37= 0.63

$d^2 = 0.05^{2=}$ 0.0025

$n=1.96^2*0.37*0.63/0.05^2=358.19$

3.5 Pre-test

The pre-test was done in Luwero district at Kasana Health Centre IV. PHAs accessing medication from (Kasana Health centre and Joint Clinical Research centre) were interviewed

using exit interviews. The facility was chosen because it offered similar services to PHAs just like the study sample at Mpigi Health Centre. The pre-test was done to establish the consistency of the questions. The findings helped to remove irrelevant questions and add questions that had been missed.

3.7 Data collection

Data collection was done after pre-testing the instruments of the study for validation. The pre-test was conducted using a similar population, but outside the sample. Two methods of data collection were used namely focus group discussions and a detailed questionnaire.

3.8 Detailed questionnaire

The detailed questionnaire was administered to 358 respondents. The participants in the study were systematically selected from lists of patient registers of the two centres JCRC and Mpigi Health Centre. The questionnaires were administered with the help of two research assistants (ART counsellors) using exit interviews.

3.9 Focus group discussions.

This is one of the qualitative methods used in this study. All the responses from the participants were treated as right answers and were recorded by the note taker. The participants were allowed freedom of expression as the moderator directed the discussion along the focus group guide. A tape recorder was available at all discussions to record all that was said during the discussion. A total of 8 focus groups (4 with the females and 4 with the males) were conducted with the PHAs on ART. Each focus group was composed of 8-10 participants. Below is the breakdown of the focus groups.

The target respondents included the following;

Rural young male respondents aged 18-24 and urban male respondents aged 18-24.

Rural older men respondents aged 25 +and urban older men respondents aged 25 +

Urban young female respondents aged 18-24 and rural younger female respondents aged 18-24

Urban older women respondents aged 18-24 and older women respondents aged 25+

3.10 Data processing

This stage consisted of four activities:

This process involved data cleaning, editing and coding. Data cleaning helped check inconsistencies of the data collected. EPIDATA version 3.0 software was used during data entry and cleaning. After completing the above exercise, suitable questionnaire records were exported to STATA version 9.0 for analysis.

3.11 Data analysis

Two methods were used for data analysis. They include the qualitative methods and statistical methods.

3.12 Statistical analysis

In this study, frequencies and proportions were used. In addition to these methods, more analytical methods were used and these included chi-square and multinomial logistic regression.

Bivariate analysis was performed using the Pearson Chi- square. The chi- square was used to establish statistical association between the independent and the dependent variables. It is one of the simplest and most widely used non-parametric tests in statistical analysis. In this study, it was used to study the association between sexual behaviour and a set of demographic characteristics, social characteristics and the reasons why they engaged in risky sexual activity. From a theoretical point of view, these set of factors affect the probability of a PHA on ART being sexually active or not being sexually active. The chi-square was used to establish the magnitude of discrepancy between this theory and observed sexual behaviour rates to establish whether the observed discrepancy is a matter of chance or a result of the inadequacy of the theory to fit the observed facts.

3.13 The chi-square takes the formula below

$$x^2 = \sum_{i=1}^{r}\sum_{j=1}^{k}\frac{\left(O_{ij} - E_{ij}\right)^2}{E_{ij}} \quad \text{……..3.2}$$

Where; j=1, 2,…….., k.

i=1, 2,……, r

O_{ij} = Observed frequency.

E_{ij} = Expected frequency.

= Number of categories of the dependent variable.

r = Number of categories of the independent variable.

3.14 Interpretation of the results

If observed significance level of test is small, for example less than 0.05, then the null hypothesis were accepted and the alternative hypothesis was rejected. This meant that the two variables are statistically dependent such that if one of them changes, the other will also change.

3.15 The multinomial logistic model was used and it takes the form below

$$\log\left(\frac{p_{ij}}{p_{1j}}\right) = b_{0i} + b_{i1}x_{1j} + b_{i2}x_{2j} + \text{.....} + b_{ik}x_{kj} + e \quad \text{……3.}$$

3

p_{ij} Is the probability of the ith category (the probability of either, being faithful with condom use, unfaithful with condom us, unfaithful without condom use and faithful without condom use)

p_{1j} …….. is the probability of PHA abstaining

x_i ……is a particular explanatory variable

b_0 ……is the constant

b_s ……are regression parameter estimates

x_s ……are independent variables

e …….is the error term.

The multinomial logistic regression was used to estimate the effect of the covariates on sexual behaviour. The model was used because the dependent variable which is sexual behaviour had more than 2 categorical variables for example abstinence, faithfulness with no condoms and faithfulness with condoms. The multinomial logistic regression analysis was run at three levels:

1) For individual variables that were hypothesized to influence sexual behaviour

3.16 Interpretation of the results.

Coefficients were obtained by the maximum likelihood estimation (MLE) method. The method was used because it is known to give efficient estimators. The method is concerned with identifying the parameters which are most likely responsible for the observed results. In this study, the coefficients were interpreted as follows. Positive values of the beta indicated an increase in the relative risk of belonging to the independent variables for example social characteristics, demographic characteristics in comparison with the PHA sexual behaviour. The negative beta indicated a decrease in the relative risk of belonging to a category of the dependent variable. The level of significance level was determined by the probability values. If the significance level which is less that 0.05, the null hypothesis was accepted and the alternative rejected. This meant that the variables are statistically significant.

3.17 Qualitative analysis

The objectives of the study were first reviewed. The following procedure was used:

1. The data was first translated from English into Luganda a language that was

understood by most of the respondents.

2. The data was transcribed and codes developed for each theme and tasks for each participant in all focus groups. Similar themes were put under the same code. Strong concerns of individuals were also included.
3. A summary was developed for each theme and task for all focus groups.
4. A master sheet was developed where all focus groups and views for each group were entered under each task code.
5. Similarities of groups and individuals were then summarized following objectives and themes of the study. Qualitative results were then be integrated with quantitative results in the relevant sections.

3.18 Ethical consideration

Ethical approval was obtained from the Medical Officers of Kasana Health centre IV and Mpigi Health centre IV. This was done to ensure that both the respondents and health canters are comfortable with the entire research process. The respondents were also required to fill in consent forms and respondents who were not comfortable with participating in the study did not participate in the study.

CHAPTER FOUR:

4.0 DISCUSSION OF FINDINGS AND RESULTS.

4.1 Demographic socio-economic and other characteristics of the study population

The study explored the sexual behaviour of 358 PHAs on ART in the past 12 months. The first section of this chapter describes the background characteristics of the respondents the second section presents the intermediate factors.

4.2 Univariate analysis

4.3 Demographic characteristics of the respondents

4.3.1 Sex of the respondents

The findings in the table below indicates that the proportion of the females (60%) who participated in the study was twenty times more than that of the males. This particular finding is similar to what is observed in the African society, where sexual behaviour of an individual is usually influenced by sex of the individual. The males are expected to have more sexual contacts as well as have more sexual prowess than females. Sexual activity is associated with age for females than the males, (Baryomunsi, 1998).

4.3.2 Age

Majority of the respondents in the study were aged 35^{+}. Age is an important demographic factor that may influence one's sexual behaviour. In this study, respondents that participated in the study were 18 years and above because the law in Uganda considers a person who is 18 years as mature, able to make decisions and is accepted to engage in sexual activity. These findings are in the general trend of HIV/AIDS in Uganda and world wide that indicates that adults in the productive years of life are the most affected.

Table 4.1 Distribution of respondents by background characteristic:

Variable	Frequency	Percentage
Sex		
Male	144	40.2
Female	214	59.8
Total	**358**	**100**
Age group		
18-29	88	24.6
30-34	59	16.5
35-39	74	20.7
40-44	63	17.6
45^{+}	74	20.8
Total	**358**	**100**
Residence		
Rural	164	45.8
Urban	194	54.2
Total	**358**	**100**
Education level		
None	48	13.4
Primary	100	27.9
Secondary	143	39.9
Tertiary	67	18.7
Total	**358**	**100**
Employment		
Not employed	137	38.3
Farmer/peasant	190	53.1
Professional	31	8.7
Total	**358**	**100**
Income		
None	115	32.1
< 50,000	173	48.3
50,000-100,000	34	9.5
> 100,000	36	9.5
Total	**358**	**100**
Religion		
Catholic	151	42.2
Protestant	94	26.3
Moslem	56	15.6
Others	57	15.9
Total	**358**	**100**
Marital status		
Married	121	33.8
Cohabiting	48	13.4
Never married	44	12.3
Widow	34	9.5
Separated	111	31.0
Total	**358**	**100**

4.3.3 Education level of the respondents.

The findings in the table above indicate that 39.9% of the respondents had at least attained secondary school 27.9% had primary education and 18.7% had tertiary education. This finding is in line with the evidence and theory as suggested that educated people are more likely to adopt safe sexual practices in response to health promotion, (Fylkesnes, *et al.* 1997).

4.3.2 Occupation and income of the respondents

Occupation refers to any kind of job or profession. Once an individual is employed, he or she can attain wealth. The occupation of an individual in most cases influences the socio-economic status of the individual. Occupation was categorized into three categories not employed, farmer/peasant/ self employed, and professional. The findings showed that 53.1% of the PHAs that participated in the study were farmers/ peasants or self employed. PHAs who reported not employed were students, house wives, disabled/ or the elderly. 8.8% of the PHAs were professionals.

4.3.3 Religion

Religion is an important factor, which determines one's sexual behaviour. Depending on which religious affiliation one subscribes to different practices may or may not be permitted. For instance, the Moslems permit polygamy unlike the Protestants or Catholics. From the study, the Catholics contributed the biggest proportion in the study 42.2% followed by the Protestants 26.3%, the Moslems and other religious faith contributed approximately 16% of the sampled population. Religion may influence the way an individual sexually behaves for example, for example the catholic community does not recommend use of condoms therefore a number of PHAs might fail to use condoms because of their faith even when they know their status.

4.3.4 Marital Status

The findings from the study showed that majority of the respondents were married (33.8%) or separated (31%). It should also be noted that marital status plays an important role on one's

sexual behaviour. The least number of the respondents were either widowed (9.5%) or never married (12.3%).

Table 4.2: Percentage distribution by children ever borne and desire for children

Variable	Frequency	Percentage
Ever given birth	320	89.4
Never given birth	38	10.6
Total	**358**	**100**
Children ever borne		
No child	38	10.6
2 children	52	14.5
3 children	50	13.9
4 children	58	16.2
5^{+} children	119	26.5
Total	358	100
Intentions to have children in future		
Have intentions to have children	84	23.5
Don't have intentions to have children	274	76.5
Total	**358**	**100**

The findings in the table above showed that 89.4% of the respondents had ever given birth and had given birth to at least to two or more children. The findings also showed that 10.6% of the respondents had never given birth and 92.1% reported that they had intentions of getting children in future.

Table 4.3: Sexual active status.

Studies have showed that when People living with HIV are on ART medication they are able to gain their sexual viability. The study was set up to establish the proportion of the PHAs who are sexually active and how many are not sexually active. The qualitative aspect also helped to establish reasons why some of the PHAs are not sexually active despite the good health. The table below shows the findings from the study.

Variable	Frequency	Percentage
Sexually active	234	34.6
Not sexually active	124	65.4
Total	**358**	**100**

Majority of the respondents (65.4%) were sexually active i.e. they had engaged in sexual activity in the past 12 months while (34.6%) did not engage in sexual activity in the past 12 months.

4.4 HIV disclosure and ART.

The study also investigated whether the PHAs on ART disclosed their status to their partners before engaging in sexual activity. It has been reported that lack of knowledge of the partners' status and poor status disclosure are some of the drivers of HIV/AIDS among PHAs in Uganda (UAC, 2007). Below are the findings from the study.

Table 4.4: Distribution of respondents' status disclosure to partner during sexual activity

Variable	Frequency	Percentage
Disclosed status to partner	136	58.1
Did not disclose status to partner	98	41.9
Total	**234**	**100**
Disclosed ART status	131	55.9
Did not disclose ART status	103	44.1
Total	**234**	**100**
Knowledge of partner's status		
Knew partner's status	122	52.1
Did not know partner's status	112	47.9
Total	**234**	**100**
Partner status results		
Positive	82	67.2
Negative	40	32.7
Total	**122**	**100**

The findings indicated that more than half (58.1%) of the respondents that participated in the study disclosed their status to their partners compared to 41.9% that did not.

The findings further revealed that about 56% disclosed to their partners that they were on ART.. The findings further revealed that more than fifty percent (52.1%) of the PHAs that participated in the study engaged in sexual activity with partners whose status they knew and 47.9% engaged in sexual activity with partners whose status they did not know. The findings further revealed that 67.2% engaged in sexual activity with HIV positive partners and 32.7% engaged in sexual activity with HIV negative partners. This finding is challenging to programme implementers whose focus is HIV prevention because it puts a big number of

people at a risk of getting infected. It is also very important to focus at programmes that enlighten the affected population the importance of safer sex measures, as well as disclosing HIV status to the partners before engaging in sexual activity.

Table 4.5 Distribution of respondents by sexual relationship of the partners engaged with in sexual activity.

The study also established the type and number of sexual partners that the PHAs engage with in sexual activity. The table below shows the results from the study.

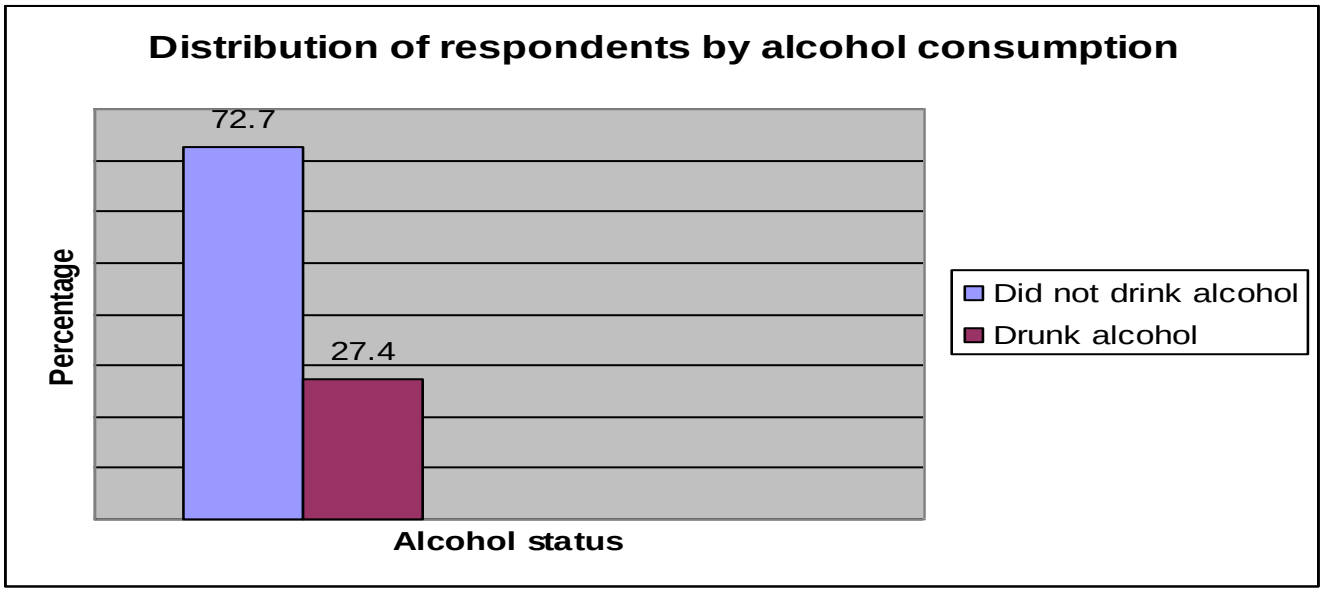
Relationship with partner	**Frequency**	**Percentage**
Husband/wife	120	51.3
Boyfriend/Girl friend	77	32.9
Casual partner	37	15.8
Total	**234**	**100**
Number of sexual partners during time of study		
More than one sexual partner at the time of study	99	42.3
One sexual partner at time of study	135	57.7
Total	**234**	**100**

The proportion of PHAs that engaged in sexual activity with their husbands or wives was higher (51.3%) than that of PHAs that engaged in sexual activity with casual partners (15.8%) and boy friends or girl friends (32.9%). The findings also showed that majority of the PHAs (57.7%) engaged in sexual activity with one sexual partner while 42.3% engaged in sexual activity with more than one sexual partner.

4.6 Distribution of the respondents by alcohol consumption

The study also investigated whether the respondents engaged in sexual activity because they were under the influence of alcohol. Studies have established that engaging in sex under the influence of alcohol can impair judgment, compromise power relations, and increase risky sexual behavior. Respondents therefore who participated in the study and had sex in the past 12 months were asked for each partner if they or their partner drank alcohol the last time they had sex with that partner, and whether they or their partner was drunk. The results are shown in the figure below.

Figure 4.1: **Distribution of the respondents by alcohol consumption**



The findings indicated that majority of the respondents (72.7%) that participated in the study did not drink alcohol and 27.4% engaged in sexual activity as a result of alcohol consumption.

Table 4.6: Distribution of respondents by sexual protection and condom use

Condom use among PHAs plays an important role in the prevention of transmission of HIV and other sexually transmitted infections, as well as unwanted pregnancies. Knowledge of a source of condoms to obtain and use condoms. The Uganda HIV prevention programme evolved along the interventions of promoting abstinence, being faithful, and condom use (the "ABC" approach). The ABC approach is particularly pertinent for PHAs. The table below shos the findings from the study about the respondents' sexual protection and condom use.

Table 4.6 Distribution of respondents by sexual protection and condom use

Number of sexual partners	Frequency	Percentage
One sexual partner	135	57.7
Multiple sexual partners	99	42.3
Total	**234**	**234**
Consistence condom use		
Condom was used last sexual activity	138	58.9
Condom was not used last sexual activity	96	41.1
Total	**234**	**100**
Frequency of condom use		
Always	95	68.8
Sometimes	43	31.2
Total	**138**	**100**
Reasons for using the condom		
Protection against re-infection and infection	66	47.7
Advise from health worker	14	10.1
Did not want to get pregnant	47	34.1
Partner insisted on using	11	8.1
Total	**138**	**100**
Reasons for not using condoms		
No knowledge of condom use	11	11.5
Did not have a condom then	8	8.3
Too messy/inconvenient	12	12.5
Doesn't like condoms	25	26
Self / Partner wanted to get pregnant	16	16.7
Partner insisted on not using	24	25
Total	**96**	**100**
Condom use with casual partner		
Condom was used with casual partner	97	70.3
Condom was not used with casual partner	41	29.7
Total	**138**	**100**

The findings showed that the proportion of PHAs that engaged in sexual activity with one sexual partner was (57.7%) and 42.2% engaged in sexual activity with multiple sexual partners. The findings further revealed that 58.9% of the PHAs that participated in the study used condoms consistently during sexual activity while 41.1% did not. The findings further showed that 68.8% of the respondents that used condoms always and consistently. The findings however showed that 31.2% did not consistently use condoms during sexual activity. The respondents who used condoms also gave the reasons for their behaviour. The findings showed that 47.7% used condoms because that they wanted to protect themselves against infection and re-infection. In addition to that 34.1% used condoms because they did not want to get pregnant or did not want to get pregnant. The findings further revealed that 20.1%

respondents used condoms because they were following the advice of the health workers.

Respondents that reported not to have used condoms had reasons for their behaviour. The findings showed that 26% of the respondents did not want to use the condoms, 25% did not have a condom then so decided to engage in sexual activity without a condom while 16.7% reported that their partners wanted to get pregnant and 12.5% reported that the condoms were too messy and inconvenient to be used.

4.7 Comprehensive Knowledge about HIV/AIDS

National studies that have been conducted in Uganda, (MOH, 2005) and (UDHS 2006) indicate that there is comprehensive knowledge of HIV/AIDS transmission and prevention. When PHAs on ART go for medication at the health centres, they are often encouraged practice safer sex. Table 4.7 below shows the findings from the study.

Table 4.7 Distribution of respondents' comprehensive knowledge of HIV/AIDS

Characteristic	Frequency	Percentage
Have knowledge about infecting other people	222	94.9
Did not have knowledge about infecting other about re-infection	12	5.1
Total	**234**	**100**
Had knowledge about re-infection	222	94.6
Did not have knowledge about re-infection.	4	5.1
Total	**234**	**100**

The findings from the study showed that majority of the respondents (94.9%) had information about HIV transmission and infection aand were aware that if they enaged in risky sexual behaviour, they may transmit the virus to other people. This finding therefore enlightens us that Phase who engage in risky sexual behaviour are aware of the consequences if they engage in risky sexual behaviour. Similarly national studies done in Uganda by Ministry of health and UDHS (2006) have showed that indeed majority of the population in Ugmada has comprehensive knowledge about the transmission of HIV.

Table 4.8: Percentage distribution of respondents who were abstaining during the reference time of the study.

Characteristic	Frequency	Percentage
Had intentions of engaging in sexual activity	49	39.5
Had no intentions of engaging in sexual activity	75	60.5
Total	**124**	**100**
Characteristic		
Reasons for engaging in sexual activity		
Wanted to get a child	29	59.2
Will be married	13	26.5
Will have recovered from shock of the HIV status results	4	8.2
Believed will be fine	3	6.1
Total	**49**	**100**

The study also found out if PHAs that were abstaining had any future intentions of engaging in sexual activity. The findings showed that 60.5% had no intentions of engaging in sexual activity any more and 39.5% had hope that would ever engage in sexual activity. More than half of the PHAs that had hope of engaging in sexual activity (59.2%) said they would engage in sexual activity because they wanted to get a child. 26.5% thought that hopefully they may get married and resume sexual activity since they were not married during the time of the study.

4.8 Summary

In this chapter, a description of the demographic characteristic and social characteristics was presented. Frequencies and proportions of the following variables age, sex, religion, residence, marital status, occupation, education level, sexual active status, HIV status disclosure, type of partners, condom use were presented. The study also established the future intentions of PHAs that were abstaining.

At the next stage of analysis, the dependent and independent variables were cross tabulated to identify if there existed a significant relationship between the variables. The dependent variables were risky sexual behaviour i.e. condom use, number and type of sexual partners, the independent variables were sex, marital status, age, residence, occupation, education level, disclosure of HIV status.

CHAPTER FIVE

DIFFERENTIALS OF SEXUAL ACTIVITY AND DEMOGRAPHIC CHARACTERISTICS AND SEXUAL BEHAVIOUR OF PHAs ON ART.

5.1 Bivariate analysis

In this section, Pearson- chi square was used to assess the level of association between sexual activity and sexual behaviour of the PHAs on ART. A relationship was said to be significant if the derived p value was less or equal to 0.05.

5.1.1 Sex and sexual behaviour of the PHAs

According to table 5.1 there was a significant relationship between sex and the sexual behaviour of PHAs on ART (p= 0.000) the proportion of female PHAs who were abstaining was higher among the females (41.6%) compared to the males (27.8%). The proportion of PHAs who were faithful to their partners and used condoms was less than fifty percent (23.6%) among the males and (20.1%) among the females. The proportion of male PHAs who were not faithful to their sexual partners and used condoms was higher among the females 16% compared to 6.9% among the males. More of the male PHAs 27.1% were not faithful to their sexual partners but used condoms compared to the females 7.9%. The findings also showed that there was no significant difference between the proportion of the male PHAs that were not faithful to their partners and did not use condoms.

Table 5.1 Demographic characteristics and the sexual behaviour of the PHAs

Variable	Total N	Abstinence %	Faithful with condoms %	faithful without condoms %	Unfaithful with condoms %	Unfaithful without condoms %
Sex						
Male	144	27.8	23.6	6.9	27.1	14.6
Female	214	41.6	20.1	16.4	7.9	14.0
Fishers exact = 0.000						
Age group						
18-29	88	34.1	26.1	11.4	18.2	10.2
30-34	59	20.3	20.3	18.6	15.3	25.4
35-39	74	36.5	17.6	13.5	14.9	17.6
40-44	63	49.2	14.3	7.9	11	17.5
45-max	74	20	27	12.2	17.6	4.1
χ^2 =28.3611 p = 0.029						
Residence						
Rural	164	30.5	18 10.9	33 20.1	26 15.9	164
Urban	194	40.7	27 13.9	23 11.9	25 12.9	194
χ^2 = 7.7823 p = 0.100						
Education						
None	48	22.9	22.9	8.3	14.6	8.3
Primary	100	20	20	14	16	15
Secondary	143	20.1	20.1	16.1	15.4.	18.2
Tertiary	67	25.4	25.4	5.9	16.4	8.9
χ^2 = 13.1517 p = 0.358						
Religion						
Catholic	151	42.4	15.9	9.9	14.6	17.2
Protestant	94	32.9	25.5	13.8	13.8	13.8
Moslem	56	25	26.8	25.5	19.6	16.1
Other	57	35.1	10	10	10	5.3
Fishers exact = 0.234						
Income						
None	115	46.1	21.7	11.3	11.3	9.6
<50,000	115	29.5	20.2	19.7	19.7	16.8
50,000-100,000	34	35.3	29.4	5.9	5.9	20.6
>100,000	36	7.0	19.4	19.4	19.4	11.1
χ^2 =16.6076 p = 0.165						
Marital Status						
Married	121	4.9	35.5	16.5	19.8	23.1
Cohabiting	48	16.7	25	25	16.7	16.7
Never married	44	56.8	18.2	4.6	11.4	9.1
Widow	34	91.2	0.0	2.9	2.9	2.9
Separated	111	53.2	12.6	9.0	16.2	9.0
HIV status disclosure						
Disclosed status to partner	142	0.7	40.9	16.2	21.1	21.1
Did not disclose status to partner	216	59	8.8	10.2	12.0	9.7
Pr = 0.000						

5.1.2 Age and sexual behaviour of the PHAs

A significant relationship was established between age and the sexual behaviour of the PHAs that participated in the study (p= 0.029). The findings also showed that PHAs in the 40-44 age groups abstained from sexual activity compared to other age groups. The proportion of PHAs that were faithful to their partners and used condoms was highest amongst the PHAs aged 45 and above (26.1%) compared to PHAs in the other age groups and least among PHAs aged 40-44. Less than fifty percent of the participants from the different age groups were faithful to their partners and used condoms or did not use condoms during sexual activity. The qualitative results explained the reasons as to why some of the PHAs were abstaining yet they were in the reproductive age group when they should be sexually active.

"I did not know that I was HIV positive not until I tested HIV positive. I was very shocked when I recievd the results because I did not expect it.At first I doubted the results but when I went for HIV testing for more than three times I believed. I was very disappointed with life. I thought I would not leave to see my child grow or even ever have sex again. I regretted the day I was borne. I don't trust my partner any more neither do I want to engage in sexual activity at all. (One female from the older women' FGD said).

"When I tested HIV positive I decided to leave my partner and go back to my parents' home. I felt so betrayed in life because I had never engaged in sexual activity with any other person in my life apart from my husband. Above all, we had our blood tested before getting married. I promised myself never to engage in sexual activity again. Today, as I take my ARVs my sexual desires have returned but I am afraid to engage in sexual activity because I may be re-infected by my partner (Five females from the younger aged group reported).

"I lost my husband five years ago, after some time also started suffering from illness. My family members thought that I would not live, I had also given up with life but when I started

taking ARVs my life has improved. I am afraid to engage in sexual activity again. (One female from the elderly FGD said)

When I tested HIV positive, I disclosed to my partner. I requested her to have her blood tested before we could resume our sexual activity. Thanks be to God because she was diagnosed HIV negative. I don't want to infect her and that is the reason I have requested her to either look for a partner who is HIV negative or stay with me but without engaging in sexual activity so that she does not infect our baby who is also HIV negative or blame me for having infected her. This is not an easy decision but I am trying hard to see that I keep to my word (One male from the FGD from the elderly males said).

"I did not think that the world would turn against me. At the age of 15 years, I had never engaged in sexual activity. My friends encouraged me to have a boy friend who would give some of the luxurious things that t my parents were unable to give me. I followed their advise and decided to get Tom to be my boy friend.. He was a very kind and generous man. He gave me all that I asked from himand in return would engage in sexual activity with me. Although I was conscious that I would get pregnant or acquire HIV, Tom never wanted to use condoms. He instead advised me to use contraceptives and with the support of my friends I was able to begin taking pills. Last year Tom passed away and I also started getting sick. The doctors advised my parents to have my blood tested for HIV which they did and I was found HIV reactive. I was started on ARVs but i regret why I ever engaged in sexual activity with Tom. I don't think that I will ever engage in sexual activity any morel. Young girls please abstain from sex until marriage time and always have your blood tested first." (One female from the younger women's FGD said).

5.1.3 **Residence and sexual behaviour**

The findings showed that more PHAs (40.7%) who resided in the urban areas of Mpigi were

cohabiting compared to PHAs who resided in the rural areas (30.5%). A non significant relationship was established between residence and sexual behaviour.

5.1.4 Marital status and sexual behaviour of the PHAs

The findings showed that there was a significant relationship established between marital status and the sexual behaviour of the PHAs. The widowed PHAs (90%) were more likely to abstain from sexual activity compared to other categories of the PHAs. The proportion of PHAs that were (never married, abstaining) slightly more than fifty percent (56.8% and 53.2% respectively). Least abstinence was observed amongst the married PHAs (4.9%). The findings also showed that there was no faithful PHA who used condoms during sexual activity.

The qualitative results also helped to provide more information about the type of partners that the PHAs have. Below are the responses from the qualitative study.

"My ART counsellor has always advised me to be faithful to my sexual partner to avoid getting re-infected and as well as infecting other people with HIV. She told me that this will help me to lead a happy life and also see my children grow. I am learning to change behaviour and live by this principle (One male from the older men's FGD reported).

5.1.5: Sexual behaviour and status disclosure of the PHAs

The findings from the study showed that there was a significant relationship between status disclosure and the sexual behaviour of the PHAs. The findings further revealed that 40.8% of the PHAs who were faithful and used condoms disclosed their status to their partners. Only 21.1% of the partners who were not faithful and did not use condoms during the reference time disclosed their status. Non status disclosure (12%) was highly observed amongst PHAs who were not faithful and did not use condoms with their partners during the reference time.

5.2 SEXUAL BEHAVIOR OF PEOPLE LIVING WITH HIV ON ART AS GIVEN BY THE MULTINOMIAL LOGISTIC REGRESSION MODEL

The analysis was done to identify the most influential factors that contribute to the level and trend of sexual behaviour. In order to establish the factors associated with sexual behaviour among PHAs on ART, multinomial logistic regression model was fitted for all the factors that showed a significant association at the bivariate level.

5.3.1 Overall significance

Overall, according to Tables 5.2 and 5.3, the model was a good fit ($p < 0.005$), signifying that the explanatory variables (sex, age, residence, and marital status) cause variation in the dependent variable (sexual behaviour)

Demographic characteristics and sexual behaviour of the PHAs in comparison with abstinence

In the Table 5.2 and 5.3 the variables that were significant in the previous chapter were included in section for further analysis. This was done to identify parameters that were most likely responsible for the observed type of sexual behavioe of the PHAs. The positive values of the beta indicated an increase in the relative risk of belonging to the independent variable such as sex, age group, marital status and the status disclosure. The negative beta on the other hand indicated a decrease in the relative risk of belonging to a category of the dependent variable. If the level of significance level was less than 0.005, the null hypothesis was accepted and the alternative rejected.

Table 5.2 Demographic characteristics and sexual behaviour of the PHAs in comparison with Abstinence

Variable	RRR	Std.Err	P>|z	RRR	Std Err	P>|z
Faithful with condom use				**Faithful without condoms**		
Sex						
Male	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Female	0.803	0.296	0.552	1.947	0.934	0.160
Age group						
18-29	5.653	3.507	0.005	3.647	0.934	0.165
30-34	4.758	3.128	0.018	3.647	2.660	0.076
35-39	3.214	1.947	0.054	6.445	4.669	0.010
40-44	**1.000**	**.**	**.**	**1.000**	**.**	**.**
45-max	7.484	4.519	0.001	5.832	4.197	0.014
Residence						
Rural	1.147	0.411	0.701	1.036	0.432	0.932
Urban	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Marital status						
Married	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Cohabiting	0.177	0.177	0.009	0.251	0.182	0.056
Never married	0.279	0.196	0.000	0.022	0.018	0.000
Separated	0.040	0.218	0.000	0.089	0.051	0.000
HIV status disclosure						
Disclosed status	1.84	2.480	0.001	1.002	1.837	0.455
Didn't disclose status	**1**	**.**	**.**	**1.000**	**.**	**.**

(Abstinence is the comparison group)

Key: Number of observations = 358, LR chi2 (40) = 214.04, Prob > chi2 = 0.0000, Log likelihood = -441.90, Pseudo R2 = 0.1950 Abstinence is the base outcome

5.3.1 Age

According to table 5.2 the findings from the study showed that there was a significant relationship between age and the sexual behaviour of the PHAs ($p<0.01$). The findings also showed that PHAs aged 18-29, 30-34; 35-39 had an increased risk (rrr=5.653, 4.758 and 3.214) respectively of being faithful with condom use rather than abstaining compared to PHAs aged 40-44 years. The findings also showed that the PHAs aged 35-39, 45 years and above had an increased risk of being faithful without condom use rather than abstaining compared to those aged 40-44 years.

5.3.2 Marital status

Results in Table 5.2 showed that there was a significant relationship between marital status and the sexual behaviour of the PHAs. The findings also showed that PHAs who were cohabiting, never married, and the separated had reduced risk of being faithful with condom use rather than abstaining as compared to the married PHAs.

5.3.3 Sexual behaviour and HIV status disclosure

The findings in Table 5.2 showed that there was a significant relationship between HIV status disclosure of the PHAs. From the findings in the table above, PHAs who disclosed their HIV status had an increased risk of being faithful with condom use rather than abstaining compared to those who did not disclose their status.

5.3.4 Sexual behaviour and residence.

The findings also showed that there was no significant association between place of residence and the sexual behaviour of the PHAs ($p>0.05$).

5.3.5 Sexual behaviour and sex

The findings in the table above indicate that there was no significant relationship between sexual behaviour and the sex of the respondents ($p>0.05$).

5.3.4 Sexual behaviour and HIV status disclosure

The findings in table 5.2 showed that there was a significant relationship between HIV status disclosure of the PHAs. The findings also showed that the PHAs that disclosed their HIV status had an increased risk of being faithful with condom use rather than abstaining compared to those that did not disclose their status.

Table 5.3 Demographic characteristics and sexual behaviour of the PHAs in comparison with Abstinence

Variable	RRR	Std.Err	P>|z	RRR	Std Err	P>|z
Unfaithful with condom use				**Unfaithful without condom use**		
Sex						
Male	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Female	0.206	0.085	0.000	0.723	0.301	0.435
18-29	7.359	4.922	0.003	1.829	1.202	0.358
30-34	7.359	4.922	0.003	4.792	2.997	0.012
35-39	5.501	3.877	0.016	2.346	1.377	0.147
40-44	**1.000**	**.**	**.**	**1.000**	**.**	**.**
45-max	3.302	2.171	0.069	0.889	0.051	0.000
Rural	2.062	0.797	0.061	1.679	0.665	0.190
Urban	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Married	**1.000**	**.**	**.**	**1.000**	**.**	**.**
Cohabiting	0.251	0.181	0.056	0.195	0.137	0.019
Never married	0.022	0.0177	0.000	0.029	0.024	0.000
Separated	0.089	0.051	0.000	0.042	0.025	0.000
Status disclosure						
Disclosed status	0.869	0.815	0.003	0.248	0.153	0.024
Didn't disclose status	**1.000**	**.**	**.**	**1.000**	**.**	**.**

(Abstinence is the comparison group)

Key: Number of observations = 358, LR chi2 (40) = 214.04, Prob > chi2 = 0.0000, Log likelihood = -441.90, Pseudo R2 = 0.1950 Abstinence is the base outcome

5.3.5 Sex

The findings in Table 5.3 showed that there was a significant relationship ($p<0.01$) between sex and the sexual behaviour of the PHAs. The results also showed that the female PHAs had a significant reduced risk (rrr=0.206) of being unfaithful with condom use rather than abstaining compared to the male PHAs.

5.3.6 Age

The findings in Table 5.3 showed that PHAs aged 18-29, 30-34; 35-39, and 45 years and above had an increased risk (rrr=7.359, 7.359, 5.501 and 3.302) respectively of being unfaithful with condom use rather than abstaining compared to PHAs aged 40-44 years.

The findings however showed that PHAs aged 45 years and above had a reduced risk of being unfaithful without condom use rather than abstaining compared with PHAs aged 40-44 years.

5.3.7 Marital status

Results in Table 5.3 showed that there was a significant relationship between marital status and the sexual behaviour of the PHAs. The findings also showed that PHAs who were cohabiting, never married, and the separated had reduced risk of being unfaithful with condom and unfaithful without condom use rather than abstaining as compared to the married PHAs.

5.3.8 Sexual behaviour and residence.

The findings also showed that there was no significant association between place of residence and the sexual behaviour of the PHAs ($p>0.05$).

5.3.9 Sexual behaviour and HIV status disclosure

The findings in Table 5.3 showed that there was a significant relationship between HIV status disclosure of the PHAs. The findings further showed that PHAs who disclosed their HIV status to their sexual partners had reduced risk of being unfaithful with condom use rather than abstaining compared to those who did not disclose their HIV status.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

The study aimed at examining the sexual behaviour of PHAs on ART at Mpigi Health Centre. This chapter gives a synthesis of the conclusions and discussions in the last five chapters.

6.1 Summary of findings

The study was based on primary data source. The respondents were PHAs accessing treatment from Mpigi Health Centre 1V, Goli HC 11 and Nswanjere Health centre 111. The study concentrated on ART patients above 18 years. A total of 358 respondents participated in the study. The background characteristics of respondents were examined in order to form a basis for further analysis. The variables considered in the study were; sex, age religion, education, residence and marital status.

At the univariate level of analysis 65% 0f the respondents were sexually active of whom 58% disclosed their status to their partners before engaging in sexual activity with them. Multiple partnering (42.7%) and non condom use (41%) were the risky sexual behaviours that were observed amongst the respondents. Respondents (48%) also engaged in sexual activity with partners whose status they did not know. The results further showed that 32% of the respondents engaged in sexual activity with HIV negative partners. Although it was earlier on hypothesised that PHAs on ART do not engage in risky sexual behaviour, the findings from the study showed that this is not true.

Bivariate analysis included cross tabulations for computing the chi- square value. It was established that sex, age and marital status had a significant association with the PHAs sexual behaviour.

Multivariate analysis, overall significance, the model was a good fit ($p < 0.005$), signifying that the explanatory variables (sex, age, and marital status) caused variation in the dependent variable. A significant relationship ($p<0.05$) was established between sex, age and marital status of the PHAs that participated in the study. Residence was however found not significant.

6.2 Conclusion

In conclusion therefore, there is a big proportion pf people living with HIV who were found not sexually active. The qualitative data helped to identify the reasons why a number of them abstain from sexual activity. It is therefore important for HIV people involved in the counselling of HIV clients to understand that sexual activity is normal and should not abstain because they are HIV positive. The findings also showed that PHA s engage in risky sexual behaviour like multiple partnering, non condom use, as well as not disclosing HIV status to their sexual partners. It is therefore important for HIV prevention implementers to design strategies that will help people living with HIV to avoid engaging in such risky behaviour if the rate of HIV infection is to be reduced in Uganda.

6.3 Recommendations

This study was conducted among PHAs on ART. It is not possible to get answers to all questions related to sexual behaviour among people living with HIV. The study established that there was a significant relationship between sex and sexual behaviour of the PHAs. The proportion of female PHAs who abstained from sexual activity was higher than that of the males. It is therefore recommended that HIV counsellors continue to encourage the females to lead a happy life despite their HIV status. They should also be provided with messages that encourage them to engage in sexual activity other than condemning themselves for having acquired the HIV virus.

Multiple partnering, non condom use and not disclosing HIV status to their partners were the risky sexual behaviours that were observed amongst the PHAs who participated in the study. It is therefore important for policy makers and HIV prevention programme implementers to design programmes and messages that help in the reduction of such risky sexual behaviour if HIV incidence and prevalence are to be reduced in Uganda.

The findings from this study also showed that 40% of the PHAs engaged in sexual activity with partners who were HIV negative. It is therefore recommended that agencies working with PHAs strengthen areas of HIV prevention among the infected people if the rate of HIV incidence is to be reduced in Uganda. It is important for such agencies to design programmes that include HIV prevention messages such as condom use, faithfulness and HIV status disclosure among people living with HIV.

Multiple partnering without condom use was highly observed amongst the married PHAs. It is recommended that programme designers focus at strengthening behaviour change messages that promote faithfulness amongst people living with HIV.

The findings showed that PHAs aged 18-29 used condoms more than the other age groups. It is therefore recommended that programmes targeting sexually active PHAs should be set up. The activities in the programmes should focus on safer sex methods e.g. condoms use, avoiding multiple partnering and faithfulness to the sexual partner if HIV infection and sur-infection is to be controlled amongst PHAs.

6.3 Recommended Research agenda

It is important that similar studies be done in other Health Units in the country for comparative purposes. In addition it's important to conduct studies to establish reasons why the married PHAs do not use condoms during sexual activity with multiple partners and the reasons why they engage in multiple relationships despite the knowledge of their HIV status.

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