

**FACTORS ASSOCIATED WITH FERTILITY DESIRES AND INTENTIONS AMONG
HIV POSITIVE WOMEN ENROLLED AT A HIV TREATMENT CLINIC IN
WINDHOEK, NAMIBIA**

by
Tafadzwa Chakare

*Assignment presented in fulfilment of the requirements for the degree of Master in Philosophy
(HIV/AIDS Management) in the Faculty of Economic and Management Sciences at Stellenbosch
University*

Supervisor: Mr Burt Davis

March 2013

DECLARATION

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

Date: March 2013

ABSTRACT

Fertility patterns among Persons living with HIV (PLHIV) could have important HIV prevention and demographic implications particularly in high prevalence settings. Fertility volitions and associated factors among PLHIV have been documented in many countries, but there is a paucity of data on Namibia. Knowledge on health worker attitudes towards positive parenting is also lacking.

Using a cross-sectional survey design, data was collected from 50 HIV positive women of reproductive age using an interviewer administered questionnaire. Social, demographic, sexual, reproductive and other variables were explored. In addition, a self-administered questionnaire was presented to 15 health workers at the target site to assess the service provider environment vis-à-vis positive parenting.

The mean age of the HIV positive women was 34.2 years and 71.4% were sexually active. Most (80%) were in relationships but only 10% were married. Approximately 22.2% did not know their partner's HIV status and 17% had not disclosed their HIV status to their partner. Childbearing after HIV diagnosis was common and fertility desires (44.9%) and intentions (42%) were abundant. The service provider environment was generally PLHIV friendly but discouraged childbearing especially among women who were already parents.

Descriptive analysis showed possible connections between elevated fertility desires and/or intentions and higher education levels, having a partner, not having children, not having children in the current relationship, history of HIV related child death, less formal relationships, shorter relationships, disclosure to partner, awareness of partner's status, having a HIV negative partner, STI treatment after HIV diagnosis, Prevention of Mother-to-Child Transmission experience as well as anti-retroviral therapy status. Of the relationships subjected to inferential analysis, none was statistically significant. Many were not testable due to limitations emanating from the small sample size.

OPSOMMING

Fertiliteitspatrone onder mense wat met MIV saamleef (PLHIV), kan belangrike MIV-voorkomings en demografiese implikasies inhou, veral in hoë voorkomsgebiede. Fertiliteitsvoorkeure en geassosieerde faktore onder PLHIV is in vele lande te boek gestel, maar daar bestaan 'n gebrek aan data wat Namibië betref. Kennis oor gesondheidswerkers se ingesteldhede teenoor positiewe ouerskap is ook gebrekkig.

Data is uit die geledere van 50 MIV-positiewe vroue van voortplantingsouderdom verkry deur onderhoudvoering en vraelys, asook deur gebruikmaking van 'n oorkruis-deursnee opname-ontwerp en sosiale, demografiese, seksuele, voortplantings en ander veranderlikes is ondersoek. Daarbenewens is 'n selfgeadministreerde vraelys aan 15 gesondheidswerkers op die teiken-terrein voorgelê om die diensvoorsiensomgewing ten opsigte van positiewe ouerskap te probeer assesser.

Die verteenwoordigende ouderdom van die positiewe vroue was 34.2 jaar en 71.4% van hulle was seksueel aktief. Die meerderheid (80%) was in verhoudings, maar net 10% was getroud. Sowat 22% het nie geweet wat hulle maats se MIV-status was nie en 17% het nie hulle MIV-status aan hul maats verstrekk nie. Kindergeboorte na MIV-diagnose het algemeen voorgekom en voortplantingswense (44.9%) en –intensies (42%) was volop. Die diensvoorsieningsomgewing was oor die algemeen PLHIV-vriendelik, maar swangerskappe, veral onder vroue wat reeds ouers was, is ontmoedig.

Omskrywende analise het gedui op moontlike verbintenisse tussen hoë fertiliteitswense en/of –intensies en hoër onderwysvlakke, die teenwoordigheid van 'n maat, nie kinders te hê nie, nie kinders in die huidige verhouding te hê nie, geskiedenis van MIV-verwante kindersterftes, minder formele verhoudings, korter verhoudings, openbaarmaking aan maat, bewustheid van maat se status, in verhouding wees met 'n MIV-negatiewe maat, behandeling vir seksueel oordragbare infeksie na diagnose van MIV, Voorkoming van Moeder-tot-Kind oordragsondervinding sowel as anti-retrovirale terapiestatus. Nie een van die verhoudings wat aan afleibare analise onderwerp is, was statistiekgesproke beduidend nie. Talle verhoudings kon weens beperkinge voortspruitend uit die klein monstergrootte nie getoets word nie.

ACKNOWLEDGEMENTS

Special thanks go out to the patients and staff of Katutura Health Centre for the time they took to participate in this study. To my study supervisor, Mr Burt Davis, the project would not have been plausible without your valuable input. Special mention also goes to Stellenbosch University's Africa Centre for HIV/AIDS management. You are torch bearers in the field of HIV management and your tutelage and guidance is invaluable. To Mrs Lillian Pazvakawambwa, thank you for demystifying data capturing and analysis.

Last but not least I am grateful to my wife, Rejoice and sons, Tanaka and Tawana for allowing me to plough precious family time into this project. Your love and patience is treasured.

ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral Drug
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
IUCD	Intra-Uterine Contraceptive Device
KHC CDC	Katutura Health Centre Communicable Disease Clinic
MoHSS	Ministry of Health and Social Services (Namibia)
PLHIV	People Living with HIV and AIDS
PMTCT	Prevention of Mother to Child Transmission of HIV
PrEP	Pre-Exposure Prophylaxis
QAP	Quality Assurance Program
SAfAIDS	Southern Africa HIV/AIDS Information Dissemination Service
SPSS	Statistical Package for the Social Sciences
STI	Sexually Transmitted Infection
UNAIDS	United Nations Joint Programme on AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

TABLE OF CONTENTS

Declaration	i
Abstract	ii
Opsomming	iii
Acknowledgements	iv
Acronyms	v
Table of Contents	vi
List of Figures	ix
List of Tables	xi
Chapter 1: INTRODUCTION	
1.1 Introduction	1
1.2 Background	2
1.3 Rationale	4
1.4 Research problem	4
1.5 Research question	5
1.6 Significance of Study	5
1.7 Aim	5
1.8 Objectives	5
1.9 Outline of Chapters	6
Chapter 2: LITERATURE REVIEW	
2.1 Introduction	7
2.2 Socio-cultural Factors	7
2.3 Individual Factors	9
2.4 Health Service Provider Factors	12
2.5 Summary of Literature	14
Chapter 3: RESEARCH METHODS	
3.1 Introduction	15
3.2 Research Setting	15
3.3 Populations	16
3.4 Sampling and Data Collection	16
3.5 Research Instruments	18
3.6 Data Analysis	19
3.8 Ethical Considerations	19

3.9 Summary	20
Chapter 4: RESULTS	
4.1 Introduction	21
4.2.0 Findings from Women Living with HIV	21
4.2.1 Demographic Characteristics	21
4.2.2 Partnerships and Reproductive History	22
4.2.3 Sexual Activity, Contraception and Consistency of Condom use	24
4.2.4 HIV Disclosure, Perceived Stigma and Discrimination	26
4.2.5 ART Availability, Sustainability and Optimism	29
4.2.6 ART Status, PMTCT Experience and Knowledge	29
4.2.7 Direction and Strength of Health Worker Influence	30
4.2.8 Direction and Strength of Partner Influence	31
4.2.9 Strength of Family and Community Influence	33
4.2.10 Fertility Desires and Intentions	34
4.2.11 Fertility Desires and Fertility Intentions across Different Variables	35
4.2.12 Perceived Conception Counselling Needs	43
4.2.13 Inferential Analyses	43
4.3.0 Findings from Health Workers	45
4.3.1 Demographic and Professional Characteristics	45
4.3.2 Language and Communication on Sex and Reproduction	45
4.3.3 Self-reported Spontaneity with regards to Fertility Discussions	46
4.3.4 Attitudes towards the Fertility Desires of Women Living with HIV	47
4.3.5 Importance of Biological Health Measures	48
4.3.6 Stigma	50
4.4 Summary	50
Chapter 5: DISCUSSION, CONCLUSION & RECOMMENDATIONS	
5.1 Introduction	52
5.2.0 Discussion	52
5.2.1 Age	52
5.2.2 Employment	52
5.2.3 Education	53
5.2.4 Having Living Children and HIV Related Child Loss	53
5.2.5 Type of Relationship	54

5.2.6 Length of Relationship and Children from Relationship	54
5.2.7 Partner's HIV Status	55
5.2.8 Disclosure to Partner	55
5.2.9 Fertility desires of Partners	56
5.2.10 ART and PMTCT Knowledge, Experience and Optimism	56
5.2.11 Contraception and Condom use	57
5.2.12 Fertility after HIV Diagnosis	58
5.3 Provider Findings	59
5.4 Limitations of the Study	60
5.5 Conclusion	61
5.6 List of Recommendations	62
5.7 Further Study	63
References	65

Appendices

Appendix A: English Consumer Questionnaire
Appendix B: Oshiwambo Consumer Questionnaire
Appendix C: Afrikaans Consumer Questionnaire
Appendix D: Provider Questionnaire
Appendix E: Provider Consent Form
Appendix F: English Consumer Consent Form
Appendix G: Oshiwambo Consumer Consent Form
Appendix H: Afrikaans Consumer Consent Form

LIST OF FIGURES

1. Consistency of Condom use	25
2. Relative Frequency of Condom use After HIV Diagnosis	25
3. Perceived Reactions after HIV Disclosure	26
4. Perceived Attitudes of Family Members towards PLHIV in General	26
5. Perceived Attitudes of the Community towards PLHIV in General	27
6. Perceived Attitudes of Health Workers towards PLHIV in General	28
7. Opinion on- "Pregnant women on ARVs have less chances of infecting their babies during delivery"	29
8. Opinion on- "Pregnant women on ARVs have less chances of infecting their babies during breastfeeding"	30
9. Perceived Attitudes of Health Workers towards Positive Parenting	30
10. Strength of Health Worker Influence on Fertility Decisions	31
11. Perceived Attitudes of Male Partners towards Childbearing	31
12. Strength of Male Partner Influence on Fertility Decisions	32
13. Strength of Family Influence on Fertility Decisions	33
14. Strength of Community Influence on Fertility Decisions	33
15. Fertility Desires	34
16. Fertility Intentions	34
17. Prevalence of Fertility Desires and Fertility Intentions by Age	35
18. Prevalence of Fertility Desires and Fertility Intentions by Employment Status	35
19. Prevalence of Fertility Desires and Fertility Intentions by Education Level	36
20. Prevalence of Fertility Desires and Fertility Intentions by Having Children	36
21. Prevalence of Fertility Desires and Fertility Intentions by History of HIV related Child Death	37
22. Prevalence of Fertility Desires and Fertility Intentions by Relationship Status	37
23. Prevalence of Fertility Desires and Intentions by Type of Relationship	38
24. Prevalence of Fertility Desires and Intentions by Length of Relationship	38
25. Prevalence of Fertility Desires and Intentions by Child with Current Partner	39
26. Prevalence of Fertility Desires and Intentions by Disclosure to Partner	39
27. Prevalence of Fertility Desires and Intentions by HIV status of Partner	40
28. Prevalence of Fertility Desires and Intentions by Partner's Employment Status	40
29. Prevalence of Fertility Desires and Intentions by STI History	41

30. Prevalence of Fertility Desires and Intentions by PMTCT Experience	41
31. Prevalence of Fertility Desires and Intentions by ART Status	42
32. Prevalence of Fertility Desires and Intentions by Awareness of PMTCT Value of ARVs	42
33. Perceived Frequency in Initiating Fertility Discussions	46
34. Opinion on- Women living with HIV who <u>no children</u> should be encouraged to fall pregnant if they have such a desire	47
35. Opinion on- Women living with HIV who <u>already have children</u> should be encouraged to fall pregnant if they have such a desire.	48
36. Opinion on- The physical health of a woman including CD4 counts, viral load, and being on ARVs is more important than her right to choose to become pregnant.	49
37. Opinion on- The decision to become pregnant should be reached only after consultation with a health professional.	49
38. Opinion on- Becoming pregnant and delivering an HIV positive baby when fully aware of one's status is a sign of irresponsibility by the mother.	50

LIST OF TABLES

1. Age groups	21
2. Employment status	21
3. Education	22
4. Partnership status	22
5. HIV Status of Partner	23
6. Reproductive History	23
7. Methods of Contraception	24
8. Perceived Discrimination by Family due to HIV Status	27
9. Perceived Discrimination by the community due to HIV Status	27
10. Perceived Discrimination by Health Workers due to HIV Status	28
11. Position at the Clinic	45
12. Perceived Language Proficiency	46

1. INTRODUCTION

1.1 INTRODUCTION

Sub-Saharan Africa is at the epicentre of the HIV/AIDS epidemic which affects population demographics of affected countries in various ways. Most of this impact is through the epidemic's unparalleled mortality rates. Its biologic effect on the fertility of infected individuals has also been documented. How HIV affects the reproductive desires and intentions of both men and women is less clear and may change with time and place. Some settings may encourage childbearing for people living with HIV (PLHIV) while others may not. Intentional alterations in fertility adopted by large groups of the population could have significant demographic effects and in countries with generalised epidemics like Namibia, HIV potentially presents one such phenomenon. Any change in reproductive patterns among HIV positive women could have major population level implications. The fertility inhibitory effect of HIV is most likely to be felt as more asymptomatic HIV infected persons get to know their status through increased access to HIV counselling and testing (HCT). However, the expansion of HCT has gone hand in hand with an increase in antiretroviral therapy (ART) availability in the hardest hit countries. ART has undoubtedly improved PLHIV's quality of life and its efficacy may not only extend to their biologic capability to reproduce but could also increase their reproductive optimism, desires and intentions.

Over and above individual desires and ART optimism, many other factors potentially come into play when women living with HIV consider conception. In Africa, perhaps more than any other region in the world, becoming a parent extends beyond being a personal volition. It is a responsibility to spouse, clan and the community at large. The total fertility rate for Namibia in 2010 was 3.2, down from a figure of 5.2 in 1990 representing an average fertility drop of 2.4% per annum (UNICEF, n.d.). Recognised possible factors behind this trend include urbanisation, improved education, and greater involvement of women in the economy. The HIV epidemic may also be a chief player through its effect on increased foetal loss, reduced conception, and excess mortality among women of reproductive age. This chapter gives a background to the HIV epidemic in Namibia as well as issues pertaining to reproduction for PLHIV. It discusses the position of HIV positive women attending Katutura Health Centre Communicable Disease Clinic (KHC CDC) and other similar facilities with

regards to their reproductive habits, desires and the service provider environment. The essence of the research question is spelt out as well as the aim and objectives of the study.

1.2 BACKGROUND

Namibia, like its peers in southern Africa has borne the brunt of the HIV epidemic. It is among the worst HIV affected countries in the world with a prevalence of 18.8 % among pregnant women in public antenatal care (MoHSS, 2010). Namibia's HIV prevalence is highest in the 35-39 year olds at 29.7 % and is consistently above 20 % between the ages of 25 and 49 (MoHSS). The reproductive age groups, particularly women, are worst affected. In Namibia, women and men are infected at a ratio of 3:2 (MOHSS, 2009). This is due to a combination of biological and socio-cultural factors. KHC CDC lies at the heart of Windhoek's Katutura Township. It is one of many state-run clinics dedicated to HIV treatment across the country. At the end of April 2012, KHC CDC was providing HIV treatment and care services to a total of 7540 active patients. Of this total, 81% are on ART. Women constitute 51% of the clinic's adult enrolment.

More than 80% of women infected with HIV globally are in their reproductive years (Delvaux & Nostlinger, 2007). It is inevitable that some of them will want to start families and in the case of those that are already mothers, have more children. An estimated 350 000 children were infected with HIV in Sub-Saharan Africa in 2010 and Namibia ranks among the 22 countries contributing 90% of the world's pregnant women living with HIV (WHO, UNAIDS & UNICEF, 2011). The country provides WHO recommended prevention of mother to child transmission of HIV (PMTCT) regimens to more than 80% of its HIV positive pregnant women population (WHO, UNAIDS & UNICEF). Although current PMTCT interventions impressively reduce the risk of mother to child HIV transmission, vertical transmission continues to account for almost all HIV infections in Children.

In settings of poor ART availability with high AIDS morbidity and mortality, PLHIV (who know their status) naturally avoid childbearing due to the high risk of HIV transmission to the child as well as the uncertainties surrounding the individual's health. However, the strides made towards universal access to ART in resource limited settings have changed the playing field. By the end of 2009 Namibia was providing ART to 84% of the people in need of it (MOHSS, 2010). Improved life expectancies and quality of life for PLHIV as well as reduced

rates of vertical transmission associated with ART has led to a 'near-normalisation' of the condition. While the prevention of unwanted pregnancies among HIV positive women is a cornerstone to effective PMTCT, PLHIV in Namibia are now better placed to express their sexual and reproductive needs and 'positive parenting' has come to the fore. On the flipside, ART providers in the country have been reported as only providing ART to women on provider controlled methods of contraception to ensure women living with HIV do not fall pregnant (Bell & Orza, 2006). A court battle is also currently underway between the state and women allegedly coerced into surgical sterilisation in the country's public hospitals on the basis of their HIV status.

ART service providers demand PLHIV to not only use a condom at every sexual encounter but to also use a second contraceptive method to make up for failure rates observed with typical condom use (dual contraception). The religious use of condoms by PLHIV is not only important for preventing unwanted pregnancies, sexually transmitted infections and new HIV infections but also optimises outcomes on ART through preventing HIV re-infection and the acquisition of resistant strains. With little access to assisted conception procedures, falling pregnant in resource limited settings implies repeated exposure to the hazards of unprotected sex. With regards to new HIV infections, PLHIV in serodiscordant partnerships come to mind as they inevitably expose their partners when childbearing is pursued. The occurrence of serodiscordance among couples ranges from 5% to 31% across the different countries in Africa (Beyeza-Kashesya, Ekstrom, Kaharuzza, Mirembe, Neema & Kulane, 2010). Perhaps the biggest concern for service providers when women living with HIV decide to fall pregnant is the real danger of antenatal and perinatal HIV transmission. This danger increases when the mother is; not on ART, poorly adherent or on a failing regimen. In the event of successful conception, evidence suggests that women with HIV have higher maternal morbidity and mortality than their HIV negative counterparts (Ronsmans & Graham, 2006). This is mostly due to an increased incidence of conditions such as post-partum haemorrhage, anaemia, puerperal sepsis, tuberculosis and malaria in this subpopulation.

When medical providers are aware of a woman's reproductive intentions, they can offer useful preconception counselling and care. For women living with HIV, this includes identifying risk factors for adverse pregnancy outcomes, optimising the mother's health before pregnancy, referral for early prenatal care and timely enrolment for PMTCT

(Finocchiaro-Kessler, Dariotis, Sweat, Trent, Keller, Hafees & Anderson, 2010). It is also crucial that known teratogenic drugs are excluded from ART regimens before conception as drugs such as Efavirenz are potentially most damaging to the foetus in the first weeks of pregnancy. Of the 3107 women on ART at KHC CDC, 25% are on an Efavirenz containing regimen. Providers can also help to minimise the dangers of unprotected intercourse by timing it to only coincide with the woman's fertile periods. The need for communication with healthcare providers on fertility issues for PLHIV cannot be over emphasised. KHC CDC is currently witnessing a high number of pregnancies among women living with HIV that are conceived without due medical advice.

1.3 RATIONALE

HIV clinicians and associated service providers have witnessed an evolution of patient attitudes with regards to sexuality and childbearing over the last decade. Hopelessness associated with previously unrestrained HIV/AIDS carnage has gradually been replaced by optimism emanating from wide ART availability even in the poorest countries. As life projects are re-assessed, many HIV positive women have decided to resume or commence childbearing. Even those surgically sterilised at the height of HIV associated morbidity, mortality and stigma have returned to ask for reversal. Some have gone on to suggest that they were coerced into the irreversible procedure. In this era of increased ART access and improved life expectancies, health-workers find themselves providing sexual and reproductive health services to PLHIV while competing with personal attitudes and unknown 'external' influences acting on their clients. This study attempts to shed light on these uncertainties as well as provider attitudes and practices in order to improve the reproductive health package provided to women living with HIV.

1.4 RESEARCH PROBLEM

In as much as childbearing for PLHIV carries potential risks to the parents and child, the issue of reproductive options for HIV positive women is a sensitive rights issue. PLHIV have the right to reproduction. The right to choose to become pregnant must however be accompanied by a reciprocal responsibility to seek accurate information that is in the best interests of the individual, the partner and the unborn child. Access to factual information does not unilaterally influence fertility intentions and a plethora of other factors come into play when childbearing decisions are made by women living with HIV. Some of these factors

may even determine the decision to engage a service provider for reproductive advice in the first place. Against this background, we do not know the extent of fertility desires and intentions among women living with HIV enrolled at KHC CDC nor do we know the factors influencing childbearing decisions among these women.

1.5 RESEARCH QUESTION

What are the factors influencing fertility decisions among HIV positive women enrolled at KHC CDC?

1.6 SIGNIFICANCE OF STUDY

Despite extensive studies elsewhere, there is a relative paucity of literature on reproductive desires and intentions of women living with HIV in Namibia. This study attempts to fill that void. It will examine the nature of sexual and reproductive health services offered to women in HIV care clinics in light of their desires and socio-cultural context. The nature and strength of inter-linkages between the fields of HIV care and sexual and reproductive health in Namibia are scrutinised. The integration of family planning and HIV services has long been called for based on the assumption that women living with HIV want to (or ought to) avoid childbearing. This study empirically informs such thinking. Knowledge generated may be useful in advocacy, policy formulation and programme implementation in the dynamic world of HIV management in Namibia and other resource limited settings. The study hopes to benefit HIV care providers, reproductive health service providers and most importantly-women living with HIV, their partners and offspring.

1.7 AIM

To determine the factors influencing childbearing decisions among HIV positive women in Windhoek's Katutura Township so as to improve sexual and reproductive health messages and services for PLHIV attending KHC CDC.

1.8 OBJECTIVES

- To identify existing knowledge on factors influencing childbearing decisions among HIV positive women in sub-Saharan Africa.
- To establish the attitudes of health workers and the nature of reproductive health messages disseminated to PLHIV at KHC CDC.

- To establish the factors related to fertility desires and intentions among HIV positive women attending KHC CDC.
- To make recommendations on how reproductive health services for HIV positive women can be improved.

1.9 OUTLINE OF CHAPTERS

The next chapter will dwell on relevant literature on fertility desires and patterns among PLHIV in resource limited settings. Emphasis is on Sub Saharan Africa. Chapter three gives an insight into the research methods utilised in the study. It describes the research setting, philosophy, design, population, sampling methods, measuring instruments, data collection and data analysis methods. The results are presented in the fourth chapter followed by a discussion and conclusion with recommendations from the study's findings in the fifth and final chapter.

2. LITERATURE REVIEW

2.1 INTRODUCTION

This section explores existing literature on factors that influence fertility decisions among women living with HIV. It talks to their socio-cultural environment as well as the nature of their relationships with health service providers. As much as it is difficult to separate individual fertility motivators from family, culture and socialisation, an attempt is made to examine some personal issues. The focus of this literature survey is on women living with HIV in Sub-Saharan Africa. Uganda and South Africa feature prominently in this review due to the numerous studies conducted on this topic in these two countries. To paint a broader picture of the existing knowledge on factors influencing childbearing decisions among HIV positive women in sub-Saharan Africa, a deliberate attempt has been made to include work from elsewhere on the sub-continent. Unfortunately, there is a dearth of information on the fertility choices of Namibian women living with HIV.

2.2 SOCIO-CULTURAL FACTORS

Childbearing is of great importance in most parts of the world. It assumes even greater importance in traditional African communities where it is an 'expected return' from marriage. Motherhood comes with elevated social status and relationship security not to mention extra hands to help in the fields. Children guarantee lineage continuity and offer hope for future economic emancipation. Childlessness is often met with social stigmatisation, isolation, financial deprivation and even violence (Akande, 2008). The importance of fertility to women in resource limited settings cannot be over-emphasised and HIV positive women are not spared from the community's expectations as their status is often not public knowledge. In Namibia the situation is no different and women with many children are accorded a higher social standing than those without. Children are desired even if they are born with HIV (SAfAIDS, 2009). Culture exerts a direct fertility stimulus on women living with HIV. It also indirectly influences them through its effect on the desires and beliefs of their partners and other close family members. In a study among serodiscordant couples in Kampala, Uganda, 55% of the participants reported that their relatives wanted them to have a child (Beyeza-Kashesya, Ekstrom, Kaharuza, Mirembe, Neema & Kulane, 2010). This pressure from relatives was however based on their ignorance of the couple's HIV situation.

There is a sharp turnaround in attitudes in the event that a woman's HIV status is known or suspected. In such cases, being sexually active is widely condemned and childbearing is deemed irresponsible. PLHIV are largely viewed as vectors of disease who risk infecting their partners and 'innocent' offspring. They also stand accused of burdening others to raise orphans when they die. A study conducted in Cape Town, South Africa suggested that society generally frowned upon HIV positive people who decided to have children. This stigma driven disapproval counterbalanced the strong stimulus for motherhood applied to the general population in some of the study's participants (Cooper, Harries, Myer, Orner, Bracken & Zweigenthal, 2007). Findings by Beyeza-Kashesya et al (2010) in Uganda also agree with this verdict. In this study among serodiscordant couples, 82% of the participants who reported that their relatives wanted them to conceive felt that this position would change if HIV status was revealed. It must however be noted that HIV associated stigma does not always discourage childbearing among HIV positive women but may also have a stimulatory effect. The high suspicion of HIV infection that comes with null parity and the resulting community enacted stigma may lead HIV positive women to choose to fall pregnant (Cooper et al). The increased chances of delivering and raising a HIV negative baby through PMTCT interventions certainly encourage such thinking.

The disclosure by a woman of her HIV positive status to a male partner would be expected to come with a reduction in spousal pressure to conceive- regardless of his own status. Existing literature however suggests otherwise. Findings among 1092 HIV positive men and women in Uganda revealed that 42% of the participants were sexually active and 18% desired to have more children. However, fertility desires were almost four times more prevalent among the men than women with rates of 27% and 7% respectively (Nakayiwa, Abang, Packel, Lifshay, Purcell, King, Ezati, Mermin, Coutinho & Bunnell, 2006). Though this study was not specifically done on couples, it is clear that HIV positive men in the target group were less inhibited by the HIV diagnosis to have children than female participants. In an Ethiopian study with 458 married couples living with HIV, 18% of the participants expressed childbearing desires but the men were found to be twice more likely to want children than women (Getachew, Alemseged, Abera & Deribew, 2010).

In another study in Rakai, Uganda, a significant proportion of women participants reported that it was their spouses that desired to have children and not the women themselves (Makumbi, Nakigozi, Reynolds, Ndyanabo, Lutalo, Serwada, Nalugoda, Wawer & Gray, 2010). Diverging from this trend, Yeatman (2009) established that a HIV diagnosis reduced the fertility desires of men as much as it did that of women. This was after a longitudinal study conducted in rural Malawi among married and previously married men and women. Participants in this study were mostly from older age groups, already with children and this could have negated the gender related differences in fertility desires evident in the younger populations targeted by other studies. The findings of Yeatman aside, literature generally suggests that HIV infected men are less inhibited by a HIV diagnosis than women and continue to desire fatherhood. Nevertheless, their fertility intentions are to a lesser extent than their HIV negative counterparts (Sherr, 2010). HIV stigma, the stigmatisation of infertility and sub-fertility, the relatively uninhibited fertility desires of HIV positive men and culturally enshrined male dominance leaves women living with HIV in a difficult position.

Serodiscordance among couples in sub-Saharan Africa is quite common and rates range from 3 - 20 % in the general population to over 60% among married or cohabiting PLHIV (Kairania, Gray, Kiwanuka, Makumbi, Sewankambo, Serwadda, Nalugoda, Kigozi, Semanda, & Wawer, 2010). HIV positive women in such relationships find themselves attempting to appease their HIV negative partners while at the same time trying to avoid HIV transmission in environments in which safe conceptions methods are mostly inaccessible. Beyeza-Kashesya et al (2010), in their study involving serodiscordant couples in Uganda, found that 26% of partnerships in which the woman was positive went on to have children after learning of the HIV status and disclosure. Approximately 64% of these couples reported still wanting more children. There were no statistically significant differences in actual fertility or reported desires after HIV diagnosis and disclosure between 'woman positive' and 'man positive' serodiscordant couples in this study. HIV positive women in discordant relationships face a unique set of challenges but fertility volitions and childbearing among them remains significant.

2.3 INDIVIDUAL FACTORS

Available literature suggests that women living with HIV generally exhibit childbearing desires and behaviour that is different from other women. According to demographic and

health survey data from Lesotho, Swaziland, Zambia and Zimbabwe, knowledge of one's positive HIV status is strongly associated with an attempt to limit family size (Johnson, Akwara, Rutstein, Bernstein, 2009). The same data shows that HIV positive women are more likely to use condoms than their HIV negative counterparts.

Motivation to avoid pregnancy among PLHIV appears to differ depending on gender. In rural Malawi, HIV positive women wished to avoid falling pregnant mostly because they were concerned of the potential effect of the pregnancy on HIV disease progression and their personal health while men were mainly inhibited by their perceived bleak personal life expectancy as well as for their offspring (Yeatman, 2009). It is worth noting that this study was carried out at a time when PMTCT and ART were still being introduced in Malawi. Beyond these motivations, several other individual factors have been associated with avoiding reproduction. The two major factors established by a study conducted in Cape Town, South Africa were a previous history of an infected baby and the fear of child and/or partner infection (Cooper et al, 2007). A larger study done with a sample of 400 HIV positive men and women in Uganda cited older age of the respondent, being single and a history of child death as the major factors influencing HIV positive women to avoid pregnancy (Kakaire, Osinde & Kaye, 2010). In Ethiopia, a study conducted among married couples found that participants with a HIV negative partner were 63% less likely to desire children while those ignorant of PMTCT and those with less financial income also wanted to avoid pregnancy (Getachew et al, 2010).

Not all HIV positive women wish to avoid pregnancy. In a study conducted in Nigeria with a sample of 262 HIV infected men and women, 75.6% were sexually active and 62.2% of them were not using condoms. Despite the fact that 74% of the participants were parents to living children, 71.4% indicated their intention to have children (Chama, Morrumpa & Gashau, 2007). In South Africa, Khanyisa (2010) conducted a survey among HIV positive women with babies between the ages of 3- 6 months in Mpumalanga. It revealed the factors associated with further fertility desires as having fewer children, having a current partner who was aware of his status and an unknown HIV status of the infant. Another study done in the Eastern Cape identified youthfulness and the woman's knowledge of PMTCT as positively influencing the desire to fall pregnant (Peltzer, Chao, & Dana, 2009). Beyeza-Kashesya et al

(2010) also suggest that being free of illness in the recent past (previous six months) is also associated with elevated fertility desires.

Being symptom free has been associated with increased fertility volitions and it would be easy to assume that people on ART will want to have children due to their brighter health outlook. However, current evidence around this line of thinking is not unanimous. A study in rural Uganda compared the fertility desires of women on ART versus those of women living with HIV but not yet on treatment. Results suggested that there were no statistically significant differences in childbearing desires between the two groups and ART had no major bearing on fertility desires (Kipp, Heys, Jhangri, Alibhai & Rubaale, 2011). Kakaire et al (2010) also came to the same conclusion after conducting a survey in South-western Uganda. A possible explanation to the findings of these two studies is that ART in Uganda is provided to patients with low CD4 counts (<200 cells/ml). This group of patients has generally experienced deteriorating health prior to ART commencement and this may have negated any possible increase in fertility desires generated by being on ART. Alternatively and along with other possible country specific factors, these findings might reflect a paucity of knowledge on the protective value of ART among patients in that setting. A different perspective is offered by another study conducted in rural Uganda in which ART use was associated with intentions to have children in the future (Maier, Andia, Emenyonu, Guzman, Kaida, Pepper, Hogg & Bangsberg, 2009). ART use was however not associated any actual increased fertility at the time perhaps reflecting that desires were yet to evolve to actual childbearing.

The dissociation of ART status and fertility desires and intentions described by Kipp et al (2011) as well as by Kakaire et al (2010) also appears to diverge from the findings of a South African study in which the fertility desires of female participants were directly proportional to the duration of time the woman was on treatment (Myer, Morroni & Rebe, 2007). Though this finding could simply imply a relationship between fertility desires and time since HIV diagnosis it could also reflect an ART impact on fertility desires stemming from improving health status. This would be in line with the findings of an analysis conducted for seven African countries where the rates of pregnancies in women receiving ART were significantly higher than those in HIV positive women not on the treatment (Myer, Carter, Katyal, Toro, El- Sadr & Abrams, 2010). Actual pregnancy rates among women on ART were examined

rather than fertility desires or intentions and a number of biological and behavioural factors may have mediated the apparent relationship between ART and conception.

The improved physical and emotional health that results from ART may lead to partner acquisition, increased physical activity (including sex) and increased biologic ability to reproduce. Considering that 30% of pregnancies in sub-Saharan Africa are unintended (Myer, Carter, Katyal, Toro, El- Sadr, & Abrams, 2010), it is possible that ART could have affected pregnancy rates by acting through these mediating variables. In other words, the observed increased fertility among women on ART in this analysis could be independent of any impact of therapy on the women's actual desires and intentions. Other factors associated with increased fertility in this data analysis were being married or co-habiting, low educational attainment, younger age and high CD4 counts. Beyond the HIV treatment status of an individual, a study by Kaida, Lima, Andia, Kabakyenga, Mbabazi, Emenyonu, Patterson, Hogg and Bandsberg (2009) offers an insight into the link between fertility intentions and optimism generated by ART availability among women living with HIV in Uganda. They found that women living with HIV who reported the intent to have more children had much higher ART optimism than those who did not harbour fertility intentions. ART optimism was also associated with reported increased sexual activity as well as the non-use of condoms. Their sample included both women on ART and those on pre-ART care and ART optimism represented the positivity generated by ART availability regardless of the individual's current treatment status.

2.4 HEALTH-SERVICE PROVIDER FACTORS

Like the general public, health-workers are sometimes guilty of stigma and discrimination towards PLHIV. The frequency of devaluation and unjust treatment of HIV positive people by their supposed carers is startling. In a study conducted among healthcare workers in Tanzania, 47% of the respondents admitted to at least one incident of discriminatory behaviour towards PLHIV occurring among their colleagues (QAP Tanzania, 2007). Similarly, a large cross-sectional survey in four Nigerian states also revealed that 9% of health professionals had at one point refused to care for a HIV patient, 59% thought HIV patients should be cared for in a separate ward, 20% were of the opinion that PLHIV were mostly immoral and deserved the infection and 8% thought treating someone with HIV was a waste of resources (Reis, Heisler, Amowitz, Moreland, Mafemi, Anyamele & Lacopino,

2005). HIV related stigma in healthcare settings manifests in a number of ways as demonstrated by a study in Ethiopia. Practices there ranged from designating patients as HIV positive on bed charts, gossiping, verbal harassment, isolation and referring suspected cases for HIV testing without counselling (Nyblade, Stangl, Weiss & Ashburn, 2009). With regards to sexual and reproductive health, transgressions revolve around issues of confidentiality, disclosure, contraception, sterilisation and abortion. Emanating from provider stigma and discrimination is a range of potentially negative health consequences that include a reduction in the use of sexual and reproductive health services by PLHIV such as PMTCT, family planning and treatment of sexually transmitted infections.

Most health programmes serving women living with HIV are primarily focussed on preventing HIV transmission from the woman to her child or partner. Women's sexual and reproductive health rights are systematically neglected (Gruskin, Firestone, McCarthy & Ferguson, 2008). Within these health systems are workers whose attitudes towards PLHIV and childbearing are largely shaped by their biomedical concerns. According to the results of a study conducted among health workers in Cape Town, South Africa, concerns revolve around issues of clinical disease progression, CD4 counts and access to ART. The patient's right to choose was less prominent in shaping attitudes. (Harries, Cooper, Myer, Bracken, Zweigenthal & Orner, 2007). The quality of counselling skills displayed by healthcare personnel working with PLHIV is also questionable and the difference between choice and coercion on reproductive choices is often not well demarcated (Bharat & Mahendra, 2007). Attitudes aside, health care providers are also often ill-equipped to deal with sexual and reproductive health issues, particularly for HIV positive women. An example is the case of Zambia where only a few service providers were aware of the national policy of promoting dual protection (Bharat). Health promotion messages disseminated by health-workers there reflected this deficiency.

Women living with HIV present to their service providers with complex reproductive needs and uncertainties. Management of their situations requires a sensitive and accommodative approach but their interaction with health-workers is often characterised by power imbalances. These stem from providers' perceptions that their clients are unable to comprehend information, must not be sexually active and are undeserving of services rendered (Bharat & Mahendra, 2007). Judgemental attitudes emanating from service

providers' religious beliefs are also at play. PLHIV interact with service providers from a position of weakness resulting in poor communication on sexuality and reproductive health issues. A study among HIV positive men and women in Cape Town, South Africa showed that the majority of women participants had not bothered to talk about their motherhood desires and intentions with their HIV carers (Cooper et al, 2007). They feared harsh and uncompromising reactions. Those that decided to approach service providers described the counselling offered as not conducive to open discussion. The result of poor interaction between provider and client is demonstrated by another study in the Eastern Cape, South Africa, where the use of condoms and other contraceptives was low despite repeated counselling efforts on safe sex and family planning (Peltzer, Chao, & Dana, 2009). The HIV positive women in this study demonstrated a high desire for children which was probably not met in rigid counselling sessions. Finally, and on a more positive note, Beyeza-Kashesya et al (2010) established that 90% of serodiscordant couples in their study in Uganda believed that health-workers would provide them with support in the event of conception.

2.5 SUMMARY OF LITERATURE

A unique combination of individual and socio-cultural factors influence fertility decisions among HIV positive women in resource limited areas. These factors operate on a backdrop of generally unfriendly reproductive health services for PLHIV. While literature suggests that women living with HIV generally want children to a lesser extent than their HIV negative counterparts, the desire and intent is present and significant. This volition however appears to be less than that seen among HIV positive men. Recognised determinants of fertility desires and intentions among women living with HIV are multiple and complex. They include the woman's age, number of children, HIV status of children, history of child deaths, fear of HIV transmission, PMTCT knowledge, marital/cohabiting status, HIV status of partner, ART status, current health status, level of education, income level and health-service provider guidance. The level and nature of influence exerted by these factors varies across the different settings and populations of sub-Saharan Africa and may be in a continuous state of evolution reflecting the dynamic nature of the HIV epidemic. The next chapter describes the methodology used in this study.

3. RESEARCH METHODS

3.1 INTRODUCTION

The paradigm of this study is quantitative and it utilises a descriptive, cross-sectional survey design. It is referred to as such because it is centred on numerical data, dedicated to describing a particular phenomenon (fertility desires and intentions of HIV positive women) and data was collected during a single, relatively brief time period. By using the cross-sectional design, this study gives a snap-shot impression of the reproductive desires and intentions of women living with HIV enrolled at KHC CDC. Two distinct groups found at KHC CDC were targeted. Namely, women living with HIV enrolled at and attending the clinic for services and health workers based at the facility. Structured questionnaires were presented to participants from both groups in November 2012. This section talks to the setting in which the study was conducted, the populations, sampling methods, data collection and analysis as well as ethical considerations.

3.2 RESEARCH SETTING

The study's participants were recruited from KHC CDC, a state owned clinic providing free HIV care and treatment services to residents of Katutura Township in Windhoek, Namibia. This suburb houses a cross-section of inhabitants mostly comprising of the city's middle class, common labourers and informal traders. Among KHC CDC's patients are some of Windhoek's poorest dwellers including people from the ever growing informal settlements. Katutura hosts a multilingual society and languages spoken include English, Oshiwambo, Afrikaans, Otjiherero, Damara>Nama, Kwangali and Silozi. A great portion of the population speaks either one of English, Afrikaans or Oshiwambo. The clinic is staffed by full time state employees and a significant proportion of them are foreign nationals from East and Southern Africa. Language not only presents a communication barrier for these expatriates in their daily chores but often presents a challenge to their Namibian counterparts as well.

In line with current WHO recommendations, ART is offered to all HIV positive adults with a CD4 count of 350 cells/ml and below and/or symptomatic HIV infection (WHO clinical stage 3 or 4). Before October 2010, an immunologic threshold of 200 cells/ml was used. The clinic sees an average of 150 patients daily and follows a specific booking system. Persons in their

first six weeks of ART are seen on Mondays and those on treatment for more than six weeks but less than a year on Wednesdays. Patients on ART for more than a year are attended to on Tuesdays and Thursdays. Pre-ART patients are attended to from Monday to Thursday in a parallel clinic run by the facility's nurses. Fridays are reserved for persons initiating ART. Patients turning up on the wrong date and those presenting without an appointment are attended to outside this schedule and as required. Approximately 420 patients on ART and 60 on pre-ART care are booked for routine consultations weekly and 50% of these individuals are adult women.

3.3 POPULATIONS

The first target group was a population of approximately 3500 HIV positive women attending KHC CDC in 2012. To be eligible, the woman must have been enrolled at the clinic for at least 3 months, attended a minimum of 3 clinic visits and be between the ages of 18 and 45 years. Those who were pregnant or had undergone tubal ligation or hysterectomy were ineligible for the study. Persons deemed too ill to participate were also excluded.

The second target population consisted of 15 health workers based at KHC CDC during the study period. They comprised of medical officers, pharmacists, pharmacy assistants, nurses and community counsellors.

3.4 SAMPLING AND DATA COLLECTION

Two different sampling strategies were employed for the two target populations. For the first target population, participants were selected using a proportional stratified systemic sampling approach. Stratification is the separation of a population into mutually exclusive groups before selecting a sample (Christensen, Johnson & Turner, 2011). Systematic sampling on the other hand is a technique used to draw a representative sample from a population by determining a sampling interval (k), randomly selecting a starting point between 1 and k and selecting every k^{th} element thereafter (Christensen). When executed correctly, each individual in the population has an equal opportunity of selection into the sample. In this study stratification was on the basis of ART status and women were classified as being on ART or being on pre-ART care. A total of 50 women living with HIV and attending KHC CDC were recruited onto the study and they were comprised of 40 women on ART and 10 on pre-ART care to reflect the proportion of each sub-group in the target population. ART status was

deduced from the specific waiting areas used in the clinic and verified with medical records. Only ART naive persons were classified as being 'on pre- ART care' and all cases of treatment interruption were regarded as being 'on ART'.

Only women attending the clinic for a doctor/nurse consultation were asked to take part in the study. Starting from a randomly selected number between one and 11, every eleventh woman in the ART waiting area was asked to participate until the targeted number was met. Participants were selected from Monday to Thursday throughout the clinic's operating hours. The sampling process operated in the same pattern at all times regardless of refusals or the selection of ineligible individuals. The Pre-ART waiting area was sampled concurrently and starting from a randomly selected number between one and six, every sixth woman in the queue was approached for consent. The sampling intervals for the two strata (11 and 6) were arrived at by taking the number of women from the two strata expected/booked to visit the clinic in any two week period as the 'population size'. The resulting 'population size' to be sampled in a fortnight was an estimated 420 women on ART and 60 on pre-ART care. These figures were divided by the desired sample sizes for the two strata (40 and 10) to arrive at the adopted sampling intervals. The two week period was chosen as it was the time provisionally allocated for data collection by the investigator. Eight selected patients refused to be interviewed. Participants' files were marked to prevent individuals from being selected more than once.

Since the sample was drawn from persons booked to visit the clinic in a specific 2 week period, the sampling method only afforded equal probability of selection to women attending the clinic during this brief period. Those attending their visits outside this period had no chance of being selected. Despite this resource dictated flaw, the investigator believes the sample can still claim to be representative. Fridays were deliberately omitted as patients seen on this day typically undergo intensive counselling and treatment readiness assessments before starting ART. They may not have provided the most natural responses. These patients also fell between the two strata and would have been difficult to classify.

Due to the small size of the second target group, a census approach was adopted to avoid the sampling errors that typically result from sampling small populations. All the 15 health-

workers based at the clinic during the study period were asked to complete the questionnaire. A 100% response rate was achieved.

3.5 RESEARCH INSTRUMENTS

An interviewer-administered questionnaire (Appendix A) was used to collect data from the women living with HIV group. It was translated to Oshiwambo (Appendix B) and Afrikaans (Appendix C). A self-administered questionnaire (Appendix D) was employed for the health-workers. The two survey instruments were different.

The questionnaire for women living with HIV was adopted (with permission) from a study conducted by Myer et al (2007) in South Africa. It was adapted to meet this study's specific objectives and translated into Afrikaans and Oshiwambo. It explored socio-demographic variables, number of children, HIV status of children, HIV related child deaths, sexual activity, disclosure, perceived stigma and discrimination, partnership status, contraception and condom use, ART status, PMTCT knowledge and experience, fertility related interactions with service providers, perceptions on sustainability of HIV treatment and care and most importantly- fertility desires and intentions. Fertility desires and fertility intentions were probed separately with the former operationalized as the subjective feeling of wanting to fall pregnant at some point in the future and the later specifically referring to having a plan to conceive within the next two years. It is these two constructs that served as dependent variables at bivariate analysis. The rest of the factors explored by the questionnaire were for the purpose of sample description and estimation of population parameters. They also served as independent variables whose relationship with the two dependent variables was analysed and subjected to significance testing. The questionnaire was pre-tested on five HIV positive women attending Okuryangava clinic in Windhoek before being used for the study. The interviews lasted for an average of 20 minutes.

The health-worker questionnaire assessed participants' demographic characteristics, position at the clinic, experience working with HIV patients, language(s) spoken, perceptions on ART sustainability, attitudes towards 'positive parenting', frequency and spontaneity of fertility discussions with PLHIV, opinions on fertility trends among PLHIV, perceived barriers to discussing childbearing and perceived self-efficacy in providing sexual and reproductive health services for PLHIV. It also explored the importance attached to biomedical health

measures versus the right to reproduce and the levels of HIV stigma among the health-workers. By exploring these issues, the instrument sought to establish the nature of the service provider environment in which women living with HIV enrolled at KHC CDC make their fertility decisions. The questionnaire was provided in English only and was piloted on three service providers working at Okuryangava clinic.

3.6 DATA ANALYSIS

Data from the first target group was analysed using IBM SPSS version 20. It involved quantifying the characteristics of women living with HIV using descriptive statistics, mostly means and frequencies. The Chi-square test of association was used to determine the presence of associations between variables. The two dependent variables (fertility desires and fertility intentions) were tested against the different participant factors explored by the questionnaire using a significance level of $p \leq .05$ to determine empirical relationships.

Data from the service provider group was also analysed using the same software and approach. Service provider characteristics as well as practices and attitudes towards the sexual and reproductive health of PLHIV were examined using descriptive statistics. No tests for relationships were performed for this data set.

3.7 ETHICAL CONSIDERATIONS

Informed consent was obtained from all participants. The provider consent form was provided in English (Appendix E) only while the consumer form was provided in English (Appendix F), Oshiwambo (Appendix G) and Afrikaans (Appendix H). The right to refuse recruitment or withdraw at any point without consequence was clearly spelt out. Anonymity was assured through the non-use of participant identifiers and confidentiality guaranteed by storing data in a password protected computer only accessed by the investigator. Counsellors were available to desensitise participants experiencing discomfort from the research process. Permission to conduct the study was obtained from the Ministry of Health and Social Services (Namibia) through the Directorate of Policy, Planning and Human Resource Development's Research Unit. Approval was also granted by the University of Stellenbosch's Research Ethics Committee.

3.8 SUMMARY

This study was executed using quantitative research methods to describe the factors associated with fertility desires and intentions among HIV positive women enrolled at and attending KHC CDC in November 2012. Two groups were targeted; women living with HIV and health-workers found at the clinic. The first group was sampled using a proportional stratified systematic approach while a census approach was used to include all of the facility's health-workers to amass a total of 50 and 15 participants respectively. A structured interviewer-administered questionnaire was used for the first group and a self-administered questionnaire was adopted for the second. The two instruments were pre-tested and refined before the actual data collection. Data was collected over a two week period and was analysed using SPSS. The next section presents results obtained from the survey.

4. RESULTS

4.1 INTRODUCTION

This chapter presents results from the two surveys conducted on women living with HIV and service providers from KHC CDC.

4.2. FINDINGS FROM WOMEN LIVING WITH HIV

This section gives the characteristics of the women living with HIV group using descriptive statistics. Frequency tables, bar graphs and pie charts are used for illustration. Findings from tests for association are also provided.

4.2.1 Demographic Characteristics

The ages, employment status, and education levels of participants are shown in Table 1;

Table 1

Age groups

Age Group	Frequency	Percentage
20-24	4	8%
25-29	8	16%
30-34	9	18%
35-39	18	36%
40-44	11	22%

Most of the participants (36%) fell in the 35-39 year age group. The mean age was 34.2 years and the median age was 35 years. The range was 21-44 years.

Table 2

Employment Status

Employed	18
Unemployed	32

The majority of the participants (64%) were unemployed. A large proportion of those in employment were in low skill jobs such as domestic work and security.

Table 3

Education

Level	Frequency	Percentage
None	2	4.4%
Primary	15	33.3%
Secondary	26	57.8%
Tertiary	2	4.4%

Most of the participants had attended formal education and the majority (57%) had attended secondary school. Only 4.4% had been through tertiary education.

4.2.2 Partnerships and Reproductive History

Most participants (90%) were in a relationship at the time of the study and 92.7% of those in relationships had been in that relationship for longer than a year. 65.9% of the participants indicated that their partners were employed.

Table 4

Partnership Status

Status	Frequency	Percentage
No partner	10	20%
Has partner but not cohabiting or married	9	18%
Cohabiting	26	52%
Married	5	10%

The majority of participants (80%) were in a relationship. Low rates of marriage were displayed as only 10% of the sample was married and 52% were cohabiting.

Table 5***HIV Status of Partner***

Status	Frequency	Percentage
Positive	29	64.4
Negative	6	13.3
Unknown	10	22.2

Most of the participants in relationships (64.4%) reported that their partner was HIV positive but 13.3% had a serodiscordant partner. A high proportion (22.2%) did not know their partner's HIV status while 17% of the participants admitted that they had not disclosed their condition to their partner.

Table 6***Reproductive History***

No Children	2
Has Children	48

The majority of the participants were mothers to living children. Of those with children, 62.8% indicated that they already had a child with their current partner.

4.2.3 Sexual Activity, Contraception and Consistency of Condom Use

The majority of respondents (71.4%) were sexually active (had sex in the last 3 months) and 80% were on contraception. Methods used are illustrated in Table 7.

Table 7

Methods of Contraception

Method	Frequency	Percentage
Male Condom	42	84
Female Condom	1	2
Oral Contraceptive	6	12
Intra-uterine Device	1	2
2-month Injectable	8	16
3-month Injectable	10	20
Other Method	1	2

Most of the women interviewed (84%) were using condoms. Other popular methods were the 3-month injectable (20%), 2-month injectable (16%) and oral contraceptive pills (12%).

A high proportion (28%) of respondents admitted to being treated for a sexually transmitted infection (STI) after learning of their HIV status while 91.4% reported using a condom when they last had sex. The frequency of condom use in the recent past and the relative frequency of use after HIV diagnosis are illustrated in Figure 1 and Figure 2.

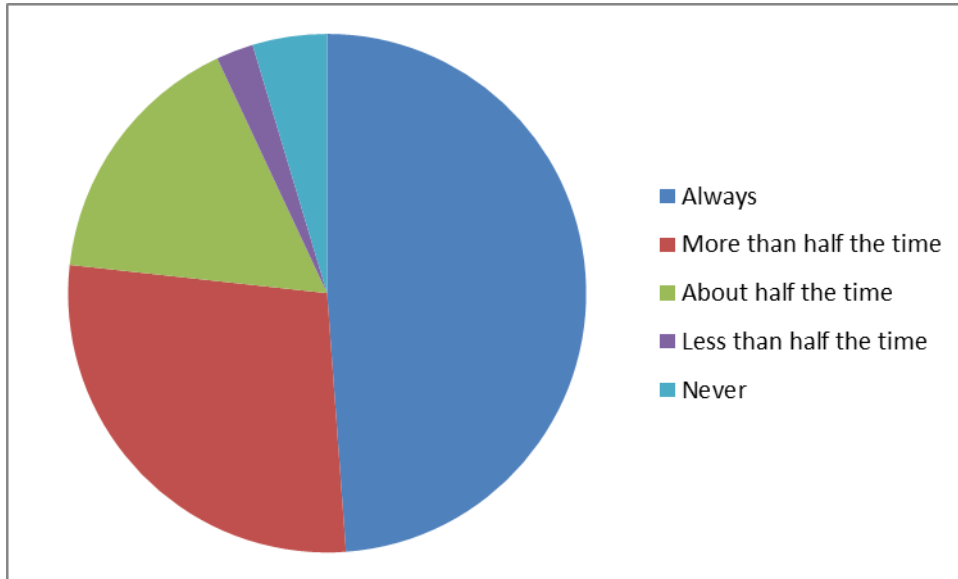


Figure 1: Consistency of Condom Use

Less than half of the sexually active participants (48.8%) indicated that they had used a condom at every sexual encounter in the past three months and 27.9% used condoms more than half the time. 16.3% used condoms about half the time while 2.3% used them less than half the time. 4.6% admitted to never using condoms at all during sex in the last three months.

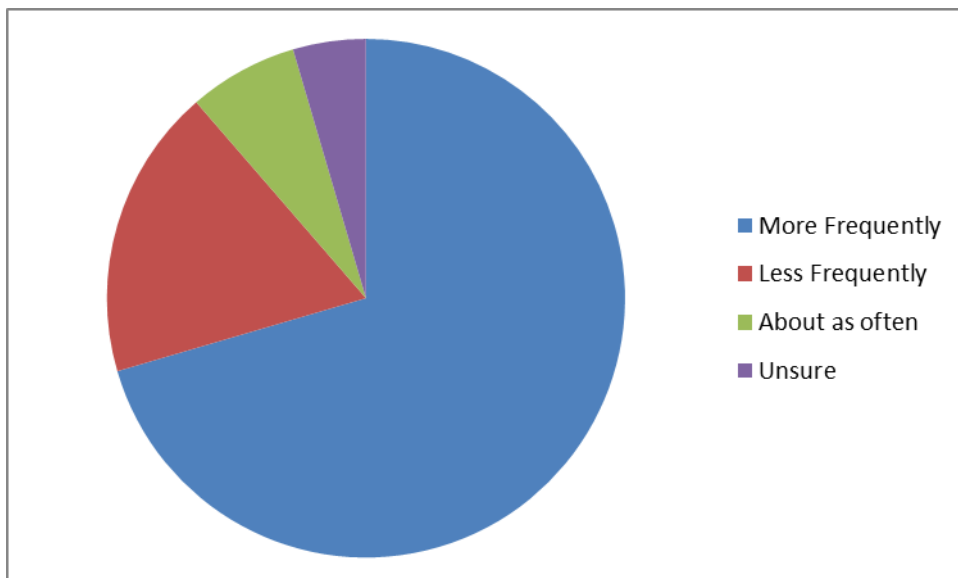


Figure 2: Relative Frequency of Condom use after HIV diagnosis

Condom use increased after HIV diagnosis among 70.5% of the participants whilst it declined among 18.2% of them. Approximately 6.8% of respondents reported no change in condom use and 4.5% were unsure of any change in their condom use behaviour post HIV diagnosis.

4.2.4 HIV Disclosure, Perceived Stigma and Discrimination

Most respondents (91.8%) indicated that they had disclosed their HIV status to people other than their partners. Disclosure to a sibling was most common (59%) while 27.8% had disclosed to a parent, 21.6% to a child, 22.2% to other relative and 14.3% to other persons.

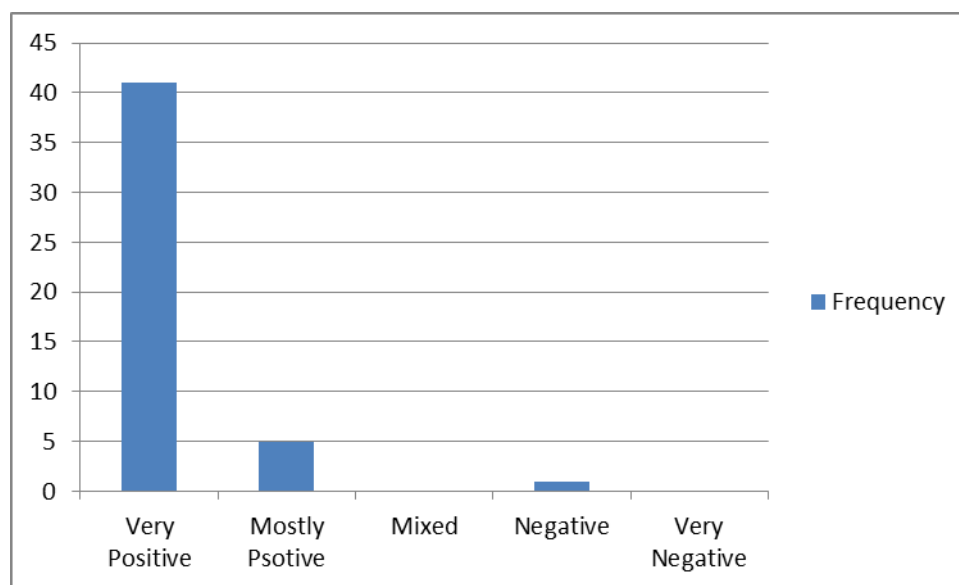


Figure 3: Perceived Reactions after HIV disclosure

The majority of respondents (87.2%) felt that the people they had disclosed to had reacted very positively while 10.6% of respondents felt that reactions were mostly positive. 2.1% thought they met negative reactions.

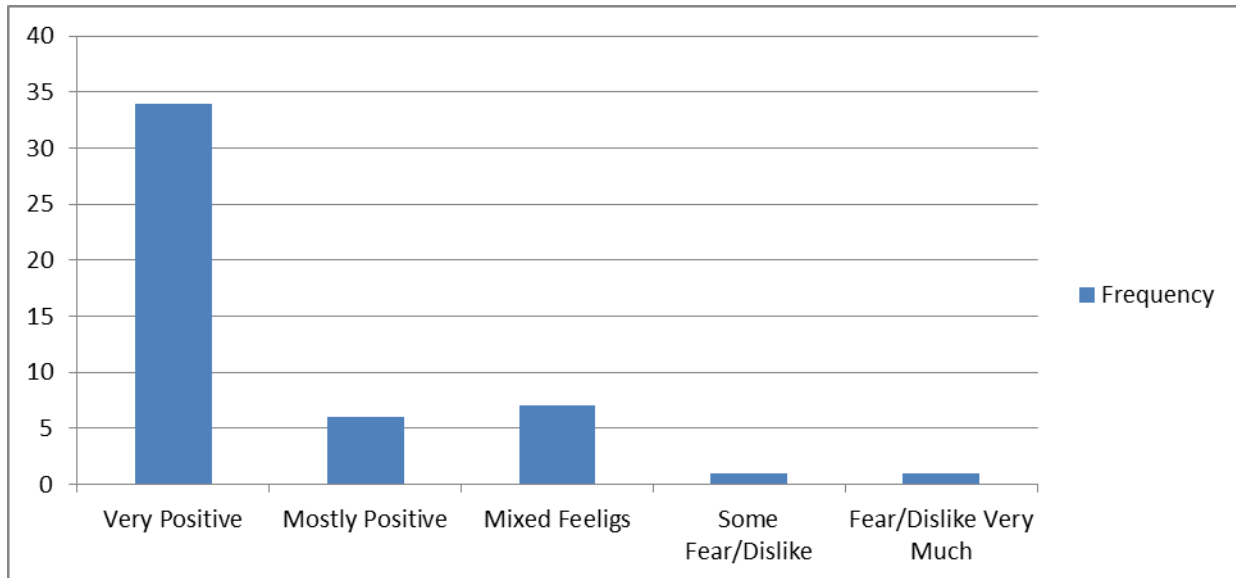


Figure 4: Perceived Attitude of Family Members towards PLHIV in General

Family members were largely viewed as non-stigmatising with 69.4% of respondents feeling that their families generally regarded PLHIV very positively, 12.2% felt attitudes were mostly positive and 14.3% had mixed feelings. Only a combined 4% of participants felt their families viewed people living HIV with some fear/dislike or feared/disliked them very much.

Table 8

Perceived Discrimination by Family Due to HIV Status

Yes	5
No	43

A high proportion of respondents (10.2%) felt their families treated them differently because of their HIV status.

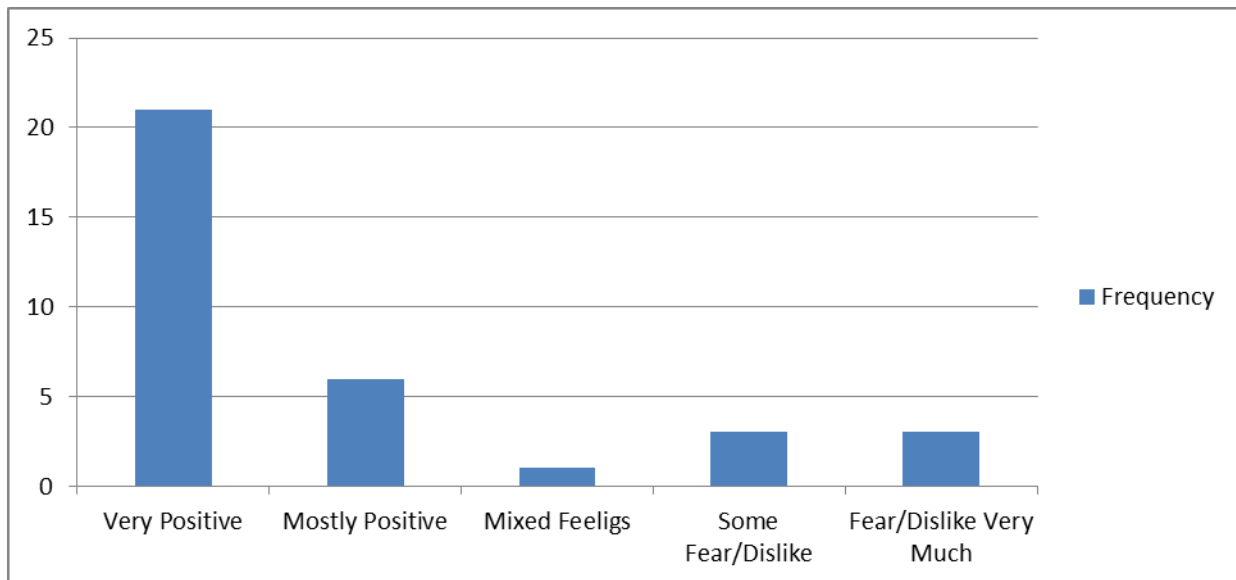


Figure 5: Perceived Attitude of the Community towards PLHIV in General

The community was perceived less favourably with regards to HIV stigma as only 43.8% of respondents felt that attitudes were very positive. A combined 12.6% felt PLHIV were viewed with some fear/dislike or were very much feared/ disliked by the community.

Table 9

Perceived Discrimination by the Community Due to HIV Status

Yes	15
No	33

Perceived discrimination from the community was much greater than perceived discrimination from the family due to HIV status as 30% of respondents felt the community treated them differently because of their HIV status.

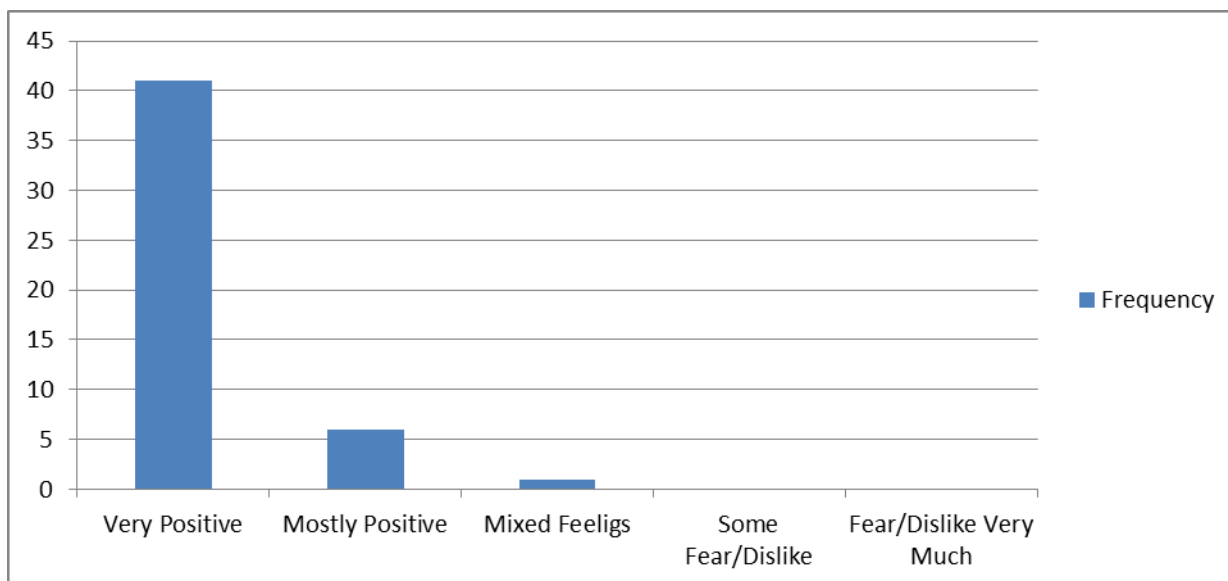


Figure 6: Perceived Attitude of Health Workers towards PLHIV in General

Health workers were viewed as the most accommodative to PLHIV as 85.4% of respondents felt that health workers generally showed very positive attitudes, 12.5% felt attitudes were mostly positive and 2.1% had mixed feelings. None of the respondents felt health workers feared or disliked PLHIV in any way.

Table 10

Perceived Discrimination by Health Workers Due to HIV Status

Yes	4
No	46

Only 8% of participants felt that health workers treated them differently from other patients on the basis of their HIV status.

In summary, health workers were viewed as least stigmatising and discriminating towards PLHIV in general followed by the participants' families. The wider community was viewed as being least tolerant.

4.2.5 ART Availability, Sustainability and Optimism

High levels of confidence in the capacity of the public health system to sustain HIV current care services were demonstrated. 98% of respondents felt that ART was available to all

people in need of it and 95.9 felt that the country's clinics would continue to provide treatment "for a long time to come". Levels of treatment optimism were also high as 98% of respondents felt that ARVs allowed PLHIV "to live as long as HIV negative people" and 89.4% of them felt that the availability of ARVs empowers PLHIV to have (more) children. An eye-catching 30% of the study's participants indicated that they had previously fallen pregnant while aware of their HIV status.

4.2.6 ART Status, PMTCT Experience and Knowledge

The bulk of the participants (82%) were on ART at the time of the study and 16% had previously taken ARVs for PMTCT. Understanding of the prophylactic benefits of ARVs at delivery and breastfeeding was low as illustrated in Figure 7 and Figure 8;

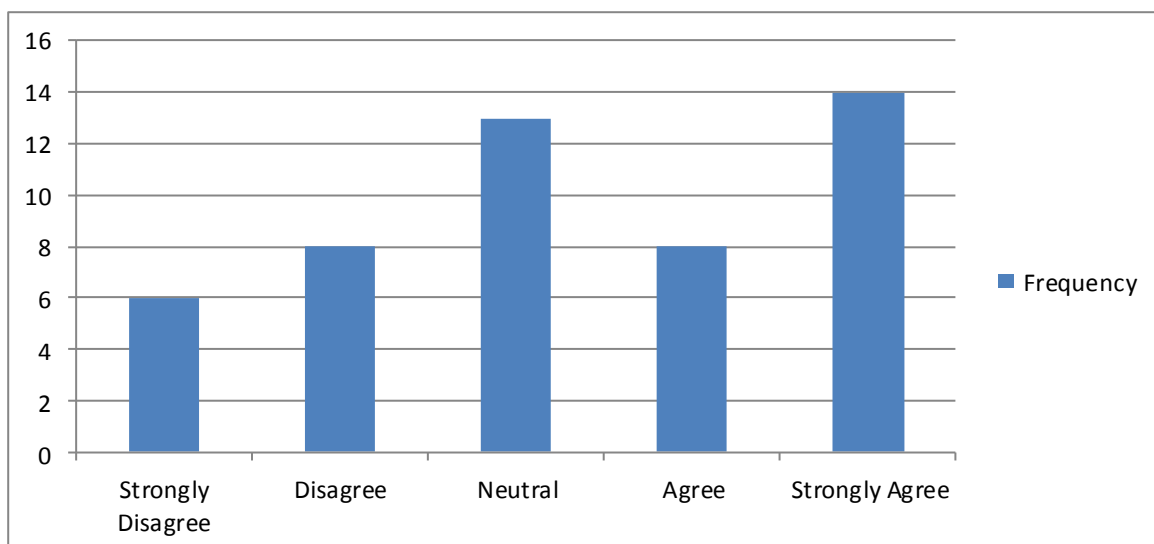


Figure 7: Opinion on- "Pregnant women on ARVs have less chances of infecting their babies during delivery"

Less than half of the respondents (16.3% agreed and 28.6% strongly agreed) knew that being on ARVs reduces chances of HIV transmission during child-birth. In total, 55.1% were either neutral or felt that ARVS did not offer any protection to the child at delivery.

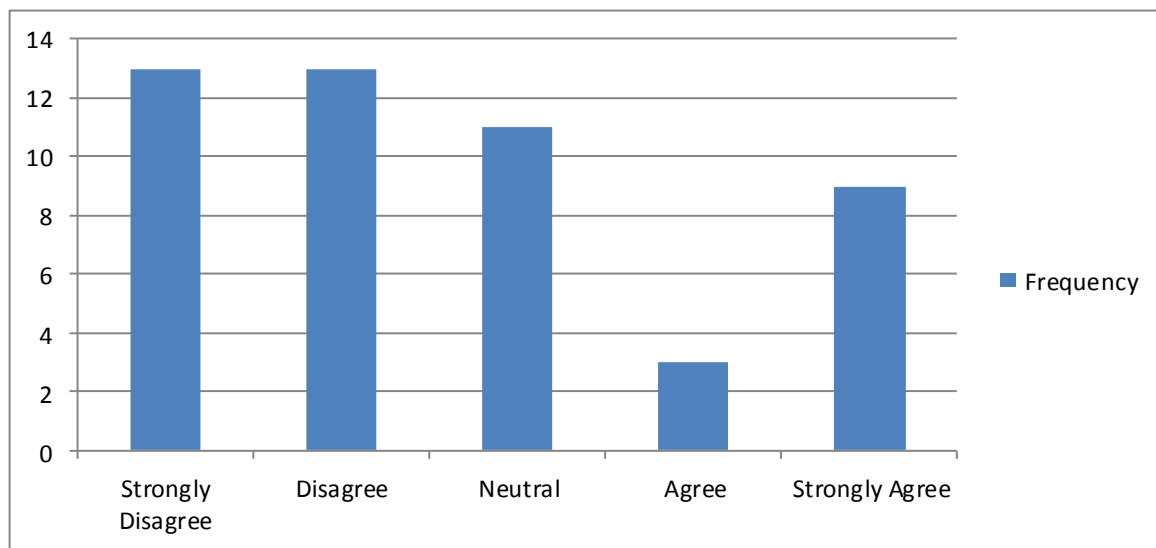


Figure 8: Opinion on- "Pregnant women on ARVs have less chance of infecting their babies during breastfeeding"

Only 24.5% (6.1% agreed and 18.4% strongly agreed) of respondents appreciated the protective value of ART during breastfeeding.

4.2.7 Direction and Strength of Health Worker Influence

A small proportion (36%) of the study's participants reported ever discussing childbearing with a health worker. Fertility discussions were mainly held with counsellors (44.4%) followed by nurses (27.8%) and doctors (22.2%).

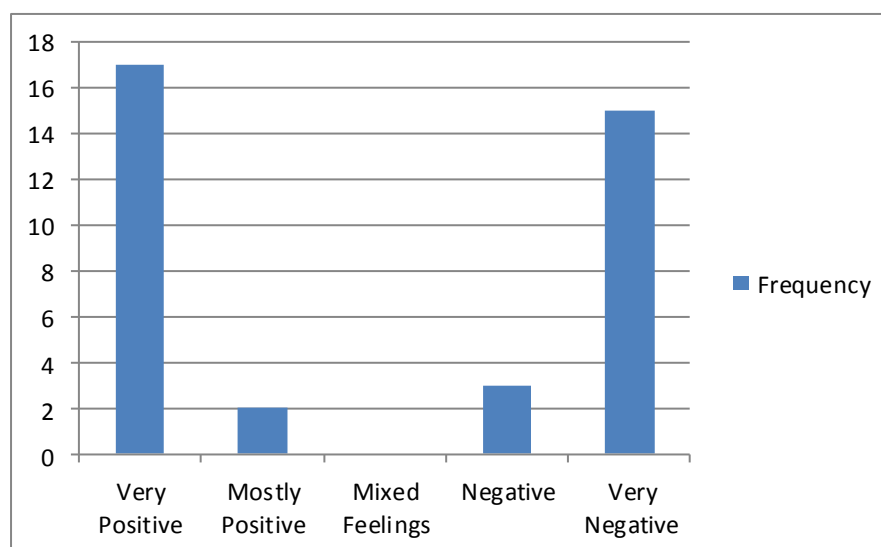


Figure 9: Perceived Attitudes of Health Workers towards Positive Parenting

While 45.9% of respondents felt that health workers were very open to the idea of PLHIV having children, 40.5% of them reported meeting very negative reactions from providers.

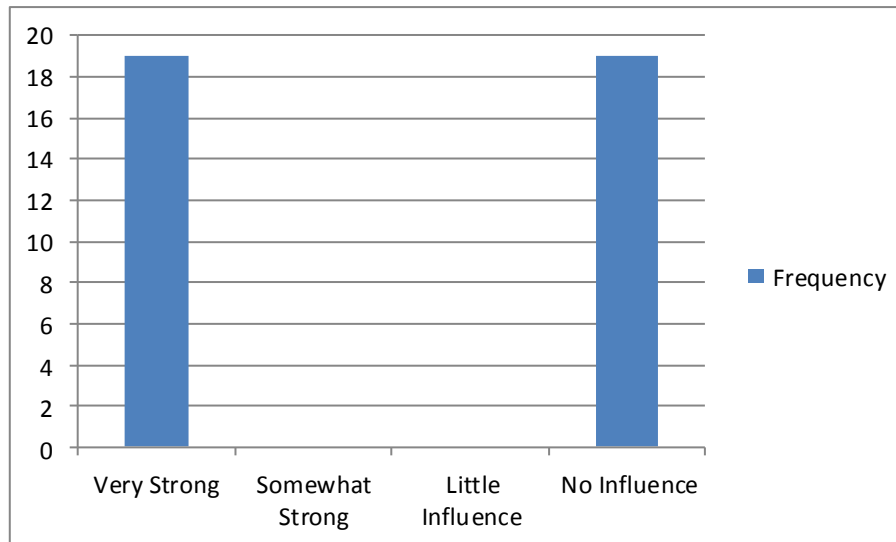


Figure 10: Strength of Health Worker Influence on Fertility Decisions

The influence of health workers on childbearing decisions was described as very strong by 50% of respondents and the other 50% attached no weight to health workers' advice.

4.2.8 Direction and Strength of Partner Influence

About half (51%) of the participants reported having discussed the topic of having (more) children in the future with their partner. They perceived their partners' position as follows:

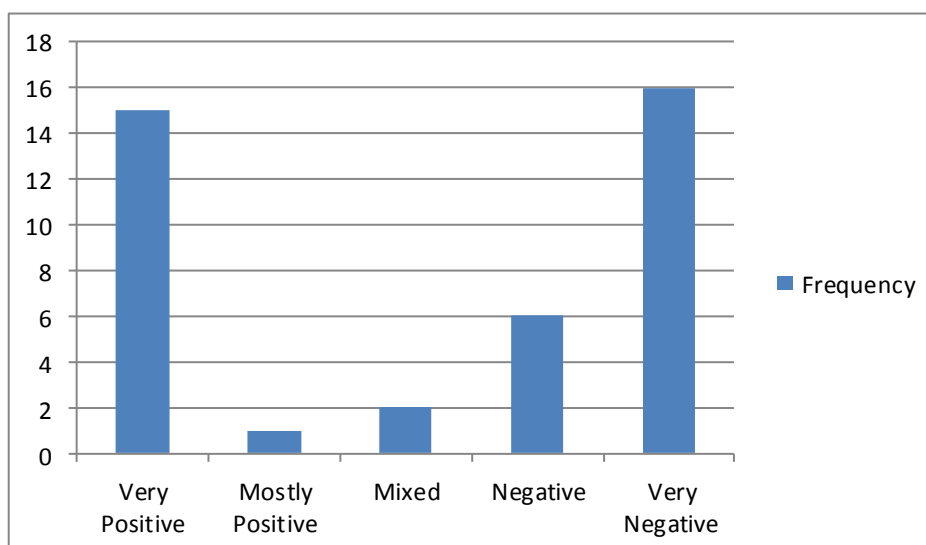


Figure 11: Perceived Attitudes of Male Partners towards Childbearing

Approximately 40% of respondents reported having partners with a positive stance towards childbearing but the majority (55%) said their partners viewed the idea negatively. A small proportion (5%) was not sure of their partner's position on the matter.

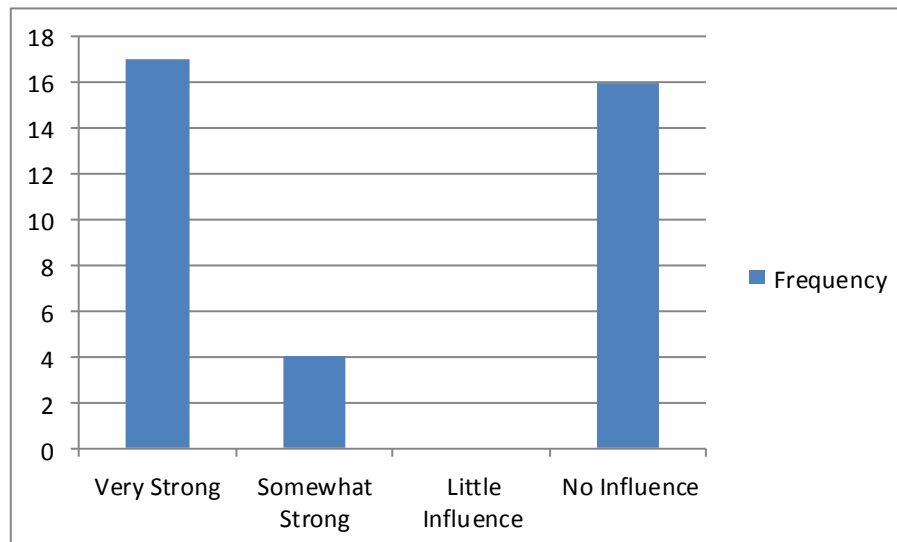


Figure 12: Strength of Male Partner Influence on Fertility Decisions

In total, 45.9% of those with partners indicated that their partners had a very strong influence on them with regards to fertility decisions while 43.2% said they totally disregarded their partners' position on fertility.

4.2.9 Strength of Family and Community Influence

The strength of family and community influence on childbearing was expressed as shown in Figure 13 and Figure 14:

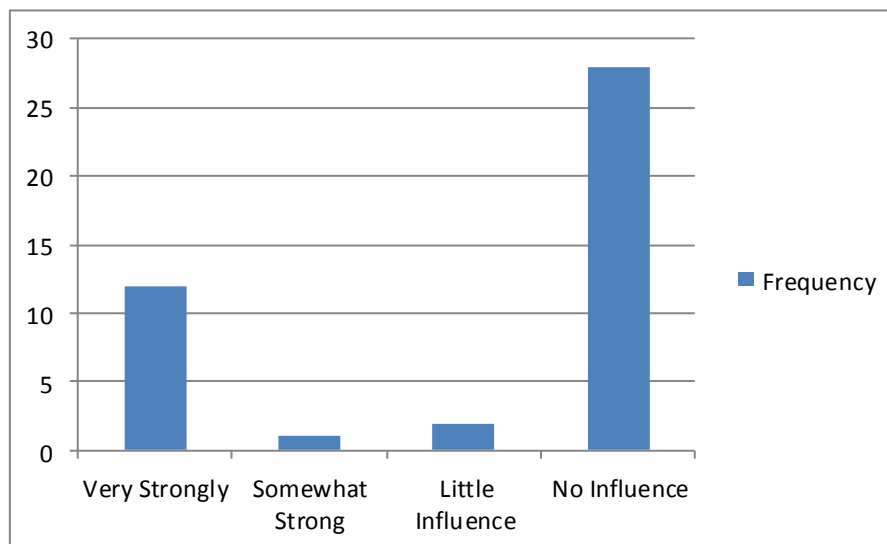


Figure 13: Strength of Family Influence on Fertility Decisions

The majority (65.1%) said they make their decisions regarding childbearing totally free of the influence of any family members while 27.9% reported that their fertility decisions were very strongly influenced by family opinion.

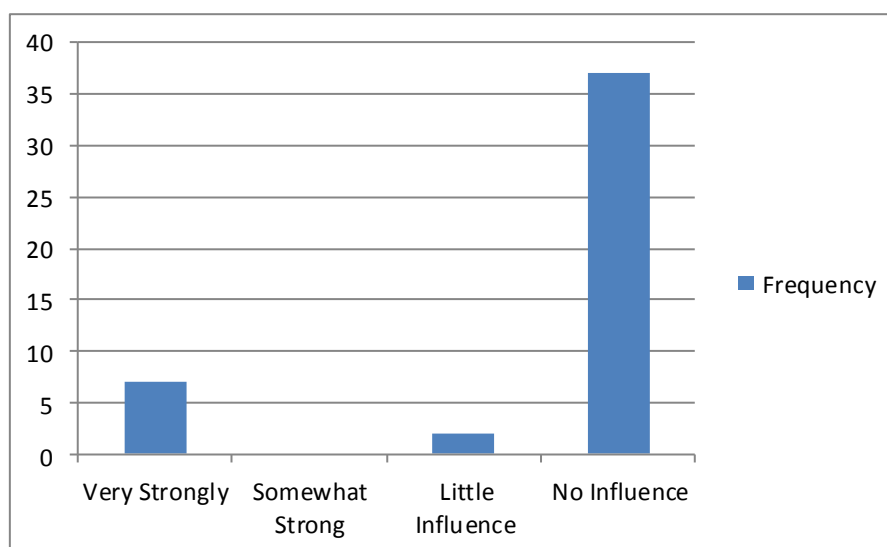


Figure 14: Strength of Community Influence on Fertility Decisions

Some of the respondents (15.2%) indicated a strong community influence on their childbearing decisions but most (80.4%) said they totally disregarded it.

4.2.10 Fertility Desires and Intentions

The fertility desires and intentions of the participants are illustrated in Figure 15 and 16.

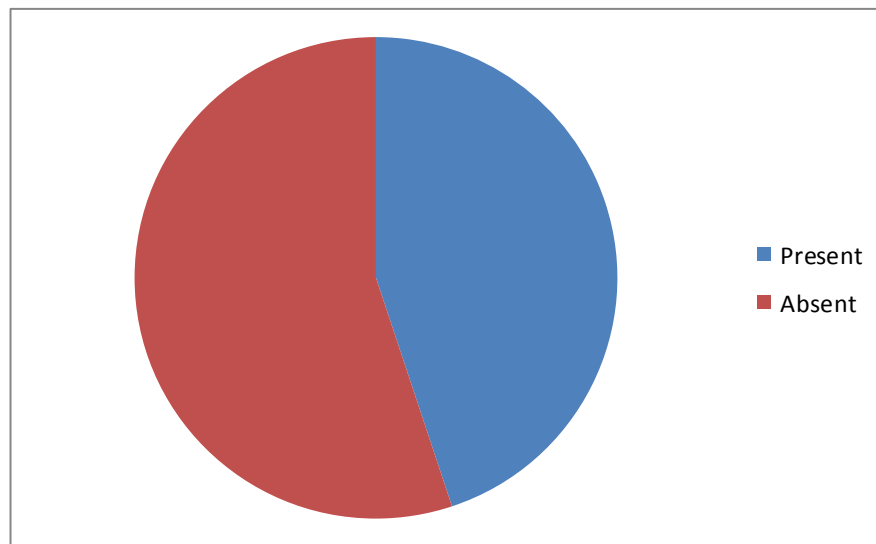


Figure 15: Fertility Desires

About 44.9% of the participants said they would want to have a baby at some point in the future.

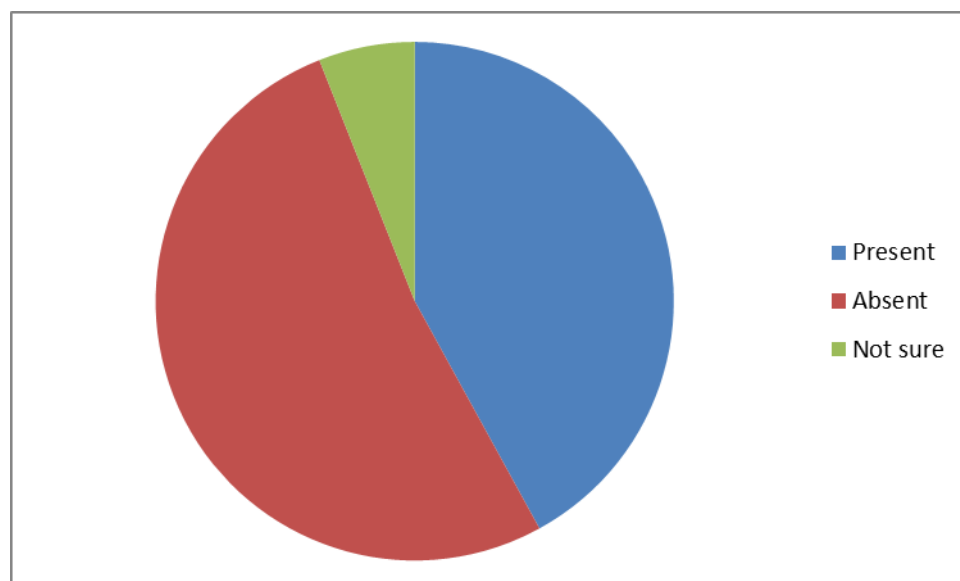


Figure 16: Fertility Intentions

In total, 42.0% of the participants intended to fall pregnant in the next two years.

4.2.11 Fertility Desires and Fertility Intentions across Different Variables

Differences in levels of fertility desires and fertility intentions with regards to the different categories of variables explored in the study were subjected to contingency table analysis. The rates of fertility desires and fertility intentions were recorded and are illustrated from Figure 17 to Figure 31.

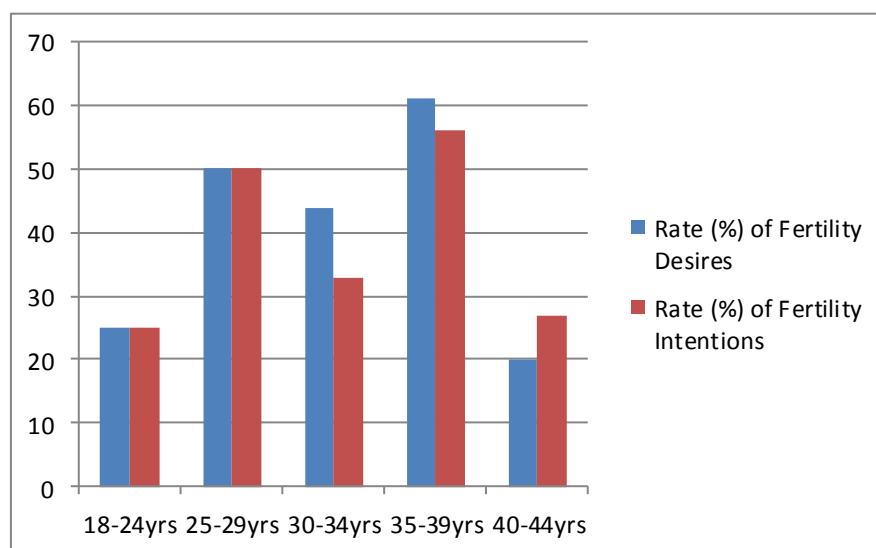


Figure 17: Prevalence of Fertility Desires and Fertility Intentions by Age

Fertility desires and intentions were most common between the ages of 25 and 39 years. Childbearing volitions and plans were lowest below the age of 25 and above 39 years.

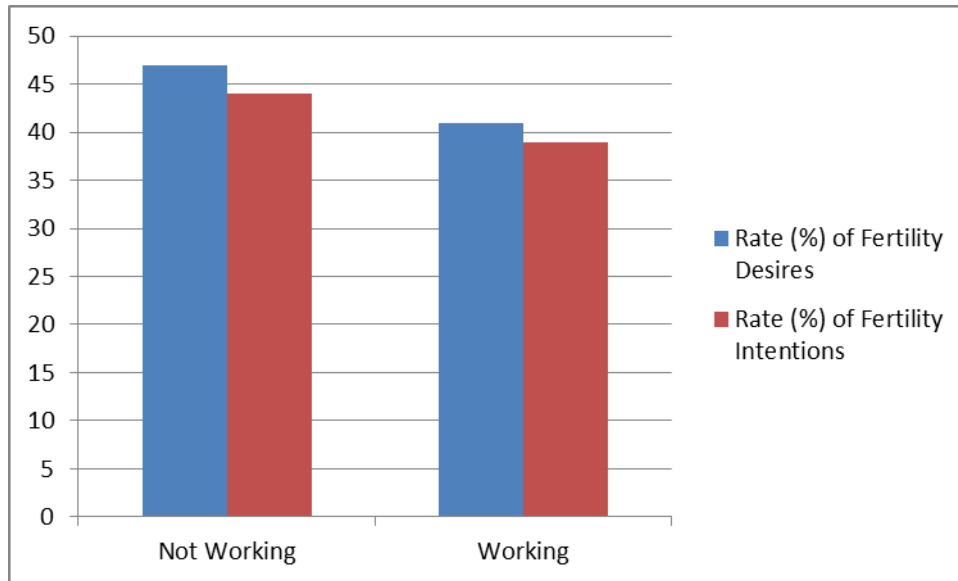


Figure 18: Prevalence of Fertility Desires and Fertility Intentions by Employment Status

Fertility desires and intentions were marginally higher for unemployed participants than for those in employment.

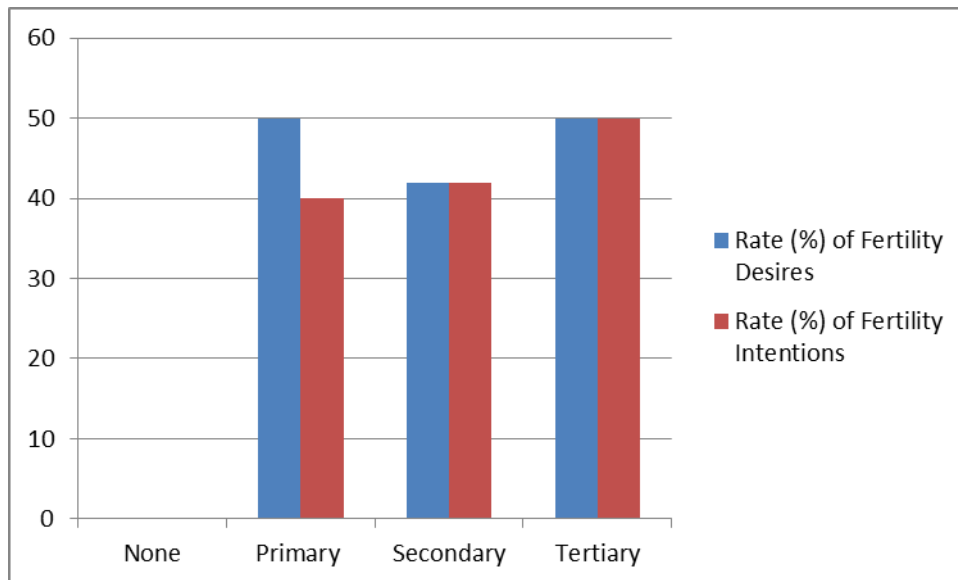


Figure 19: Prevalence of Fertility Desires and Fertility Intentions by Education Level

While there is no apparent association between fertility desires and level of education, fertility intentions seemed to increase with increasing level of education.

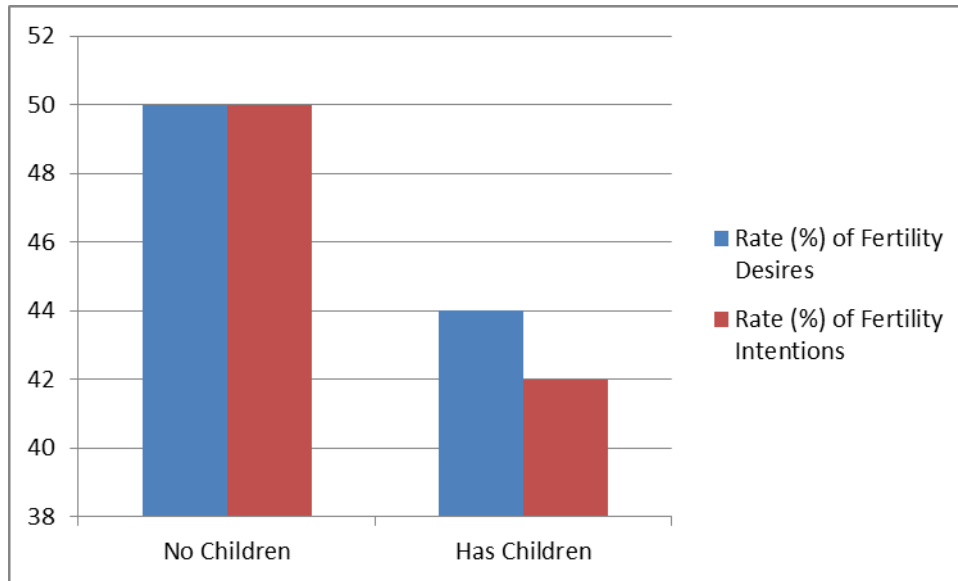


Figure 20: Prevalence of Fertility Desires and Fertility Intentions by Having Children

Fertility desires and intentions were higher among participants without children compared to those with living offspring.

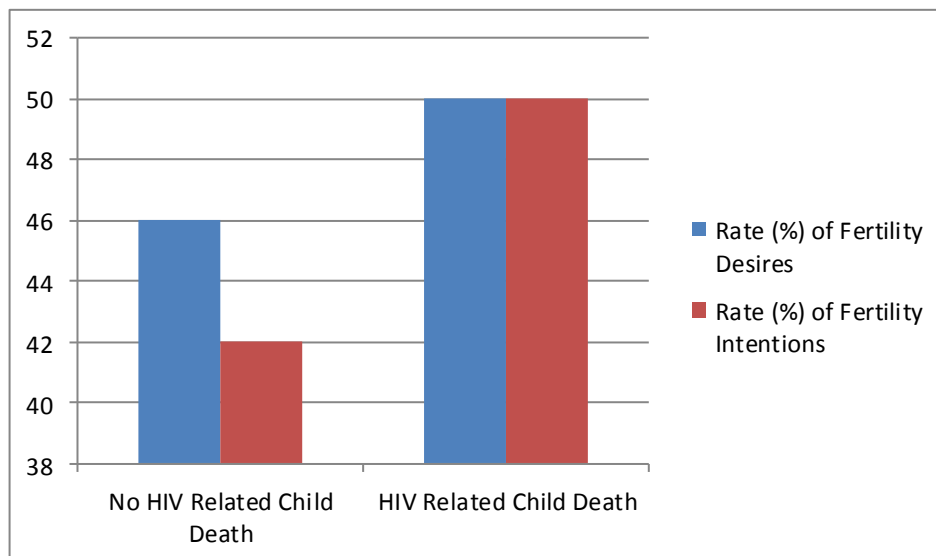


Figure 21: Prevalence of Fertility Desires and Fertility Intentions by History of HIV related Child Death

Fertility desires and Intentions were higher among women who had previously lost a child to an HIV related illness than those without such a history.

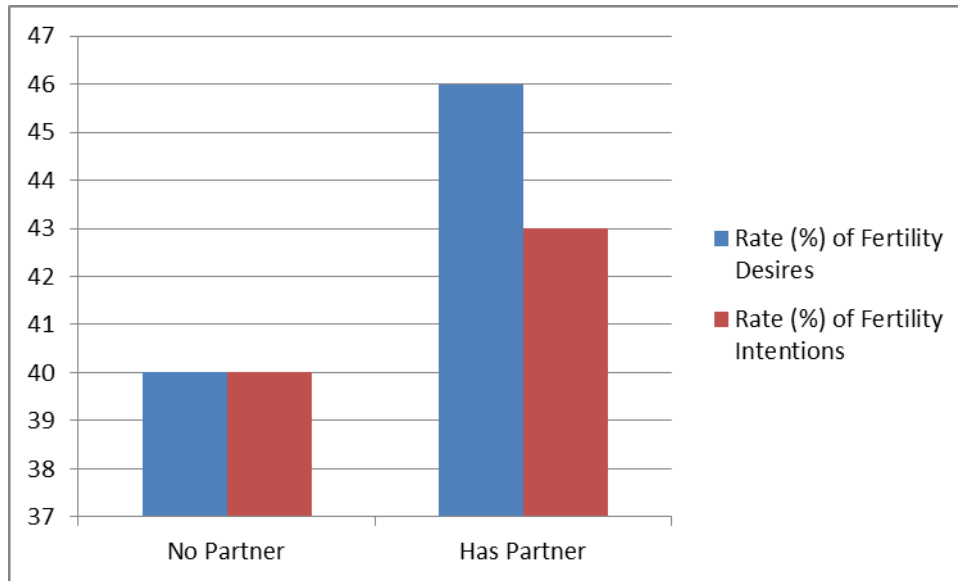


Figure 22: Prevalence of Fertility Desires and Fertility Intentions by Relationship Status

Participants in relationships seemed to be more likely to bear childbearing desires and intentions than those without partners.

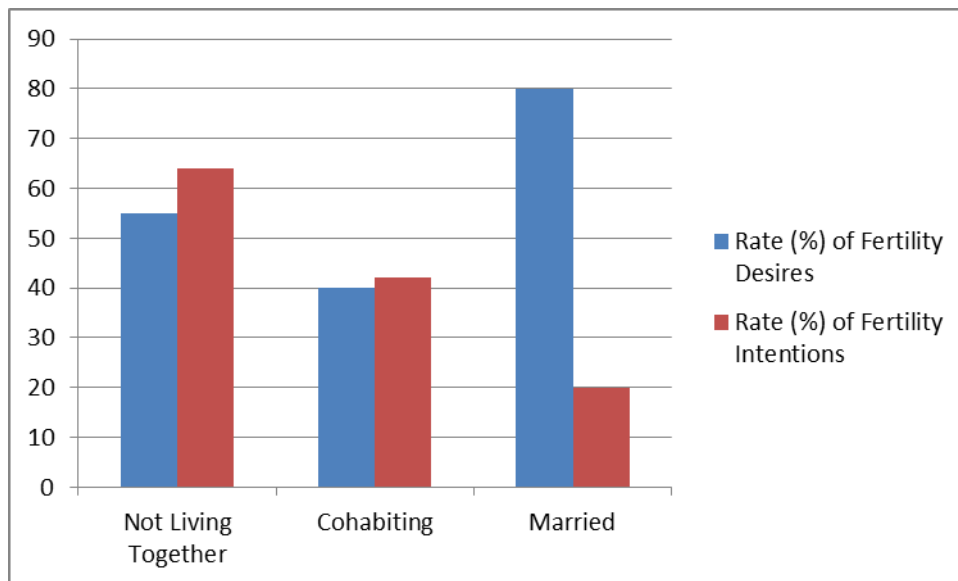


Figure 23: Prevalence of Fertility Desires and Intentions by Type of Relationship

Fertility intentions appeared to decrease with increasingly formal relationships. Intentions were highest among participants not married to or living with their partners and were lowest among married women. Desires were highest among married women but there seemed to be no discernible relationship between fertility desires and type of relationship.

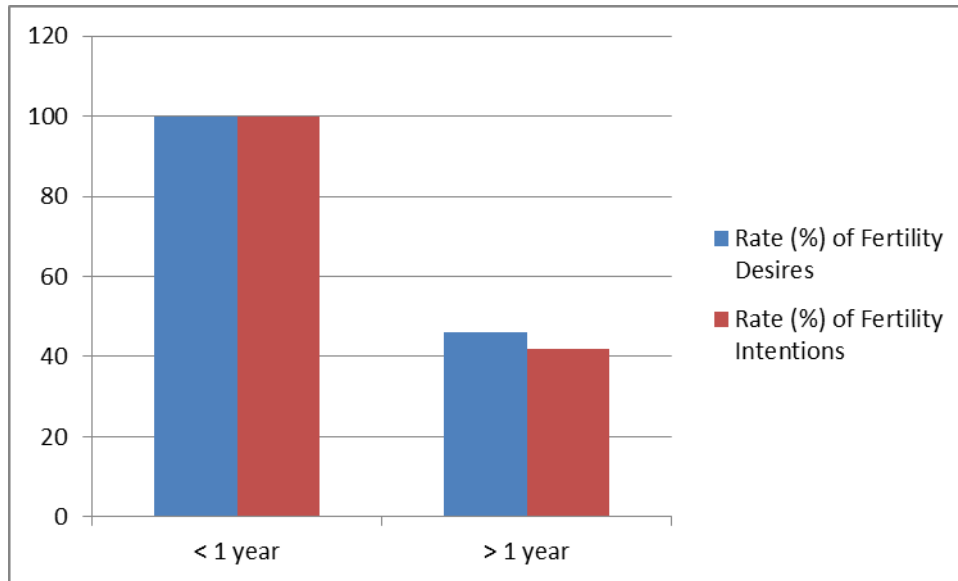


Figure 24: Prevalence of Fertility Desires and Intentions by Length of Relationship

Women in new relationships (< 1 year) seemed more likely to bear childbearing desires and intentions than those in longer partnerships. This appears to be in agreement with the apparent association between type of relationship and fertility relations depicted in Figure 23.

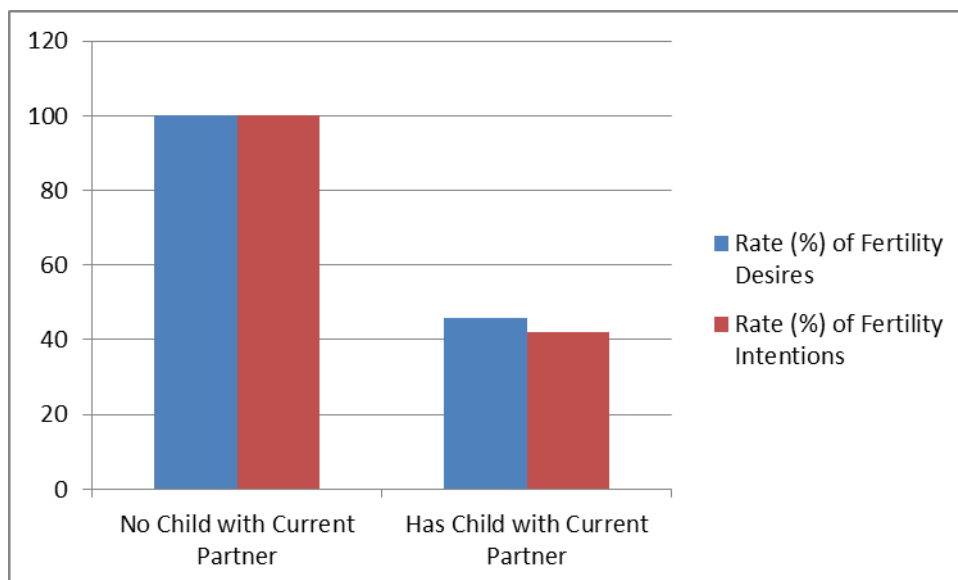


Figure 25: Prevalence of Fertility Desires and Intentions by Child with Current Partner

Participants already having a child with the current partner appeared less likely to desire or plan to have more children than those yet to conceive in the existing partnership.

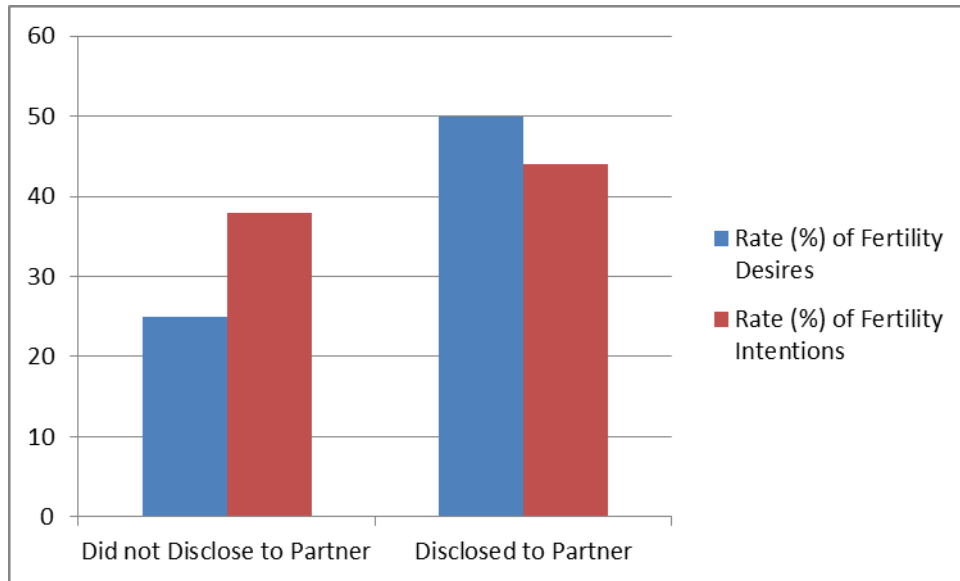


Figure 26: Prevalence of Fertility Desires and Intentions by Disclosure to Partner

Participants who had revealed their HIV status to the partner seemed more likely to hold fertility desires and intentions than those who had not disclosed.

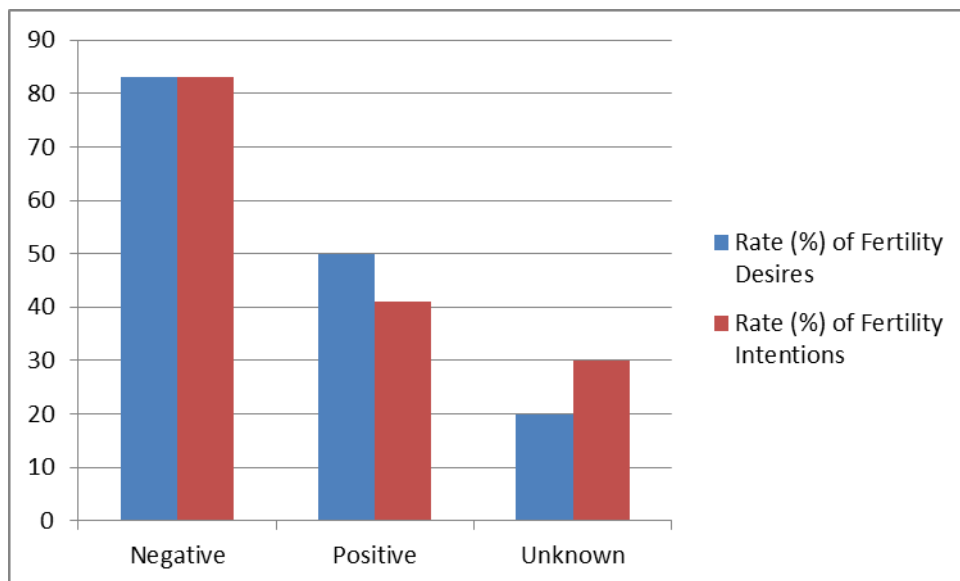


Figure 27: Prevalence of Fertility Desires and Intentions by HIV status of Partner

Women aware of their partner’s HIV status appeared more likely to bear fertility desires and intentions than those not aware of the partner’s status. Volitions and plans were highest among women in serodiscordant relationships.

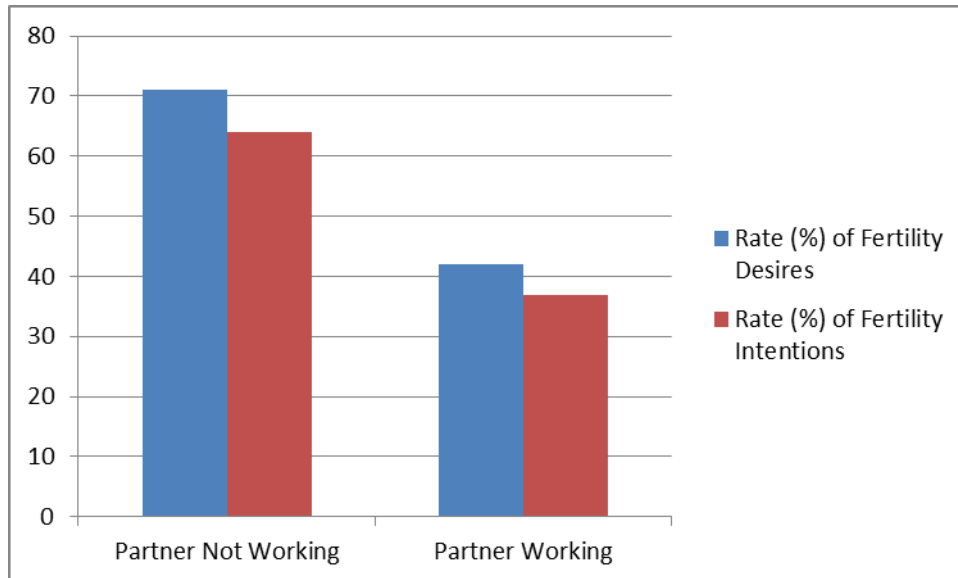


Figure 28: Prevalence of Fertility Desires and Intentions by Partner’s Employment Status

Women with unemployed partners seemed to show higher levels of fertility desires and intentions than those with working men.

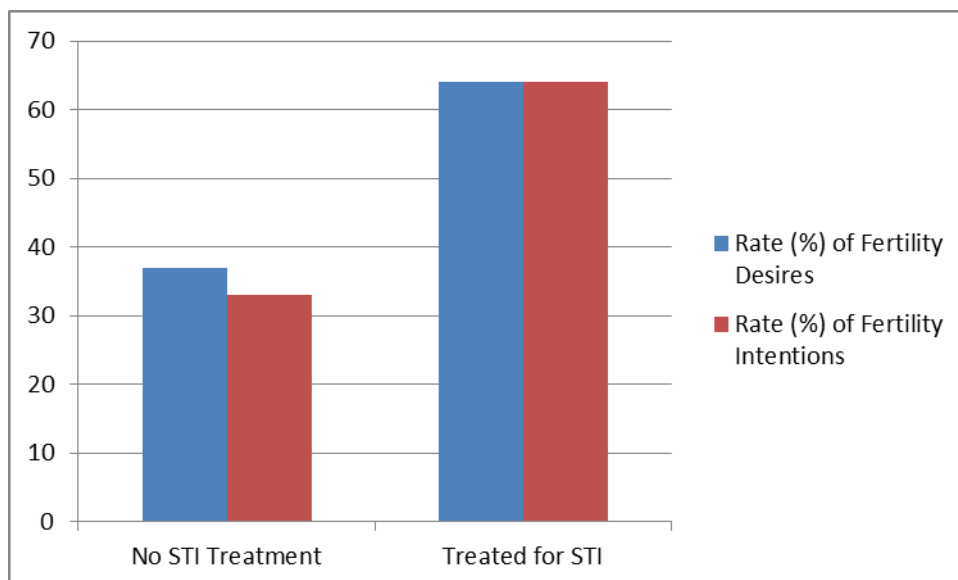


Figure 29: Prevalence of Fertility Desires and Intentions by STI History

Fertility Desires and intentions appeared more prevalent among participants with a history of having been treated for an STI after HIV diagnosis.

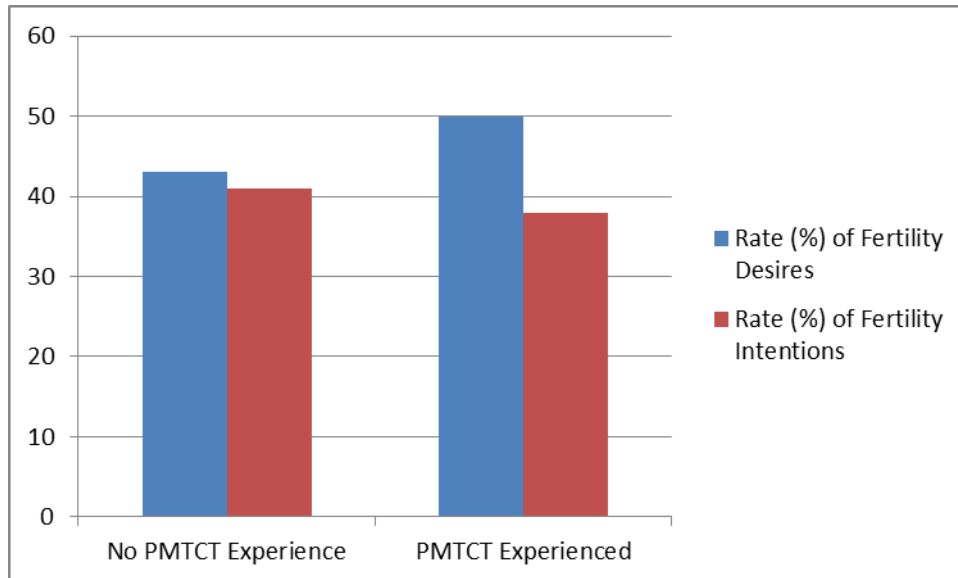


Figure 30: Prevalence of Fertility Desires and Intentions by PMTCT Experience

Fertility desires seemed more common among participants with PMTCT experience in previous pregnancies when compared to those without such exposure. There appeared to be no major difference in fertility intentions between the two groups.

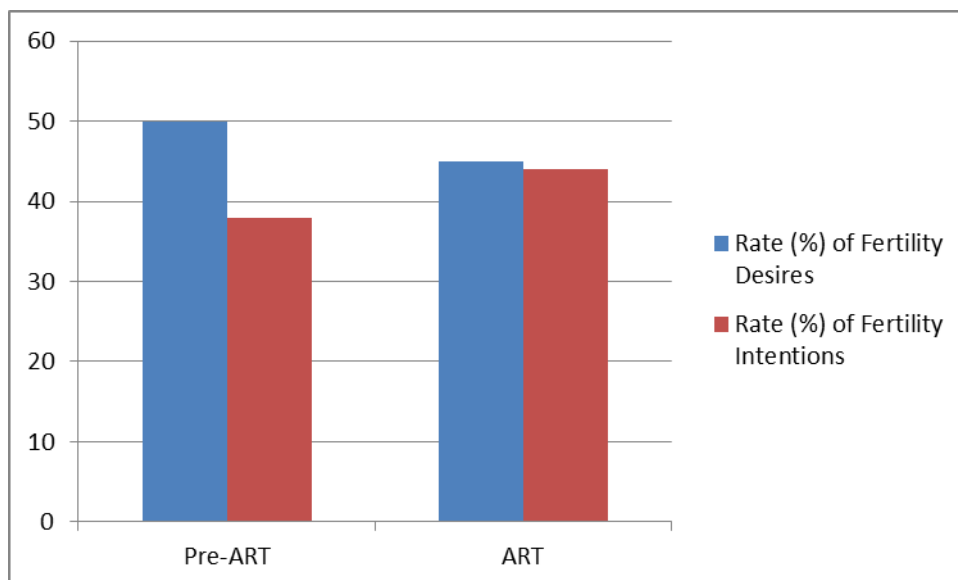


Figure 31: Prevalence of Fertility Desires and Intentions by ART Status

Fertility desires were higher among pre-ART participants but this group also showed lower rates of intentions when compared to the ART group. Fertility desires were less inhibited and translated to intentions more readily among participants on ART.

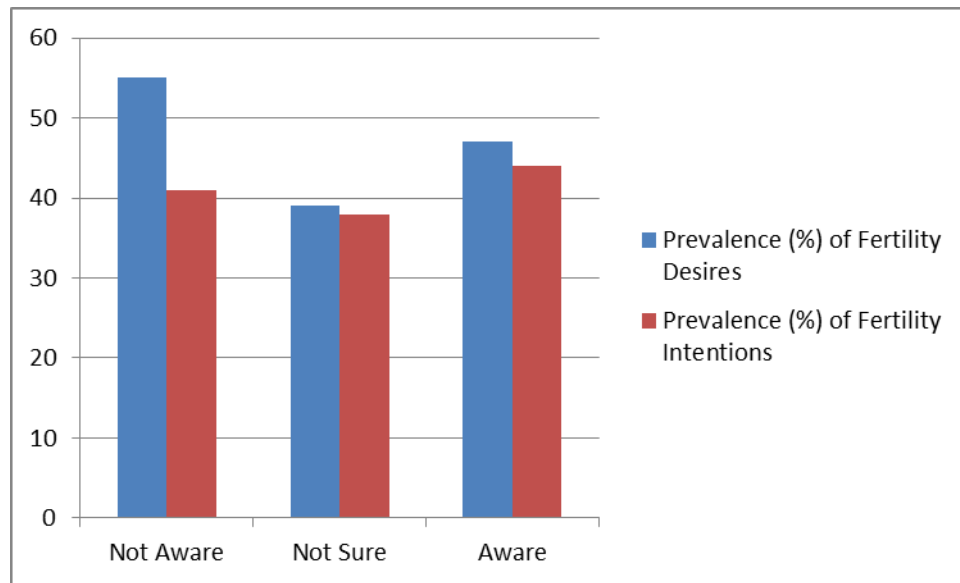


Figure 32: Prevalence of Fertility Desires and Intentions by Awareness of PMTCT Value of ARVs

There seemed to be no major differences or apparent trends in fertility desires and intentions on the basis of knowledge of the prophylactic value of ARVs at delivery and breastfeeding.

4.2.12 Perceived Conception Counselling Needs

More than half (54%) of the participants indicated that they would like to discuss issues of childbearing more in the future. Most of those in need of more information (59.3%) said they would like to have these discussions with a doctor, 22.2% would like to talk to a counsellor and 14.8% would prefer to chat with a nurse.

4.2.13 Inferential Analyses

Bivariate analyses using the chi-square test were done to test for potential relationships between the two central variables (fertility desires and fertility intentions) and selected factors explored by the survey. The selected factors were:

- Age
- Employment status (Y/N)
- Education
- Having children (Y/N)
- HIV related child deaths (Y/N)

- Relationship status
- Type of relationship
- Length of relationship
- Children with current partner (Y/N)
- Disclosure to partner (Y/N)
- Partner's HIV status
- Partner's employment status
- Contraceptive use (Y/N)
- Frequency of condom use in last three months
- STI treatment after HIV diagnosis (Y/N)
- Disclosure to people other than partner (Y/N)
- Perceived future outlook for PLHIV
- PMTCT Experience (Y/N)
- ART Status (Y/N)
- Perceived ART availability
- Perceived ART supply sustainability
- Perceived ART related life expectancy
- Knowledge of mother to child HIV transmission
- Knowledge of ARV prophylaxis at delivery
- Knowledge of ARV prophylaxis at breastfeeding

To use the Chi-square test in testing for associations, the cells in contingency tables must have expected frequencies of not less than one and no more than 20% of the cells may have expected cell frequencies of less than five (Michael, 2001). In this study, this requirement was only met for fertility desires by; employment status, employment status of partner and STI treatment after HIV diagnosis. Using a significance threshold of $p \leq .05$, none of these three factors were found to be significantly associated with fertility desires.

For 2 x 2 tables that fail to meet the criteria for using the Chi-square test, Fischer's exact test can be applied (Zibran, 2007). This test was applicable to relationships between fertility desires by; having/not having children, HIV related child deaths, relationship status, length of relationship, disclosure to partner, contraceptive use, disclosure to people other than partner,

perceived future outlook for PLHIV, PMTCT experience, ART status, perceived ART availability, perceived ART supply sustainability and perceived ART related life expectancy. The relationships between these factors and fertility desires were also not statistically significant ($p > .05$).

For fertility intentions, none of the tested variables met the expected cell count requirement for making valid inferences using the Chi-square test. The Fischer's exact test was also inapplicable in all cases and no valid inferences could be made regarding fertility intentions.

4.3. FINDINGS FROM HEALTH WORKERS

This section gives the characteristics of the health workers using descriptive statistics. Frequency tables and bar graphs are used for illustration. Data from this subgroup was not subjected to significance testing.

4.3.1 Demographic and Professional Characteristics

Fifteen health workers participated in the study and 80% of them were female. The mean age was 34 years and the median age was 36 years. Participant ages ranged from 26 to 45 years. Four participants did not reveal their ages. The professional distribution of the study's participants is shown in Table 14;

Table 11

Position at the Clinic

Position	Frequency
Counsellor	5
Nurse	5
Pharmacy Assistant	2
Pharmacist	1
Medical Officer	2

The study's participants were well experienced in HIV clinical care and 78.6% of the service providers had worked in HIV clinics for more than three years.

4.3.2 Language and Communication on Sex and Reproduction

Most of the service providers (86.7%) were confident of their ability to communicate in English. However, the proportion of participants that felt able to effectively communicate in the different local languages consistently fell below 50% as illustrated in Table 15;

Table 12

Perceived Language Proficiency

Language	Frequency	Percentage
English	13	86.7
Afrikaans	5	33.3
Oshiwambo	7	46.7
Otjiherero	2	13.3
Damara>Nama	1	6.7
Kwangali	0	0
Silozi	1	6.7
Other Local Language	2	13.3

Beyond language proficiency, 93.3% of the service providers felt they could communicate freely on issues of sex, contraception and fertility. However only 57.1% felt they had the necessary skills and knowledge to effectively disseminate accurate information on reproductive options for PLHIV.

4.3.3 Self-reported Spontaneity with regards to Fertility Discussions

Figure 17 shows participant responses to the statement- “I regularly initiate discussions on pregnancy desires/ intentions with HIV positive women attending the clinic.”

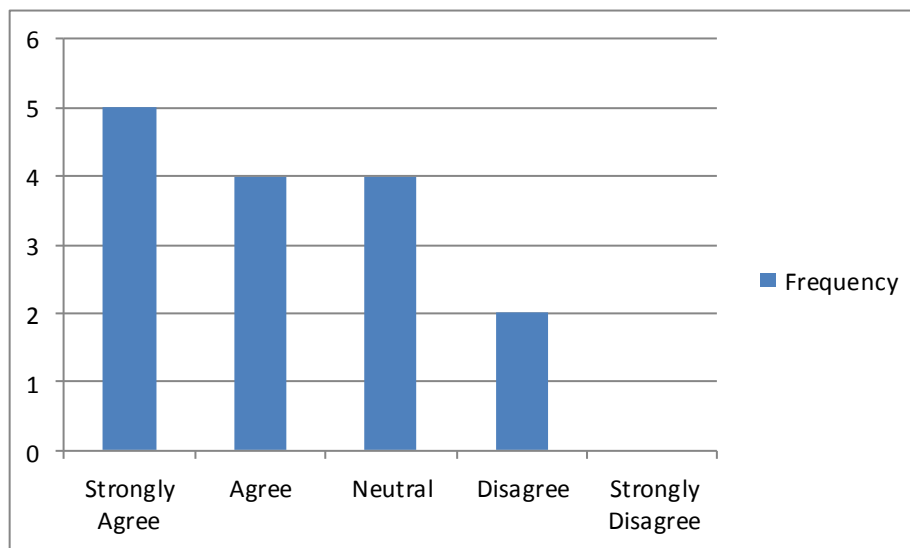


Figure 33: Perceived Frequency in Initiating Fertility Discussions

A third of the participants (33.3%) strongly believed they regularly initiated discussions on childbearing with their HIV positive clients, 27.6% were neutral and 13.3% felt they did not spontaneously explore fertility issues with their HIV patients.

4.3.4 Attitudes towards the Fertility Desires of Women Living with HIV

Participants were probed on their attitudes towards women with no children who are considering childbearing as well as their views on women with children who want to have more children. Responses by the group to the two scenarios were dissimilar and are displayed in Figure 18 and Figure 19.

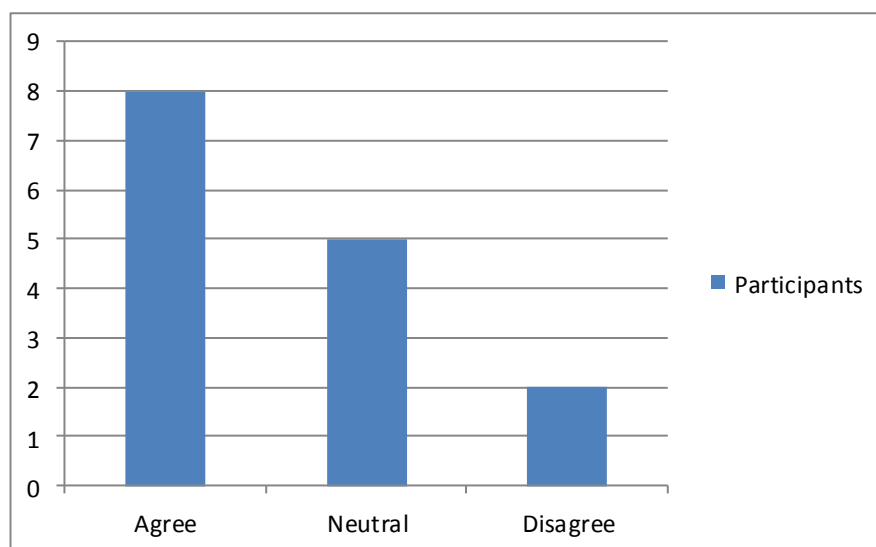


Figure 34: Opinion on- Women living with HIV who have no children should be encouraged to fall pregnant if they have such a desire.

A small majority (53.3%) of the health workers thought that HIV positive women with no living children must be supported if they decide to have children while 13.3% felt they must not be encouraged to follow their childbearing desires.

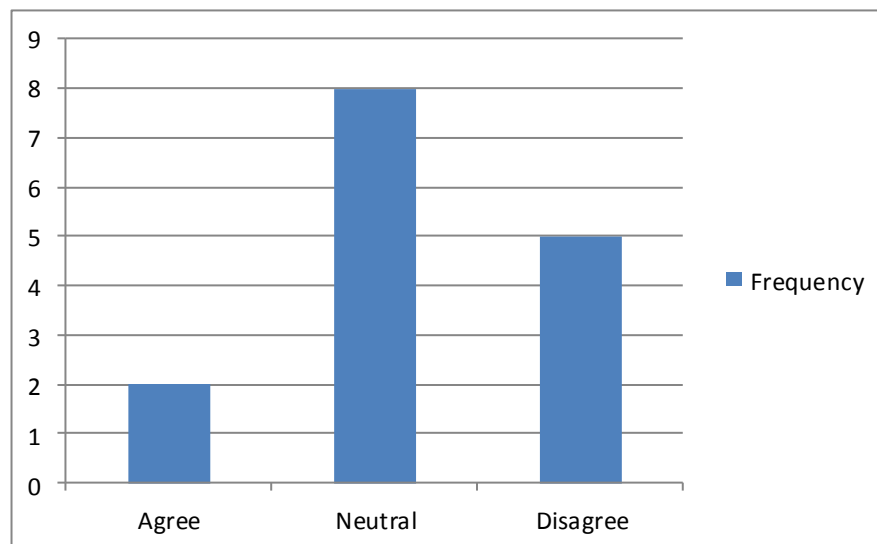


Figure 35: Opinion on- Women living with HIV who already have children should be encouraged to fall pregnant if they have such a desire.

A marked reversal in attitudes was observed with regards to HIV positive women with living children as only 13.3% of the health workers thought that these women must be supported if they decide to have more children while 33.3% felt they must not be encouraged to follow their childbearing wishes.

4.3.5 Importance of Biological Health Measures

Most of the health workers (80%) felt they were witnessing an increasing number of pregnancies at the clinic. They were probed on the importance they attached to viral loads, CD4 counts and ART status in determining fertility readiness as well as the importance they placed on the role of health professionals in reproductive decisions of women living with HIV. Results are illustrated in Figure 20.

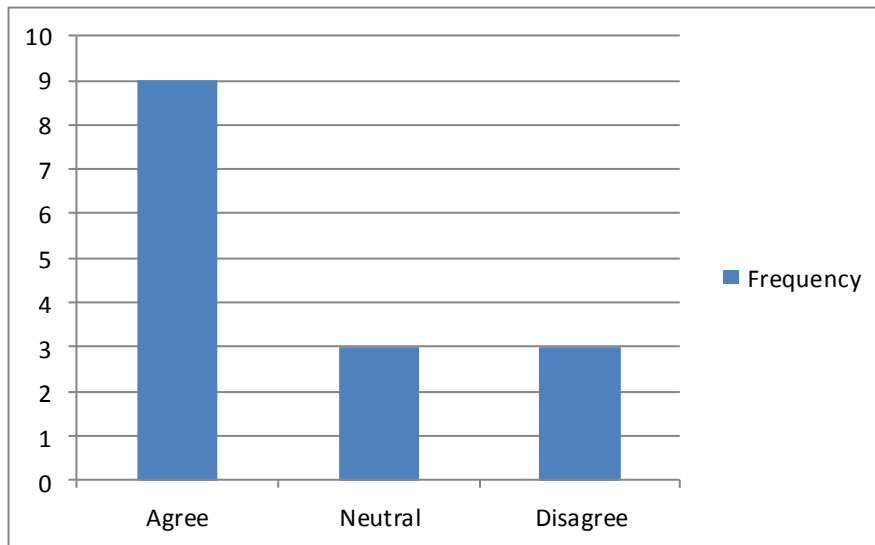


Figure 36: Opinion on- The physical health of a woman including CD4 counts, viral load, and being on ARVs is more important than her right to choose to become pregnant.

More than half of the participants (60%) were of the opinion that biological health measures assume greater importance than a woman’s right to make fertility choices. Only 20% felt otherwise.

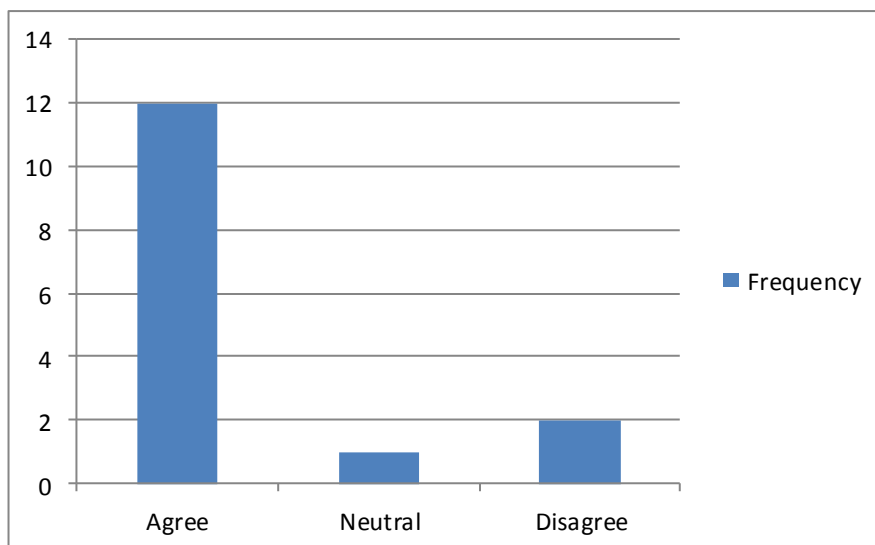


Figure 37: Opinion on- The decision to become pregnant should be reached only after consultation with a health professional.

The majority of participants (80%) felt that HIV positive women must only conceive after talking to a health professional. The trend almost mirrored that seen with regards to perceived importance of biological health measures.

4.3.6 Stigma

The blame participants attached to mothers of HIV positive children who fell pregnant when they were aware of their status was explored and results are illustrated in Figure 22.

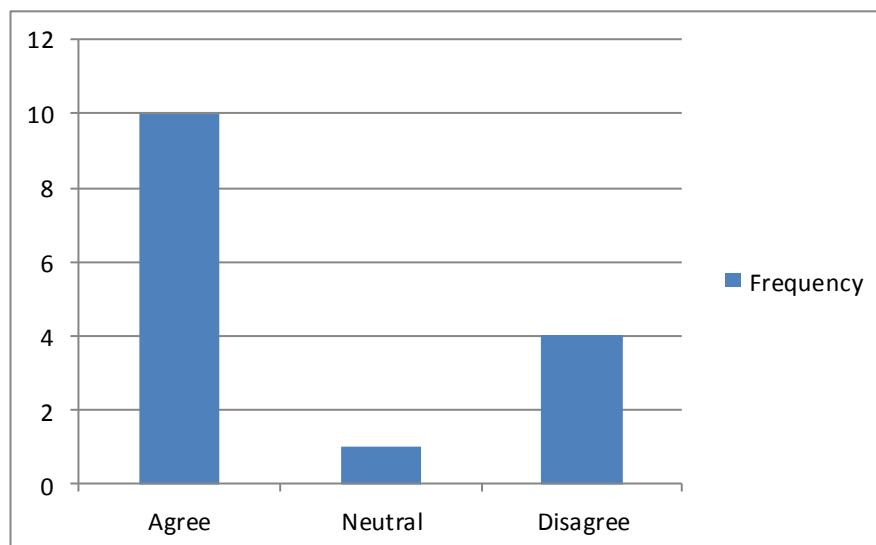


Figure 38: Opinion on- Becoming pregnant and delivering an HIV positive baby when fully aware of one's status is a sign of irresponsibility by the mother.

Most of the health workers (66.7%) were of the position that delivering an infected baby when fully aware of your own status is a result of irresponsibility on the part of the mother and only 26.7% felt otherwise.

Attitudes towards vertical HIV transmission aside, all the participants answered “NO” when asked if they thought PLHIV deserved their condition as a punishment for misbehaving. All the health service providers also felt PLHIV can look forward to the future but only 14.3% of them felt PLHIV could live as long as HIV negative people.

4.4 SUMMARY

While a slight majority prefer not to have (more) children, fertility desires and intentions are considerably present among women living with HIV attending KHC CDC. A large proportion has already been pregnant after HIV diagnosis. Health workers were perceived as most accommodative of PLHIV and their input was also the most valued when participants considered reproduction. Descriptive analysis showed possible connections between elevated fertility desires and/or intentions and higher education levels, having a partner, not having children, having no children with current partner, a history of HIV related child death, less formal relationships, shorter relationships, having disclosed to the partner, being aware of partner's status, having a HIV negative partner, STI treatment after HIV diagnosis, PMTCT experience as well as ART status.

These relationships were further scrutinised through inferential analysis which concluded that employment status, employment status of partner, history of STI treatment after HIV diagnosis, having/not having children, HIV related child deaths, relationship status, length of relationship, disclosure to partner, contraceptive use, disclosure to people other than partner, perceived future outlook for PLHIV, PMTCT experience, ART status, perceived ART availability, perceived ART supply sustainability and perceived ART related life expectancy were not significantly related to fertility desires. For all the other possible relationships with fertility desires and all potential relationships with fertility intentions, valid inferences could not be made due to inapplicability of both the chi-square test and Fischer's exact test.

The second survey revealed low levels of overt stigma towards PLHIV in general among the health workers. Attitudes towards HIV positive women wishing to become parents whilst already having children were mostly negative and judgemental views were shown towards mothers of HIV positive children who conceived after HIV diagnosis. Great importance was attached to biological health measures in respect of reproduction. The next chapter discusses these results, makes recommendations and concludes the study.

5. DISCUSSION, CONCLUSION & RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the results of the two surveys in view of the study's objectives and existing literature from Sub-Saharan Africa. For the main target group, different factors are discussed in terms of their association (or lack of) with fertility desires and intentions. Associations are examined superficially at the level of descriptive statistics and inferential analysis is referred to where applicable. Comparison with existing literature from Sub-Saharan Africa is attempted throughout the discussion. Major findings from the provider subgroup are also discussed. Lastly, a conclusion to the study is made, limitations outlined, recommendations put forward and areas in need for further study suggested.

5.2. DISCUSSION

None of the explored variables had a statistically significant association with either fertility desires or intentions. Not all relationships were testable. This discussion dwells on factors possibly predictive of fertility desires and intentions and also sheds light on prominent features of both study groups.

5.2.1 Age

Fertility desires and intentions were lowest below the age of 25 years and above 39 years. Highest rates were recorded for women in the 35-39 year age group. While the relationship between age and both fertility desires and fertility intentions was not testable for significance, the apparent trend appears to diverge from the verdicts of Beyeza-Kashesya et al (2010), Kipp et al (2011), Peltzer et al (2009) and Khanyisa (2010) who separately concluded that youthfulness was associated with elevated fertility desires among women living with HIV.

5.2.2 Employment

Unemployed women were slightly more likely than those with jobs to report childbearing desires as well as intentions. The same trend was replicated when it came to the employment status of partners and this time women with unemployed spouses showed a much greater level of fertility desires and intentions than those with working men. The relationship between employment and fertility desires was however statistically insignificant while its

relationship with fertility intentions could not be subjected to tests for association. The same outcome applied to employment status of partner by fertility desires and intentions at inferential analysis ($p > .05$ and invalid test respectively). HIV positive women in the present study showed fertility ideations that were independent of job related income generation (for both the individual and the partnership) and despite the lack of inferential backing, those with less economic opportunity appeared more likely to wish and plan for childbearing. Having children may be viewed as a status symbol and potential avenue to future success hence its apparent eminence among the economically deprived. The findings of the current study are in disagreement with those of Getachew et al (2010) who inferred that HIV positive women with less financial income were less likely to desire pregnancy.

5.2.3 Education

While there was no recognisable link between fertility desires and level of education, fertility intentions increased with rising educational attainment. While this finding cannot be extrapolated beyond the sample due to the relationship not being testable at inferential analysis, it appears to diverge from the findings of the multi-country analysis of fertility trends in Sub-Saharan by Myer et al (2010). Among other findings, they concluded that low educational completion was associated with increased fertility rates among women living with HIV. Their study was on actual pregnancy rates and the association between actual fertility and education level could have been mediated by other factors beyond desires and intentions such as access to contraception.

5.2.4 Having Living Children and HIV Related Child Loss

Fertility desires and Intentions were substantially higher among participants with no living children compared to those with offspring. This would be expected as a woman attempts to find a balance in an environment that stigmatises HIV infection as well as childlessness. Khanyisa (2010) also found that having fewer children was associated with fertility desires in a study conducted in South Africa. The present study also showed an increased propensity towards childbearing among participants with a history of HIV related child death suggesting that losing a child to the pandemic is reciprocated by fertility thoughts and plans in this setting. This goes against the findings of Kakaire et al (2010) in Uganda who concluded that history of child death was associated with depressed fertility desires. The current findings also seem to diverge from those of Cooper et al (2007) who concluded that a previous history

of an infected baby was associated with avoiding further pregnancies. Both factors (not having a child and history of child death) were found not to be significantly associated with fertility desires at inferential analysis in the present study while the relationship between these variables and fertility intentions could not be validated.

5.2.5 Type of Relationship

Women with partners were more likely to bear childbearing desires and intentions than those without partners. Within these partnerships, women not living with their partners had higher fertility desires and intentions than those who were cohabiting while married participants had the least desires and intentions for fertility. While these relationships could not be subjected to significance testing, they certainly contrast the findings of Kakaire et al (2010) who concluded that being married was associated with elevated childbearing intentions. The trend of reduced fertility desires and intentions among married women seen in the present study also appears to diverge from the findings of Myer et al (2010). They found increased fertility among married or cohabiting women living with HIV across seven African countries. Theirs was an analysis of actual fertility and their findings could simply imply that living as a couple in a high accidental pregnancy rate environment is associated with increased fertility. Desires and intentions may have been peripheral.

5.2.6 Length of Relationship and Children from Relationship

Participants in short relationships (< 1 year) expressed higher fertility desires and intentions than those in longer term partnerships. This tendency appears to be a repeat expression of the trend seen with type of relationship (under the assumption that being married versus cohabiting or living separately is a marker of a long relationship). Also in line with these two findings is the fact that women without children from current relationships showed more fertility desires and intentions than those who had already conceived in the courtship. The yearning to conceive appears to wane once a child is in place and the relationship has been 'fulfilled'. The association of length of relationship and fertility desires was found to be statistically insignificant and the association of the same factor with fertility intentions was not testable at inferential analysis. The relationship between having a child in the current relationship and fertility desires or intentions was not testable at inferential analysis.

5.2.7 Partner's HIV Status

Participants who were aware of their partner's HIV status were more likely to bear fertility desires and intentions and those with HIV negative partners were the most likely to have such ideation. Participants not aware of their partner's status were least likely to desire pregnancy. This is consistent with the findings of Khanyisa (2010) who concluded that having a current partner who is aware of his status is associated with fertility desires among women living with HIV in South Africa. Depressed fertility ideas in HIV positive women not aware of their partner's status conceivably emanates from the fear of partner infection and the lack of open discussion on reproductive options and HIV. On the other hand, the elevated fertility desires among those in serodiscordant relationships in the current study could be explained by the perceived need to satisfy the HIV negative partner's 'right' to a normal reproductive life. While the relationships between HIV status of partner and fertility desires and intentions in the present study were not testable at inferential analysis, the apparent findings are in line with those of Beyeza-Kashesya et al (2010) in Uganda where 26% of serodiscordant couples in which the woman was positive went on to have children after HIV diagnosis and disclosure. Sixty four per cent of these couples reported still wanting more children. However, the trend seen here diverges from the finding by Getachew et al (2010) that participants with a HIV negative partner were 63% less likely to desire children than those in seroconcordant relationships in Ethiopia.

5.2.8 Disclosure to Partner

Non-disclosure between sexual partners was common. Approximately 17% of the women in relationships had not disclosed to their partner and 22% did not know their partner's HIV status. This may be a reflection of an intractable fear of rejection and physical abuse that is rife in male dominated communities with high levels of HIV stigma. High rates of unemployment were noted among the participants and economic dependence on male partners is assumed. The rates of non-disclosure recorded in the current study are however much less than the 36% reported for men and women living with HIV by Wong, Van Rooyen, Modiba, Richter, Gray, McIntyre, Schetter and Coates (2009) in South Africa but comparable to the 15.6% seen in Malawi (Angelwicz & Chintsanya, 2011). Disclosure to the male partner in the present study was associated with increased fertility desires and intentions. However the apparent association with fertility desires was statistically insignificant and that with fertility intentions was not testable for significance.

5.2.9 Fertility desires of Partners

About 37% of the participants in relationships indicated that their partners had a strong desire for fatherhood while 40% indicated that their spouse was strongly against it. These rates are similar to the rates of fertility wishes recorded for the female participants of this study. The apparent parity in childbearing desires between the two sexes is in agreement with Yeatman (2009) who concluded that HIV diagnosis reduces fertility desires in men and women equally. However, these findings depart from those of Nakayiwa et al (2006), Getachew et al (2010) and Makumbi et al (2010) who concluded that fertility desires of HIV positive men were much higher than those in women. It must be noted that Yeatman, Nakayiwa et al and Getachew et al all recruited men as participants while the current study and that of Makumbi et al gather male desires from their partners' perspectives. These may be unreliable. The proxy rates of male desires referred to in the present study also include wishes of HIV negative men (13.3% of the participants in relationships had HIV negative partners).

5.2.10 ART and PMTCT Knowledge, Experience and Optimism

High levels of fertility desires were observed among both ART and pre-ART participants but desires were translated to intentions more readily among the women on ART. ART status was not significantly related to fertility desires. The reported dissociation of ART status (and ensuing clinical states) and fertility desires appears to differ with the findings of Beyeza-Kashesya et al (2010). They suggested that being asymptomatic in the recent past (previous six months) was associated with elevated fertility desires. This apparent discord could be explained by the fact that as of 2010, ART in Namibia is generally started on asymptomatic individuals (CD4 count threshold of 350 cells/ml). ART is employed as a strategy to remain healthy rather than a ticket back to good health. The symptom-free state of most patients at baseline could have exerted a ceiling effect on any possible impact of ART (through a reduction in opportunistic illnesses) on fertility desires and intentions. Such a ceiling effect is bound to be more pronounced in populations unaware of the prophylactic value of ART in pregnancy and the current study sample is one such example. Kakaire et al (2010) as well as Kipp et al (2011) also failed to find any significant association between fertility desires and ART status albeit in Uganda where ART was mostly started in symptomatic persons (CD4 threshold of 200 cells/ml). The lack of ART impact on fertility desires in a 'symptomatic community' appears to weaken the 'ceiling effect' argument. A plausible explanation for this is that as much as patients who have experienced HIV related illnesses in the past enjoy a

better quality of life on ART, the fear engraved by previous poor health (experienced and observed) may linger to keep long term plans (including reproduction) in check.

High levels of ART optimism (measured as ‘Do you think PLHIV can live as long as HIV negative people?’ and ‘Do think PLHIV can look forward to the future?’) and perceptions of treatment sustainability were shown by study participants. However, and deviating from the findings of Kaida et al (2009), treatment optimism was found not to be significantly associated with fertility desires. Knowledge on the value of ART in preventing perinatal HIV transmission was low but association with fertility desires and/or intentions was not testable in the present study. Getachew et al (2010) in Ethiopia and Peltzer et al (2009) in South Africa separately concluded that HIV positive women wise to the prophylactic value of ARVs were more likely to plan fertility than those ignorant of this benefit. Educating women of the PMTCT benefits of ART may motivate those on ART to adhere optimally to their treatment during pregnancy and breastfeeding. Good adherence habits cultivated during this extended period may then be transferred to the rest of the woman’s treatment life. About 16% of the participants had been given ARVs for PMTCT in a previous pregnancy but such experience was also not significantly associated with fertility desires.

5.2.11 Contraception and Condom use

The male condom was the most commonly used method of contraception. Condom use was however inconsistent with only 48.8% of sexually active participants indicating that they were using condoms at every sexual encounter. Inconsistency in condom use is reflected by the fact that 28% of the participants admitted to being treated for an STI after HIV diagnosis. With the rates of nondisclosure and serodiscordance reported for this sample as well as elsewhere in Sub-Saharan Africa, the erratic use of condoms may trigger numerous new HIV infections. More encouraging for post-test counselling and on-going counselling efforts in HIV care centres is the finding that self-reported condom use by sexually active participants increased after HIV diagnosis among most of the participants.

Oral contraceptives and injectable methods are also commonly used. However, only a combined 38% were on provider controlled methods (injectables and IUCD) and this is contrary to the accounts cited by Bell & Orza (2006). They reported that ART clinics in Namibia tied ARV provision to provider controlled contraception in order to curb

reproduction among PLHIV. The female condom and the intrauterine contraceptive device were least popular. The female condom, despite potentially empowering women to share the condom responsibility with their partners, was used by only 2% of participants. Whether this was a result of preference or unavailability was not explored and may need further investigation. The IUCD was used by only 2% of the study's participants despite the majority of them not having fertility desires or intentions. This could be a reflection of an unmet need for longer term contraceptive methods. Being on contraception was not significantly related to fertility desires. Women who had undergone permanent sterilisation procedures were excluded from this study and this could partly explain the observed non-association of fertility desires and contraception.

From a HIV prevention perspective, the relationship between risky sexual behaviour and fertility ideations is probably the most important. The research instrument explored risky behaviour by probing consistency of condom use and history of STI treatment after HIV diagnosis. While the former could not be tested for association with fertility desires or intentions, the later was found to be non-predictive of fertility desires. The relationship between STI history and fertility intentions could not be tested. Sample statistics however show that women with a history of STI treatment after HIV diagnosis were more likely to bear childbearing intentions than those who had been STI free. The apparent association between fertility intentions and risky sexual behaviour is reason for concern. It could have far reaching epidemiological implications and needs further investigation through the use of a larger sample size than the one employed here.

5.2.12 Fertility after HIV Diagnosis

Fertility desires and intentions aside, the current study reveals that 30% of participants had already been pregnant after learning of their HIV diagnosis. It is this conspicuously high fertility rate after HIV diagnosis that was the rationale behind the current study. The research instrument did not explore whether these pregnancies were intended or accidental but the apparent fertility among women living with HIV appears to be in line with the high rates of fertility aspirations reported for the study sample. Reproductive desires and intentions are not only glaringly present but are translating to actual childbearing.

5.3 PROVIDER FINDINGS

While most of the health workers felt they could communicate effectively in English, the proportion of providers able to communicate in Namibia's local languages consistently fell below 50%. The majority of the clinic's clientele does not speak English. Oshiwambo is the most commonly spoken language. Only 46% of the service providers were fluent in this language. There are no dedicated translators at the clinic and the chances of vague communication on issues of reproduction in an environment in which other aspects of clinical care take precedence are enormous. Beyond language challenges, only 57.1% of the health workers felt they had the requisite skills for effective preconception counselling. It is against this background that 50% of the participants in the HIV positive women group said they were strongly influenced by fertility advice from health professionals and more than half of them (54%) indicated that they would a childbearing discussion with a health worker in the future.

All the health workers disagreed with the notion that HIV infection was punishment for misbehaving. This is in line with the finding from the women living with HIV group where health workers were viewed in a positive light and ranked as the least stigmatising and least discriminatory when compared to the women's families and the wider community. The zero level of overt stigma expressed by the service providers in the present study compares favourably with the findings of Reis et al (2005) in Nigeria. They found that 20% of health workers in Nigeria viewed PLHIV as immoral and deserving of the infection. With regards to perceived ART sustainability, only 14.3% of the health workers in the current study felt that PLHIV can live as long as HIV negative people but all participants felt PLHIV could look forward to the future. Levels of blatant HIV related stigma were low but health workers were not convinced of their clients' life expectancies.

With regards to HIV and childbearing, levels of stigma became more visible as 66.7% of the health workers attached blame to women who fell pregnant while fully aware of their status and ended up raising HIV positive children. Attitudes towards aspiring first time mothers were mixed as 53% thought such women should be supported if they expressed an intention to fall pregnant. A steep change in attitudes was observed when it came to women who were already mothers. Only 13.3% of the health workers said they support further childbearing ambitions by women in this bracket. The majority of the participants (60%) also felt that that the physical health of a woman, CD4 counts and viral loads were more important than

personal choices in relation to childbearing. This systematic disregard of reproductive health rights for PLHIV in favour of biomedical concerns is in line with the findings of Gruskin et al (2008) and Harries et al (2007). The largely negative attitudes towards positive parenting reported among health workers in the present study is evident among their clientele as about half of the participants from the women living with HIV subgroup who had discussed fertility with a health worker reported meeting negative reactions.

5.4 LIMITATIONS OF THE STUDY

This study attempted to determine the level of fertility desires and intentions of HIV positive women in Namibia as well as the factors associated with those choices. Women enrolled at KHC CDC are used as a proxy and because of the nature of the clinic's clientele, Namibia's higher income population and the rural folk are under-represented. Findings from this study may not be generalizable to affluent women living with HIV as well as women living in the country's rural areas.

A sample size of 50 was used for this study. This is a small sample considering the population of 480 women expected to visit the clinic in any two week period. According to Krejcie and Morgan (as cited in Christensen, Burke & Turner, 2011), a sample size of 214 was required to adequately represent such a population size. However, the use of such a large sample for the purpose of this study was not possible due to resource constraints. The major drawback of using a small sample is that collected data may contain considerable random error making it difficult to detect weak relationships present in the population (Christensen et al, 2011). Type 2 errors may have been committed in this study and this may explain the lack of significant association recorded for factors found predictive of fertility volitions elsewhere such as having children, PMTCT experience, ART status and ART optimism. Beyond concerns of random error, the small sample reduced the study's capacity to make valid inferences as small expected cell counts in contingency tables failed to meet the requirements for valid Chi-square tests. Fischer's exact test was used to counter this limitation in some instances but the apparent relationships between fertility desires and; age, nature of relationship, children in current relationship and HIV status of partner could not be subjected to significance testing. No valid inferences could be made regarding fertility intentions.

By using the cross-sectional design, this study gives a snap-shot impression of the reproductive desires and intentions of women living with HIV enrolled at KHC CDC. However, the HIV epidemic and indeed culture in general (including childbearing ethos) is not static and exhibits continuous evolution. The fertility volitions of HIV positive women are bound to vary with time even in the same geographical setting and the use of a cross-sectional design in this study does not shed light on possible trends. The longitudinal design has been used to investigate fertility desires among PLHIV in other studies and may have been a superior option due to its ability to detect prevailing desires as well as temporal patterns. However, due to time and cost constraints, the cross-sectional design was adopted for this study. This study may be repeated with the same target populations (not necessarily the same participants) at some point in the future to determine changes over time.

Over and above issues of representation and sample size, this study only explores fertility wishes yet the impact of these volitions (or lack of) on actual childbearing is a different matter that lies beyond the scope of this survey. Additionally, the lack of data on fertility desires and intentions of HIV negative women from similar settings in Namibia means the study cannot draw conclusions on the effect of a HIV diagnosis on fertility volitions. Finally, use of the cross sectional design meant causality between the compared variables could not be inferred and conclusions were confined to detectable associations.

5.5 CONCLUSION

While the majority of participants did not bear childbearing ideations, a conspicuous 44.9% expressed a desire to have children at some point in the future and an equally visible 42.0% indicated that they planned to conceive within the next two years. The recorded rates are on the higher end of the fertility desires and intentions range (7-71%) reported for African women living with HIV in the literature review chapter of this paper. This was despite the fact that 96% of participants were already mothers to living children, 62.8% already had a child with their current partner and only 44% appreciated the PMTCT value of ARVs. The high rates of fertility desires and intentions recorded here are nonetheless congruent with the high levels of treatment optimism and low levels of perceived stigma and discrimination observed in the study sample.

A huge majority of the women living with HIV were sexually active and childbearing after HIV diagnosis was common. Male condoms were the most commonly used method of contraception but there was a low uptake of female condoms as well as longer term contraceptive methods. Condom use was inconsistent and a significant proportion of participants had acquired an STI after HIV diagnosis. Relatively high rates of non-disclosure between partners were recorded. Descriptive analysis showed possible connections between elevated fertility desires and/or intentions and higher education levels, having a partner, not having children, having no children in the current relationship, history of HIV related child death, less formal relationships, shorter relationships, disclosure to partner, awareness of partner's status, having a HIV negative partner, STI treatment after HIV diagnosis, PMTCT experience as well as ART status. No variable was found to be significantly related to fertility desires or intentions but a considerable number of relationships could not be subjected to tests for association. Sample size was the major limitation at inferential analysis.

Service providers were generally PLHIV friendly but attitudes towards positive parenting were mixed and were particularly harsh towards women intending to have more than one child. While fertility discussions are occurring, language, professional inefficacy, judgemental attitudes and biomedical concerns among the service providers present obvious impediments. The demand for fertility discussions was great and may be largely unmet. Most discussions were occurring with the least skilled personnel and there remained a wide window of opportunity for poorly informed or uninformed conception among PLHIV. The potential implications for the woman, her partner, the baby and indeed public health are ominous.

5.6 LIST OF RECOMMENDATIONS

- Condom use messages and condom distribution to PLHIV must be intensified as only 48.8% of the women living with HIV reported using condoms consistently and as many as 28% had acquired an STI after HIV diagnosis.
- In an environment where HIV serodiscordance is common, 22.2% of women enrolled at KHC CDC did not know their partner's HIV status while 17% were yet to disclose to their partner. HIV status disclosure between partners should be embraced as a prevention strategy and approaches must be developed to promote it.

- Educate HIV positive women on the prophylactic value of ART in the perinatal period and during breastfeeding as most of the HIV positive women were ignorant of the PMTCT value of ARVs.
- Service provider attitudes were mixed with regards to positive parenting and were particularly unfriendly when it came to PLHIV wanting more children. There is a need to educate health care providers on positive parenting and PLHIV's right to make fertility choices
- Fertility issues must be integrated into routine clinic consultations. The majority of participants indicated they would want to discuss childbearing with a health worker in the future.
- Engage PLHIV as couples in conception counselling as more than half of the participants in this study indicated they were under strong partner influence when it came to fertility decisions.
- Target women in new relationships, women with no children and those without children in their current relationships for conception counselling. Descriptive analysis suggested that these subgroups were relatively more likely to desire and/or plan fertility than others.
- Women with HIV negative partners also seemed to have elevated fertility volitions and it is imperative that affordable and safe conception strategies be made available. Viable options include treating the positive individual in a serodiscordant couple regardless of CD4 count (ART for prevention), pre-exposure prophylaxis (PrEP) and vaginal artificial insemination.

5.7 FURTHER STUDY

While the current study has established the level of fertility ideations and related factors among PLHIV in Namibia, it has also raised some questions that need to be addressed. Future research could be directed towards;

- Repeating this study but with a larger sample.
- Exploring the factors behind the extremely low uptake (2%) of the female condom.
- Determining the reasons behind the extremely low uptake of the IUCD (2%) and other longer term methods in a population that predominantly does not harbour fertility desires or intentions.

- Establishing the short term and long term changes in ART adherence among women aware of the PMTCT value of ART.
- Establishing changes in fertility desires and intentions among PLHIV over time

REFERENCES

- Akande, E.O. (2008). Affordable assisted reproductive technologies in developing countries: pros and cons. Retrieved April 12, 2012, from <http://eshremonographs.oxfordjournals.org/content/2008/1/12.full>
- Angelwicz, P., & Chintsanya, J. (2011). Disclosure of HIV Status Between Spouses in Rural Malawi. Retrieved January 07, 2013, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3371657/>
- Bell, E., & Orza, L. (2006). Understanding Positive Women's Realities. Retrieved April 10, 2012, from <http://www.search4dev.nl/document/122951>
- Beyeza-Kashesya, J., Ekstrom, A.M., Kaharuza, F., Mirembe, F., Neema, S., & Kulane, A. (2010). My partner wants a child: A cross-sectional study of the determinants of the desire for children among mutually disclosed sero-discordant couples receiving care in Uganda. Retrieved October 17, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2877675/pdf/1471-2458-10-247.pdf>
- Bharat, S., & Mahendra, V.S. (2007). Meeting the Sexual and Reproductive Health Needs of People Living With HIV: Challenges for Health Care Providers. Retrieved April 11, 2012, from <http://www.who.int/reproductivehealth/publications/rtis/providers.pdf>
- Chama, C., Morrumpa, J., & Gashau, W. (2007). Sex and Reproduction among HIV-Infected People in Maiduguri, Nigeria. Retrieved April 10, 2012, from <http://www.ncbi.nlm.nih.gov/pubmed/18097901>
- Christensen, L.D., Johnson, R.B., & Turner, L.A. (2011). Research Methods, Design, and Analysis (11th ed.). Boston: Pearson Education.
- Cooper, D., Harries, J., Myer, L., Orner, P., Bracken, H., & Zweigenthal, V. (2007). "Life is still going on": reproductive intentions among HIV-positive women and men in South Africa. Retrieved April 5, 2012, from <http://www.ncbi.nlm.nih.gov/pubmed/17451852>
- Delvaux, T., & Nostlinger, C. (2007). Reproductive Choice for Women and Men Living with HIV: Contraception, Abortion and Fertility. Retrieved April 7, 2012, from <http://www.who.int/reproductivehealth/publications/rtis/contraception.pdf>

- Finocchiaro-Kessler, S., Dariotis, J.K., Sweat, M.D., Trent, M.E., Keller, J.M., Hafees, Q., & Anderson, J.R. (2010). Do HIV-Infected Women Want to Discuss Reproductive Plans with Providers, and Are Those Conversations Occurring? Retrieved April 20, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3120085/?tool=pubmed>
- Getachew, M., Alemseged, F., Abera, M., & Deribew, A. (2010). Factors affecting fertility decisions of married men and women living with HIV in South Wollo Zone, Northeast Ethiopia. Retrieved May 10, 2012, from <http://ejhd.uib.no/ejhd-v24-n3/214%20Factors%20affecting%20fertility%20decisions%20of%20married%20men%20and%20women%20living%20with%20HIV%20in%20South%20Wollo%20Zone.%20Northeast%20Ethiopia.pdf>
- Gruskin, S., Firestone, R., McCarthy, S., & Ferguson, L. (2008). HIV and Pregnancy Intentions: Do Services Adequately Respond to Women's Needs? Retrieved October 12, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2636477/>
- Harries, J., Cooper, D., Myer, L., Bracken, H., Zweigenthal, V., & Orner, P. (2007). Policy Maker and Health Care Provider Perspectives on Reproductive Decision-making Amongst HIV-Infected Individuals in South Africa. Retrieved April 20, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2098761/?tool=pmcentrez&report=abstract>
- Johnson, K.B., Akwara, P., Rutstein, S.O., & Bernstein, S. (2009). Fertility preferences and the need for contraception among women living with HIV: the basis for a joint action agenda. Retrieved April 5, 2012 from <http://www.ncbi.nlm.nih.gov/pubmed/20081391>
- Kaida, A., Lima, V.D., Andia, I., Kabakyenga, J., Mbabazi, P., Emenyonu, N., Patterson, T.L., Hogg, R.S., & Bandsberg, D.R. (2009). The WHOMEN's scale (Women's HAART Optimism Monitoring and Evaluation Scale v.1) and the association with fertility intentions and sexual behaviours among HIV-positive women in Uganda. Retrieved October 12, 2012 from <http://www.springerlink.com/content/pw8154n167g15261/fulltext.pdf>
- Kairania, R.M., Gray, R.H., Kiwanuka, N., Makumbi, F., Sewankambo, N.K., Serwadda, D., Nalugoda, F., Kigozi, G., Semanda, J., & Wawer, M.J. (2010). Disclosure of HIV results among discordant couples in Rakai, -Uganda: A facilitated couple counselling approach. Retrieved January 06, 2013, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2936701/>
- Kakaire, O., Osinde, O.O., & Kaye, D.K. (2010). Factors that predict fertility desires for people living with HIV infection at a support and treatment centre in Kabale, Uganda.

Retrieved March 31, 2012, from <http://www.reproductive-health-journal.com/content/7/1/27>

Khanyisa, P. (2010). Factors Influencing Pregnancy Desires Among HIV Positive Women in Gert Sibande District in Mpumalanga, South Africa. Retrieved April 5, 2012, from <http://readperiodicals.com/201012/2187713201.html>

Kipp, W., Heys, H., Jhangri, G.S., Alibhai, A., & Rubaale, T. (2011). Impact of Antiretroviral Therapy on Fertility Desires Among HIV-Infected Persons in Rural Uganda. Retrieved April 20, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3214790/?tool=pmcentrez&report=abstract>

Maier, M., Andia, I., Emenyonu, N., Guzman, D., Kaida, A., Pepper, L., Hogg, R., & Bangsberg, D.R. (2009). Antiretroviral Therapy is Associated with Increased Fertility Desire, but not Pregnancy or Live Birth, among HIV+ Women in an Early HIV Treatment Program in Rural Uganda. Retrieved October 19, 2012, from <http://www.springerlink.com/content/94w85516w4514148/fulltext.pdf>

Makumbi, F.E., Nakigozi, G., Reynolds, S.J., Ndyanabo, A., Lutalo, T., Serwada, D., Nalugoda, F., Wawer, M. & Gray, R. (2010). Associations between Antiretroviral Therapy and the Prevalence and Incidence of Pregnancy in Rakai, Uganda. Retrieved October 12, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3066572/pdf/ART2011-519492.pdf>

Michael, R.S. (2001). Crosstabulation and Chi-square. Retrieved February 3, 2013, from http://www.indiana.edu/~educy520/sec5982/week_12/chi_sq_summary011020.pdf

Ministry of Health and Social Services (MOHSS). (2009). Estimates and Projections of the Impact of HIV/AIDS in Namibia. Windhoek: MOHSS.

Ministry of Health and Social Services (MOHSS). (2010). Report on the 2010 National HIV Sentinel Survey. Windhoek: MOHSS.

Myer, L., Carter, R.J., Katyal, M., Toro, P., El-Sadr, W. M., & Abrams, E. J. (2010). Impact of Antiretroviral Therapy on Incidence of Pregnancy among HIV-Infected Women in Sub-Saharan Africa: A Cohort Study. Retrieved April 5, 2012, from <http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000229>

- Myer, L., Morroni, C., & Rebe, K. (2007). Prevalence and determinants of fertility intentions of HIV-infected women and men receiving antiretroviral therapy in South Africa. Retrieved May 11, 2012, from <http://www.ncbi.nlm.nih.gov/pubmed/17461723>
- Nakayiwa, S., Abang, B., Packel, L., Lifshay, J., Purcell, D.W., King, R., Ezati, E., Mermin, J., Coutinho, A., & Bunnell, R. (2006). Desire for children and pregnancy risk behaviour among HIV-infected men and women in Uganda. Retrieved April 10, 2012, from <http://www.ncbi.nlm.nih.gov/pubmed/16715343>
- Nyblade, L., Stangl, A., Weiss, E., & Ashburn, K. (2009). Combatting HIV Stigma in Healthcare Settings: What Works? Retrieved October 15, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2731724/>
- Peltzer, K., Chao, L. W., & Dana, P. (2009). Family planning among HIV positive and negative Prevention of Mother to Child Transmission (PMTCT) clients in a resource poor setting in South Africa. Retrieved April 9, 2012, from <http://www.springerlink.com/content/p2031n27nu7t1323/>
- QAP Tanzania HIV Stigma Study Team. (2007). Evaluation of Knowledge, Attitudes, and Practices of Health Care Providers toward HIV-positive Patients in Tanzania. *Operations Research Results*. Bethesda: University Research Co.
- Reis, C., Heisler, M., Amowitz, L.L., Moreland, R.S., Mafemi, J.O., Anyamele, C., & Lacopino, V. (2005). Discriminatory Attitudes and Practices by Health Workers toward Patients with HIV/AIDS in Nigeria. Retrieved May 16, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1176239/?tool=pmcentrez>
- Ronsmans, C., & Graham, W. J. (2006). Maternal mortality: who, when, where, and why. Retrieved April 16, 2012, from [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(06\)69380-X/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(06)69380-X/fulltext)
- Sherr, L. (2010). Fathers and HIV: Considerations for Families. Retrieved April 12, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2890973/?tool=pmcentrez>
- Southern Africa HIV/AIDS Information Dissemination Service (SAfAIDS). (2009). Interrogating Culture, Women's Rights and HIV/AIDS in Namibia and Mozambique. Pretoria: SAfAIDS.

United Nations Children's Fund (UNICEF). (n.d.). Namibia Statistics. Retrieved October 21, 2012, from http://www.unicef.org/infobycountry/namibia_statistics.html

WHO, UNAIDS, & UNICEF. (2011). Global HIV/AIDS Response - Epidemic Update and Health Sector Progress Towards Universal Access - Progress Report 2011. Retrieved May 1, 2012, from http://www.who.int/hiv/pub/progress_report2011/en/index.html

Wong, L.H., Van Rooyen, H., Modiba, Richter, L., Gray, G., McIntyre, J.A., Schetter, C.D., & Coates, T. (2009). Test and Tell: Correlates and Consequences of Testing and Disclosure of HIV Status in South Africa (HPTN 043 Project Accept). Retrieved January 06, 2013, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2729272/>

Yeatman, S. (2009). HIV Infection and Fertility Preferences in Rural Malawi. Retrieved October 10, 2012, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2998897/pdf/nihms187841.pdf>

Zibram, F. M. (2007). Chi-square Test for Independence. Retrieved February 3, 2013, from <http://pages.cpsc.ucalgary.ca/~saul/wiki/uploads/CPSC681/topic-fahim-CHI-Square.pdf>

APPENDIX A

Questionnaire on fertility desires and intentions among women living with HIV

#	Item	Responses	Skip
1	Date of interview	DD/MM/YYYY	
Demographic & socioeconomic characteristics			
2	How old are you?	Age in years	
3	Are you currently working?	Yes=1 No=0	
4	What work do you do?	Specify:	
5	What is the highest level of education that you have completed?	Specify: Grade or standard If completed more than matric, enter 'tertiary'	
Reproductive History			
6	Do you have any children?	Yes=1 No=0	
7	If yes, how many?	Enter number of children	
8	How old is the youngest of your children?	Age in years; enter 0 if less than 1 year	
What is the HIV status of your children? (starting with the youngest)			
9	Child 1	Negative=0 Positive=1 Not tested=9	
10	Child 2	Negative=0 Positive=1 Not tested=9	
11	Child 3	Negative=0 Positive=1 Not tested=9	
12	Child 4	Negative=0 Positive=1 Not tested=9	
13	Child 5	Negative=0 Positive=1 Not tested=9	
14	Have you lost a child to a HIV related illness?	Yes=1 No=0	
Partnership status			
15	Are you currently in a relationship?	Yes=1 No=0	
16	How would you describe the relationship?	Married=1 Not married, living together=2 Not living together =3 Other=8 specify:	

#	Item	Responses	Skip
17	How long have you been in this relationship?	Duration in years	
18	Is your current partner the parent of any of your children?	Yes=1 No=0 N/app (no children)=3	
19	Did you disclose your HIV status to your partner?	Yes=1 No=0	
20	What is his HIV status?	HIV positive=1 HIV negative=0 Do not know=9	
21	What is his highest level of education?	Specify: Grade or standard If completed more than matric, enter 'tertiary'	
22	Is he currently working?	Yes=1 No=0	
23	What work does he do?	Specify	
Contraception			
24	Are you currently using any form of contraception?	Yes=1 No=0	
	If yes which of the following methods of contraception are you (or your partner) <u>using currently</u> ? (Read all, circle as many as apply)		
25	Oral contraceptive pill	Yes=1 No=0	
26	3-month injectable ('depo')	Yes=1 No=0	
27	2-month injectable ('nuristerate')	Yes=1 No=0	
28	Intra-uterine contraceptive device (IUCD)	Yes=1 No=0	
29	Male condom	Yes=1 No=0	
30	Female condom	Yes=1 No=0	
31	Other methods	Yes=1 Specify: No=0	
Sexual activity & condom use			
32	Have you had sexual intercourse in the last 3 months?	Yes=1 No=0	
33	When you last had sexual intercourse did you use a male or female condom?	Yes=1 No=0	

#	Item	Responses	Skip
34	How frequently have you / your partner used condoms during sexual intercourse in the last 3 months?	Always (in 100% of the time)=1 Most times (> half of the time)=2 Some times (about half of the time)=3 Occasionally (< half of the time)=4 Never (No condom use in last three months)=5 Not Applicable/not sexually active=7	
	The next few questions refer to the period of time since you found out you were HIV infected		
35	Have you used condoms more frequently, less frequently, or as frequently after you found out you were HIV-infected, compared to before you knew?	More frequently=1 Less frequently=2 About as often=3 Don't know/unsure=9	
36	Have you been treated for an STD/ venereal disease (VD)/disease you got from having sex <u>after you found out you were HIV-positive</u> ?	Yes=1 No=0 Don't know=9	
HIV infection disclosure & stigmatization			
37	Have you told anyone (besides your partner) that you are HIV infected?	Yes=1 No=0	
	If yes, who?		
38	Sibling (sister or brother)	Yes=1 No=0	
39	Parent (mother or father)	Yes=1 No=0	
40	Child (son or daughter)	Yes=1 No=0	
41	Other family member (aunt, uncle, cousin)	Yes=1 No=0	
42	Friend or Neighbour	Yes=1 No=0	
43	Member of support Group	Yes=1 No=0	
44	Other, Specify:	Yes=1 No=0	
45	What do you feel was the reaction of people when you first told them that you were HIV infected? (read all options)	Very positive=1 Mostly positive=2 Mixed=3 Negative=4 Very negative=5	
46	How do you think <u>people in your family</u> feel about HIV-infected people generally? (read all options)	Very positive/not at all afraid=1 Mostly positive/not afraid=2 Mixed feelings=3 Some fear/dislike=4 Very afraid/dislike very much=5	
47	Do you think that <u>people in your family</u> treat you differently because you are HIV-infected?	Yes=1 No=0 Don't know=9	
48	How do you think <u>people in your community</u> feel about HIV-infected people generally? (read all options)	Very positive/not at all afraid=1 Mostly positive/not afraid=2 Mixed feelings=3 Some fear/dislike=4 Very afraid/dislike very much=5	

#	Item	Responses	Skip
49	Do you think that <u>people in your community</u> treat you differently because you are HIV-infected?	Yes=1 No=0 Don't know=9	
50	How do you think <u>health care providers</u> at the clinic feel about HIV-infected people generally? (read all options)	Very positive/not at all afraid=1 Mostly positive/not afraid=2 Mixed feelings=3 Some fear/dislike=4 Very afraid/dislike very much=5	
51	Do you think that <u>health care providers</u> at the clinic treat you differently because you are HIV-infected?	Yes=1 No=0 Don't know=9	
52	Do you think that HIV-infected people can look forward to the future?	Yes=1 No=0 Don't know=9	
Antiretroviral therapy			
53	Have you ever been given medication at the clinic to specifically prevent the mother-to-child transmission (PMTCT) of HIV infection?	Yes=1 No=0	
54	If yes, during how many pregnancies have you received medication for this purpose?	Number	
55	Are you on ARVs?	Yes=1 No= 0	
56	If yes, approximately how long have you been taking ARVs?	Years: Months:	
57	Do you think being on antiretroviral therapy should make HIV-infected people think differently about their lives, compared to if they were not on antiretroviral therapy?	Yes=1 No=0 Don't know=9	
58	Do you think being on ARVs (or their availability) empowers people to have (more) children?	Yes= 1 No=0	
59	Since you found out that you have HIV, have you become pregnant?	Yes= 1 No= 0	
60	If yes, how many times?	Number of times	
61	How many of these pregnancies were planned?	State number	
62	How many of these pregnancies were conceived while you were on ARVs?	State number	
Current fertility desires and intentions			
63	Have you thought about having (more) children since you found out that you were HIV-infected?	Yes=1 No=0	
64	Would you want to have (more) children at some point in the future?	Yes=1 No=0	
65	If yes, what makes you want to have (more) children in the future?	Describe	

#	Item	Responses	Skip
66	If yes, what things may discourage you from having (more) children in the future?	Describe	
67	If no, why do you not want to have more children in the future?	Describe	
68	Have you discussed having (more) children in the future with your partner?	Yes=1 No=0 N/A (no partner)=7	
69	If yes, how would you describe your partner's opinion on whether to have (more) children?	Very positive=1 Mostly positive=2 Mixed=3 Negative=4 Very negative=5	
70	How strongly does your partner's opinion influence your decision whether or not to have children? (read all options)	Very strongly/must agree with=1 Somewhat/take into consideration=2 Little/nice to know=3 No influence at all=4 N/A (no partner)=7	
71	How strongly does your family's opinion influence your decision whether or not to have (more) children?	Very strongly/must agree with=1 Somewhat/take into consideration=2 Little/nice to know=3 No influence at all=4	
72	How strongly does the community's opinion influence your decision whether or not to have (more) children? (read all options)	Very strongly/must agree with=1 Somewhat/take into consideration=2 Little/nice to know=3 No influence at all=4	
73	Do you plan to become pregnant within the next two years?	Yes=1 No=0 Don't know=9	
Interactions with health services on reproduction			
74	Since you became HIV-infected, have you discussed having (more) children in the future with a <u>health worker</u> working at a hospital or clinic?	Yes=1 No=0	
75	If yes, what was the position of that health worker?	Nurse=1 Counsellor=2 Doctor=3 Pharmacist=3 Other=4 (specify)	
76	How do you think that <u>health worker</u> felt about the possibility of you having (more) children? (read all options)	Very positive=1 Mostly positive=2 Mixed feelings/had no opinion=3 Negative=4 Very negative=5	
77	How strongly has that health worker's opinion influenced your decision whether or not to have (more) children?	Very strongly/must agree with=1 Somewhat/take into consideration=2 Little/nice to know=3 No influence at all=4	
Availability and Sustainability of Treatment and Care			
78	Do you think that antiretroviral therapy (ARVs) is available to all HIV-infected people who need it?	Yes=1 No=0 Don't know=9	

#	Item	Responses	Skip
79	Do you believe the country's clinics will continue to provide free ARVs for a long time to come?	Yes=1 Not sure=2 No=3	
80	Do you think ARVs allow HIV-infected people to live as long as HIV negative persons?	Yes=1 Not sure=2 No=3	
Knowledge of Mother to Child HIV Transmission			
81	"Pregnant women who are HIV positive transmit the virus to their babies."	Never=1 Sometimes=2 Always=3	
82	"Pregnant women on ARVs have less chances of infecting their babies during delivery."	Strongly disagree=1 Disagree=2 Neutral=3 Agree=4 Strongly agree=5	
83	"Women on ARVs have less chances of infecting their babies during breastfeeding."	Strongly disagree=1 Disagree=2 Neutral=3 Agree=4 Strongly agree=5	
Conclusion			
84	Do you think that you may like to discuss issues regarding childbearing more in the future?	Yes=1 No=0	
85	If yes, with whom would you like to discuss these issues? (Read all, circle as many as apply)	Nurse (professional, enrolled)=1 Counsellor=2 Doctor=4 Other (professional)=8 specify: Other (non-professional)=9 specify:	
This is the end of the interview. Thank you for your time.			

Appendix B

Omapulapulo koomeme tavalumbu nombuto kombinga yehalo lokumona uunona

#	oshiyemo	omanyamukulo	Skip
86	Efiku lomapulapulo	DD/MM/YYYY	
Onakuyiwa yoye			
87	Ouna eedula ngapi?	eedula	
88	Oholongo?	Yes=1 eeno=1 No=0 ahawe=0	
89	Oholongo peni?	Yelitha	
90	Owaxulila mongapi melongo loye?	Tumbula Ondondo yeilongo	
Olundalo uunona			
91	Ouna ounona?	eeno=1 ahawe=0	
92	Ngeenge ouna, oveli vangapi?	Nyola omwaalu uunona	
93	Okaana koye aka kashona okena eedula ngapi?	Eedula duunona, nyola 0 ngeenge okaana inakayanifa odula	
	Omanyamukulo ounona voye oveli ngahelipi ombuto yo HIV? (Tameka nookana aka kashona)		
94	Okaana kotete	Onyamukulo lili nawa=0 Enyamukulo kalili nawa=1 inakakonakonwa=9	
95	Okaana okativali	Onyamukulo lili nawa=0 Enyamukulo kalili nawa=1 inakakonakonwa=9	
96	Okaana okatitatu	Onyamukulo lili nawa=0 Enyamukulo kalili nawa=1 inakakonakonwa=9	
97	Okana okatine	Onyamukulo lili nawa=0 Enyamukulo kalili nawa=1 inakakonakonwa=9	
98	Okaana okatitano	Onyamukulo lili nawa=0 Enyamukulo kalili nawa=1 inakakonakonwa=9	
99	Owa kanifa kamwe komounona voye kouvela weetwapo shaashi kena ombuto?	eeno=1 ahawe=0	
Ekwatafano novalumenhu			
100	Ouna omushamane?	Yes=1 No=0	

#	oshiyemo	omanyamukulo	Skip
101	Onghalafano pokati keni nomushamane woye otoy i hokolola ngahelipi?	omwahombola=1 inamu hombola, ohamukala pamwe=2 ihamukala pamwe=3 yimwe vali inayitumbulwa=8	
102	Omwa kala nomushamane woye efimbo lifike peni?	Efimbo meedula	
103	Omushamane ou muli naye oye tate wounona voye?	eeno=1 ahawe=0 N/app (kuna uunona)=3	
104	Owa lombwela omushamane woye omanyamukulo oye ombuto yoHIV?	eeno=1 ahawe=0	
105	Omanyamukulo aye ombuto yoHIV okuli ngahelipi?	HIV positive=1 HIV negative=0 Kandishishi=9	
106	Okwa xulila mongapi melongo laye?	Specify: Grade or standard If completed more than matric, enter 'tertiary'	
107	Oha longo?	eeno=1 ahawe=0	
108	Nge oha longo, oha longo oilonga yashike?	Popya apa lela holongo	
Omikalo dokwiingabeka oludalo			
109	Oto longifa omikalo dilipi do kwiingabeka eteelelo	eeno=1 ahawe=0	
	Ngeenge heeno omukalo uli holongifa ile omushamane woye halongifapaife?(lesha ngaashi tashi landula ndele tohololamo oo holongifa)		
110	Eepela?	eeno=1 ahawe=0	
111	Ovenda yeemwedi nhatu(depo)?	eeno=1 ahawe=0	
112	Ovenda yeemwedi mbali (nuristerate)?	eeno=1 ahawe=0	
113	Intra-uterine device (IUD)?	eeno=1 ahawe=0	
114	Eekondoma dootate?	eeno=1 ahawe=0	
115	Eekondoma doomeme?	eeno=1 ahawe=0	
116	Omikalo dimwe vali?	eeno=1 hokolola kutya omukalo guni lela holokifa ahawe=0	
Okuya momilele nelo ngifo leekoondoma			

#	oshiyemo	omanyamukulo	Skip
117	Owaya momilele moule wemwedi nhatu dakapita?	eeno=1 ahawe=0	
118	Efiku wiixula momilele owa longifa okoondoma yoomeme ile oyo tate?	eeno=1 ahawe=0	
119	Oha mu longifa okoondoma lungapi nye nomukulukadi / omushamane woye lungapi moule wemwedi nhatu dakapita?	alushe (eepercenta 100% keshe efimbo handii momilele)=1 luhupu hadii momilele (> half of the time)=2 omafimbo amwe ashike (about half of the time)=3 omalupita (< half of the time)=4 ino longifa okondoma uule wemwedi nhatu)5 ihoyi momilele=7	
	Omapulo alandulako oku nasha nokudja pefimbo eli wamonika ombuto		
120	Owa longifa okoondoma lungapi oku dja kefiku eli wa monikwa ombuto oku shi yeleka naashi kwali manga iinokonaakonhwa?	Omafimbo mahapu=1 Omafimbo mashona=2 Omafimbo ashona lela=3 kandishishi=9	
121	Owa hakulwa nale omikifi dohoni okudja efiku eli wamonikwa ombuto?	eeno=1 ahawe=0 kandishishi=9	
Ombuto yoHIV nelihumbato lovanhu			
122	Kakele komushamane woye owa lombwela vali omunhu umwe eli po enyamukulo loye?	eeno=1 ahawe=0	
	Ngeenge heeno, olye?		
123	Omumwameme woye womumati ile owomukadona?	eeno=1 ahawe=0	
124	Otate woye ile omeme woye?	eeno=1 ahawe=0	
125	Okaana koye?	eeno=1 ahawe=0	
126	Otatekulu woye ile omeekulu woye?	eeno=1 ahawe=0	
127	Okaume koye ile omushiinda shoye?	eeno=1 ahawe=0	
128	Umwe womeengudu dina sha novanhu ava tava lumbu nombuto”	eeno=1 ahawe=0	
129	Umwe eli po vali(, yeleka kutya olye)	eeno=1 ahawe=0	
130	Eshi walombwela ovanhu tete kutya owa monika ombuto omaihumbato avo kwoove aali ngahelipi?(lesha omahololo aeshe)	Oveshi tambulako uunene=1 Oveshi tamulako ngoo=2 Vamwe ovali vafa vangwangwana=3 inavashitamulako=4 ineveshitamulako nande nande=5	

#	oshiyemo	omanyamukulo	Skip
131	Ovanhu mofamilii yoye ove udite ko ngahelipi kombinga yovahnu ava vakwatwa kombuto yoHIV?(lesha omahololo aeshe)	Kakwali vatila nande osha=1 Okwali vatila=2 Okwali vangwangwana=3 Vamwe okwali vena uumbanda=4 Okwali vatila uunene=5	
132	Ou wete omalihumbato ovanhu vomofamili yoye alunduluka eshi wevalombwela kutya ouna ombuto?	eeno=1 ahawe=0 kandishishi=9	
133	Ovanhu vo pomudingonoko woye ove udite ko ngahelipi kombinga yovanhu ava vakwatwa kombuto yoHIV?	Inavtila nade okashona =1 Kavena uumbanda=2 Vamwe ovafa vangwangwana=3 Wamwe ovatila=vamwe ovatila neenghono=5	
134	Ou wete ovanhu vo pomudingonoko woye have kuli humbatale ngahelipi eshi wa monika ombuto?	eeno=1 ahawe=0 kandishishi=9	
135	ovayandji vouhaku poclinic ove udite ko ngahelipi kombinga yovanhu ava vakwatwa kombuto?lesha omahololo aeshe	Oveli nawa lela=1 Oveli nawa=2 Ohavakala vafa valimililwa=3 Vamwe ovena uumbanda kashona=4 Vamwe ovatila=5	
136	Ou wete vafa have kuli humbatele shayooloka shashi una ombuto?	eeno=1 ahawe=0 kandishishi=9	
137	Ovena ko nasha shinasha nonghalamwenyo eshi vatala ovanhu tava lumbu nombuto?	eeno=1 ahawe=0 kandishishi=9	
Omiti ndokulelepeka onghalamwenyo			
138	Owa tambula nale eepela edi hadi pewa oomeme veli meteelelo doku amena okaana ka hakwetwe?	eeno=1 ahawe=0	
139	Ngeenge heeno owa tambula lunapii omiiti edi?	meenomola	
140	Ouli kepango?	eeno=1 ahawe= 0	
141	Ngeenge heeno, kepango owa kalako efimbo lifike peni?	eedula: eemwedi:	
142	Onghalamwenyo yomunhu eli kepango oya yooloka konghalamwenyo yaawu eheli kepango?	eeno=1 ahawe=0 kandishishi=9	
143	Ou dite oku kala kepango otashi yandje omukumo koomeme va mone ounona?	eeno= 1 ahawe=0	
144	Okudja kefikulu eli wa monika ombuto owa ninga eteelelo?	eeno= 1 ahawe= 0	
145	Ngeenge heeno, owa ninga omateelelo angapi?	Omwaalu womateelelo	
146	Omateelelo angapi kwali a longekidwa?	Tumula meenomola	
147	Owa ninga omateelelo a ngaapi eshi uli kepango?	Tumbula meenomola	

#	oshiyemo	omanyamukulo	Skip
Ehlo nomalongekido oku mona ounona			
148	Owa kwatwa nande nale kediladilo lokumona ounona okudja kefimbo eli wamonika kutya ouna ombuto?	eeno=1 ahawe=0	
149	Owa hala oku mona ounona moule wonghalamwenyo yoye?	eeno=1 ahawe=0	
150	Ngeenge heeno? Oshike sheku halifa oku ka mona ounona monghalamwenyo?	hokolola	
151	Ngeenge heeno oinima ilipi tai ku shololifa oku hamona ounona monakuyiwa?	hokolola	
152	Ngeenge ahawe, omolwashike ino hala oku mona ounona monakuyiwa yoye?	hokolola	
153	Omwa kundafana oku mona ounona nye nomushamane woye?	eeno=1 ahawe=0 kandinasha omusamane=7	
154	Ngeenge heeno, omdiladilo aye okwali ngahelipi kombinga yoku mona ounona?	Okwali eli nawa lela (iitavela neenghono=1 Okwali ngoo itavela=2 Okwali afa alimbililwa=3 Ina itavela=4 Inahala nande nande=5	
155	Omdiladilo omushamane woye okweku kwafela ngahelipi metokolo eli lokumona uunona ile lokuhamona? (Lesho omanyamukulo aeshe)	Eekukwafela neenghono=1 Emekukwafela ngoo opo todiladila nawa=2 Omekukwafela kashona=3 inemekukwafelashal=4 kandinasha omusamane=7	
156	Omawedelepo ovanhu mofamili yoye okwekukwafela ngahelipi oku ninga etokolo loku mona ounona ile loku hamona?	Eekukwafela neenghono=1 Emekukwafela ngoo opo todiladila nawa=2 Omekukwafela kashona=3 inamekukwafelashal=4	
157	Omdiladilo ovanhu vopomudingonoko okwekukwafela ngahelipi oku ninga etokolo lokumona uunonona ile loku hamona?(lesha omanyamukulo aeshe)	Eekukwafela neenghono=1 Emekukwafela ngoo opo todiladila nawa=2 Omekukwafela kashona=3 inemekukwafelashal=4	
158	Owa diladila oku ninga eteelelo meedula mbali komesho?	eeeno=1 ahawe=0 kandishishi=9	

#	oshiyemo	omanyamukulo	Skip
Ekwatafano naayandji vuuhaku kombinga yoku mona ounona			
159	Okudja efiku wamonika ombuto owaile meenghundafana naumwe wovayandji vouhaku poclinic yoye kombinga yoku mona ounona?	eeno=1 ahawe=0	
160	Ngeenge heeno, omwaudafana ngahelipi?	omupangi=1 omuhungi mwenyo=2 dokotola=3 omuyandji womiti=4 wumwe vali inatumbula=5 (yelifa nawa kutya ondje)	
161	Omadiladilo omuyakuli ou (omuyandji wouhaku)okwalii ngahelipi?(Lesha omanyamukulo aeshe)	Okwali meli nawa lela=1 Okwali ngoo meli nawa=2 Okwali afa alimbilwa=3 Okwali tama fifi uunye=4 Okwali tama fifa lela uunye neenghona=5	
162	Omadiladilo omuhakuli ou okwekukwafela ngahelipi moshinima eshi shoku mona ounona?	Omakwafelange lela=1 Omakwafelange ngoo=2 Omakwafelange kashona=3 Inaa kwafelange nande osha=4	
ouhapu nekwato nawa lomiti depango			
163	Oudite kutya omiti edi depango odiili ngoo kovanhu aveshe ava vedi pumbwa?	eeno=1 ahawe=0 kandi shishi=9	
164	Owa itavela kutya omiti edi depano taditwikile oku kala hadi yandjwa oshali muuclinic aveshe moshilongo?	eeno=1 inandishishiva nawa=2 ahawe=3	
165	Ouwete omiti edi depango, otandikwafele ovanhu ava vena ombuto va kale monghalamwenyo ile ngaashi naana ava vehena ombuto?	eeno=1 kandishishi nawa=2 ahawe=3	
Omauyelele kombinga yokwaamena okaana keli medimo kaakakwatwe kombuto			
166	“Oomeme veli momateelelo oveli moshiponga okupa okaana aka keli medimo ombuto”	Nande nande=1 Efimbo limwe=2 Alushe=3	
167	“Omhito yoomeme ava veli kepango okupa okaana aka keli medimo ombuto oishona”	Inandiitavela nande nande=1 inandiitavela=2 mutu ngool=3 eeno osho lela=4 Strongly agree=5	
168	“Oomeme tava nyamifa veli kepango omhito yoku tandavelifa ombuto kokaana oishona	Ahawe nandenande=1 ahawe=2 mutu ngoo=3 eeno=4 eeno lela lela=5	
ehuliilo			
169	Ou wete wapumbwa oku kundafana kombinga yo kumona ounona moule wonakuyiwa yoye?	eeno=1 ahawe=0	

#	oshiyemo	omanyamukulo	Skip
170	Ngeenge heeno, oye wahala uka kundafane naye? (Leshā ndee tohoolola oto dulu oku kelenga shi dilife penyamukulo limwe)	aapangi=1 omuhungi mwenyo=2 dokotola=4 aanhu vamwe velili (yeleka kutya velipil)=8 aahu vamwe velili (non-professional)=9 (yeleka kutya velipi)	
Eli ehulilo lomapulapulo tangi uunene kefimbo loye			

Appendix C

Ontwerp-vraestel oor vrugbaarheids-begeertes en -voornemens onder vrouens wat met MIV lewe

#	Item	Antwoorde	Slaan oor
171	Datum van onderhoud	DD/MM/YYYY	
Demografie & sosio-ekonomiese eienskappe			
172	Hoe oud is u?	Ouderdom in jare	
173	Werk u tans?	Ja=1 Nee=0	
174	Watter tipe werk doen u?	Spesifiseer:	
175	Wat is die hoogste opvoedkundige vlak wat u voltooi het?	Spesifiseer: Graad of standerd Indien hoër as matriek, dui 'tersiër' aan.	
Voortplantings-geskiedenis			
176	Het u enige kinders?	Ja=1 Nee=0	
177	Indien ja, hoeveel?	Dui aantal kinders aan	
178	Hoe oud is die jongste van u kinders?	Ouderdom in jare; dui 0 aan indien jonger as 1 jaar	
	Wat is die MIV-status van u kinders? (Begin met die jongste)		
179	Kind1	Negatief=0 Positief=1 Nie getoets nie=9	
180	Kind 2	Negatief=0 Positief=1 Nie getoets nie=9	
181	Kind 3	Negatief=0 Positief=1 Nie getoets nie=9	
182	Kind 4	Negatief=0 Positief=1 Nie getoets nie=9	
183	Kind 5	Negatief=0 Positief=1 Nie getoets nie=9	
184	Het u enige kinders as gevolg van MIV-verwante siektes verloor?	Ja=1 Nee=0	
Verhouding-status			
185	Is u tans in 'n verhouding?	Ja=1 Nee=0	

#	Item	Antwoorde	Slaan oor
186	Hoe sal u die verhouding beskryf?	Getroud=1 Ongetroud, woon saam=2 Woon nie saam nie =3 Ander=8, spesifiseer:	
187	Hoe lank is u al in hierdie verhouding?	Tydperk in jare	
188	Is u huidige lewensmaat die ouer van enige van u kinders?	Ja=1 Nee=0 Nie toepaslik (geen kinders)=3	
189	Het u u MIV-status aan u lewensmaat bekendgemaak?	Ja=1 Nee=0	
190	Wat is u MIV-status?	MIV positief=1 MIV negatief=0 Weet nie=9	
191	Wat is sy hoogste opvoedkundige vlak?	Spesifiseer: Graad of standerd Indien hoër as matriek, dui 'tersiër' aan	
192	Werk hy tans?	Ja=1 Nee=0	
193	Watter tipe werk doen hy?	Spesifiseer	
Voorbehoeding			
194	Gebruik u tans enige vorm van voorbehoeding?	Ja=1 Nee=0	
	Indien ja, watter van die volgende voorbehoed-metodes gebruik u (of u lewensmaat) tans? Lees almal en omkring almal wat toepaslik is)		
195	Mondelinge Voorbehoed-pil	Ja=1 Nee=0	
196	3-maandelikse inspuiting ('depo')	Ja=1 Nee=0	
197	2-maandelikse inspuiting ('nuristerate')	Ja=1 Nee=0	
198	Intra-baarmoeder toestel (IUD)	Ja=1 Nee=0	
199	Konoom vir mans	Ja=1 Nee=0	
200	Konoom vir vrouens	Ja=1 Nee=0	
201	Ander metodes	Ja=1 Spesifiseer: Nee=0	
Seksuele aktiwiteit en kondoom-gebruik			
202	Het jy'n seksuele verhouding gehad vir die laaste 3 maande?	Ja=1 Nee=0	
203	Toe u laas seksuele omgang gehad het, het u 'n kondoom vir mans of 'n kondoom vir vrouens gebruik?	Ja=1 Nee=0	

#	Item	Antwoorde	Slaan oor
204	Hoe gereeld het u / u lewensmaat die afgelope 3 maande kondome tydens seksuele omgang gebruik?	Altyd (100% van die tyd)=1 Meeste kere (> helfte van die tyd)=2 Partykeer (omtrent die helfte van die tyd)=3 Soms (< helfte van die tyd)=4 Nooit (Geen kondoom-gebruik in die laaste 3 maande nie)=5 Nie toepaslik/nie seksueel aktief nie=7	
	Die volgende paar vrae verwys na die tydperk sedert u uitgevind het dat u MIV opgedoen het		
205	Het u kondome meer gereeld, minder gereeld of so gereeld soos voorheen gebruik, nadat u uitgevind het dat u MIV opgedoen het, in vergelyking met die tydperk voordat u geweet het?	Meer gereeld=1 Minder gereeld=2 Omtrent dieselfde=3 Weet nie/is onseker=9	
206	Is u behandel vir 'n Seksueel Oordraagbare Siekte / geslagsiekte / ander siekte, wat u as gevolg van seksuele omgang opgedoen het, sedert u uitgevind het dat u MIV-positief is?	Ja=1 Nee=0 Weet nie=9	
MIV-infeksie bekendmaking & stigmatisering			
207	Het u vir enigiemand, (behalwe u lewensmaat) vertel dat u MIV opgedoen het?	Ja=1 Nee=0	
	Indien ja, vir wie?		
208	Broer of Suster	Ja=1 Nee=0	
209	Ouer (vader of moeder)	Ja=1 Nee=0	
210	Kind (seun of dogter)	Ja=1 Nee=0	
211	Ander familie-lid (tannie, oom, neef, niggie)	Ja=1 Nee=0	
212	Vriend of buurman/-vrou	Ja=1 Nee=0	
213	Lid van 'n ondersteunersgroep	Ja=1 Nee=0	
214	Ander, Spesifiseer:	Ja=1 Nee=0	
215	Wat het u gedink was die reaksie van mense, toe u hulle die eerste keer vertel het dat u MIV opgedoen het? (lees al die keuses)	Baie positief=1 Meestal positief=2 Gemeng=3 Negatief=4 Baie negatief=5	
216	Hoe dink u voel die mense in u gesin/familie oor die algemeen oor mense met MIV? (lees al die keuses)	Baie positief/glad nie bang nie=1 Meestal positief/nie bang nie=2 Gemengde gevoelens=3 Mate van vrees/afkeur=4 Baie bang/ernstige afkeur=5	
217	Dink u dat mense in u gesin/familie u anders behandel omdat u MIV opgedoen het?	Ja=1 Nee=0 Weet nie=9	
218	Hoe dink u voel mense in u gemeenskap oor die algemeen oor mense met MIV (lees al die keuses)	Baie positief/glad nie bang nie=1 Meestal positief/nie bang nie=2 Gemengde gevoelens=3 Mate van vrees/afkeur=4 Baie bang/ernstige afkeur=5	

#	Item	Antwoorde	Slaan oor
219	Dink u dat mense in u <u>gemeenskap</u> u anders behandel omdat u MIV opgedoen het?	Ja=1 Nee=0 Weet nie=9	
220	Hoe dink u voel <u>gesondheidsorg verskaffers</u> by die kliniek oor die algemeen oor mense met MIV? (lees al die keuses)	Baie positief/glad nie bang nie=1 Meestal positief/nie bang nie=2 Gemengde gevoelens=3 Mate van vrees/afkeur=4 Baie bang/ernstige afkeur=5	
221	Dink u dat <u>gesondheidsorg verskaffers</u> by die kliniek u anders behandel omdat u MIV opgedoen het?	Ja=1 Nee=0 Weet nie=9	
222	Dink u dat mense met MIV kan uitsien na die toekoms?	Ja=1 Nee=0 Weet nie=9	
Antiretrovirale behandeling			
223	Het u ooit enige medikasie by die kliniek ontvang, wat spesifiek bedoel is om die oordrag van moeder-na-kind van MIV-infeksie te verhinder?	Ja=1 Nee=0	
224	Indien ja, tydens hoeveel swangerskappe het u medikasie vir hierdie doel ontvang?	Aantal	
225	Gebruik u tans Antiretrovirale medikasie?	Ja=1 Nee= 0	
226	Indien ja, vir omtrent hoe lank neem u al Antiretrovirale medikasie?	Jare: Maande:	
227	Dink u dat mense met MIV anders oor hulle lewens behoort te dink wanneer hulle op Antriretrovirale behandeling is, in vergelyking daarmee as hulle nie sulke behandeling sou ontvang nie?	Ja=1 Nee=0 Weet nie=9	
228	Dink u dat dit mense bemaagtig om (meer) kinders te hê as hulle op Antiretrovirale behandeling is (of indien dit beskikbaar is)?	Ja= 1 Nee=0	
229	Het u swanger geraak nadat u uitgevind het dat u MIV opgedoen het?	Ja= 1 Nee= 0	
230	Indien ja, hoeveel keer?	Aantal kere	
231	Hoeveel van hierdie swangerskappe was beplan?	Dui aantal aan	
232	Hoeveel van hierdie swangerskappe het voorgekom terwyl u op Antiretrovirale behandeling was?	Dui aantal aan	
Huidige voortplantings-begeertes en -voornemens			
233	Het u daaraan gedink om (meer) kinders te hê sedert u uitgevind het dat u MIV opgedoen het?	Ja=1 Nee=0	
234	Wil u (meer) kinders iewers in die toekoms hê?	Ja=1 Nee=0	
235	Indien ja, wat laat u voel dat u (meer) kinders in die toekoms wil hê?	Beskryf	

#	Item	Antwoorde	Slaan oor
236	Indien ja, wat sal u moontlik ontmoedig om (meer) kinders in die toekoms te hê?	Beskryf	
237	Indien nee, hoekom wil u nie in die toekoms (meer) kinders hê nie?	Beskryf	
238	Het u al ooit met u lewensmaat daaroor gepraat om (meer) kinders in die toekoms te hê?	Ja=1 Nee=0 Nie toepaslik (geen lewensmaat)=7	
239	Indien ja, hoe sal u u lewensmaat se siening, oor die moontlikheid om (meer) kinders te hê, beskryf?	Baie positief=1 Meestal positief=2 Gemeng=3 Negatief=4 Baie negatief=5	
240	Hoe sterk beïnvloed u lewensmaat se siening u besluit of u kinders wil hê of nie (lees al die keuses).	Baie sterk/moet saamstem=1 Ietwat/neem in ag=2 Min/goed om te weet=3 Geen invloed nie=4 Nie toepaslik (geen lewensmaat)=7	
241	Hoe sterk tel u gesin se siening in u besluit of u (meer) kinders wil hê of nie?	Baie sterk/moet saamstem=1 Ietwat/neem in ag=2 Min/goed om te weet=3 Geen invloed nie=4	
242	Hoe sterk beïnvloed die gemeenskap u besluit of u (meer) kinders wil hê of nie? (lees al die keuses)	Baie sterk/moet saamstem=1 Ietwat/neem in ag=2 Min/goed om te weet=3 Geen invloed nie=4	
243	Beplan u om binne die volgende twee jaar swanger te raak?	Ja=1 Nee=0 Weet nie=9	
Interaksie met gesondheidsdienste oor voortplanting			
244	Het u die moontlikheid om in die toekoms (meer) kinders te hê met 'n <u>gesondswerker</u> by 'n hospitaal of kliniek bespreek?	Ja=1 Nee=0	
245	Indien ja, wat was daardie gesondswerker se beroep?	Verpleegster=1 Raadgewer=2 Dokter=3 Apteker=3 Ander=4 (spesifiseer)	
246	Hoe dink u het daardie <u>gesondswerker</u> oor die moontlikheid dat u (meer) kinders wil hê gevoel? (lees al die keuses)	Baie positief=1 Meestal positief=2 Gemeng=3 Negatief=4 Baie negatief=5	
247	Hoe sterk het daardie gesondswerker se mening u beïnvloed in u keuse of u (meer) kinders wil hê of nie?	Baie sterk/moet saamstem=1 Ietwat/neem in ag=2 Min/goed om te weet=3 Geen invloed nie=4	
Beskikbaarheid en Volhoubaarheid van Behandeling en Sorg			
248	Dink u dat antiretrovirale behandeling vir alle mense met MIV, wat dit nodig het, beskikbaar is?	Ja=1 Nee=0 Weet nie=9	

#	Item	Antwoorde	Slaan oor
249	Glo u dat die land se klinieke sal kan volhou daarmee om, vir nog 'n lang tyd, gratis antiretrovirale medikasie beskikbaar te stel?	Ja=1 Nie seker nie=2 Nee=3	
250	Dink u dat Antiretrovirale medikasie mense met MIV toelaat om so lank soos MIV-negatiewe mense te lewe?	Ja=1 Nie seker nie=2 Nee=3	
Kennis oor Moeder-tot-Kind oordrag van MIV			
251	“Swanger vrouens, wat MIV positief is, dra die virus oor aan hulle babas”.	Nooit=1 Soms=2 Altyd=3	
252	“Swanger vrouens wat Antiretrovirale medikasie gebruik se kansse is minder om hulle babas tydens kraam aan te steek”.	Stem glad nie saam nie=1 Stem nie saam nie=2 Neutraal=3 Stem saam=4 Stem beslis saam=5	
253	“Vrouens wat Antiretrovirale medikasie gebruik se kansse om hulle babas tydens borsvoeding aan te steek is minder”.	Stem glad nie saam nie=1 Stem nie saam nie=2 Neutraal=3 Stem saam=4 Stem beslis saam=5	
Afsluiting			
254	Dink u dat u sake oor ouerskap meer gereeld in die toekoms sal wil bespreek?	Ja=1 Nee=0	
255	Indien ja, met wie sou u graag hierdie sake wil bespreek? (lees al die keuses en omkring almal wat van toepassing is)	Verpleegster (professioneel, geregistreer)=1 Raadgewer=2 Dokter=4 Ander (professioneel)=8 spesifiseer: Ander (nie-professioneel)=9 spesifiseer:	
Dit is die einde van die onderhoud. Dankie vir u tyd.			

Appendix D

Questionnaire on health-worker attitudes towards fertility among women living with HIV.

#	Item	Responses	Skip
256	Date	DD/MM/YYYY	
Demographic & Professional characteristics			
257	Sex	Female=1 Male=2	
258	How old are you?	Age in years	
259	What is your position at the clinic?	Counselor Enrolled nurse Registered nurse Pharmacy assistant Pharmacist Medical officer	
260	For how long have you worked in ART clinics?	Number of years or months	
261	Which of these languages do you speak fluently?	English Afrikaans Oshiwambo Otjiherero Damara/nama Kwangali Silozi Other Namibian language (specify)	
What is your opinion on the following statements regarding HIV positive women and childbearing?			
262	I INITIATE discussions on pregnancy desires/intentions with HIV positive women attending the clinic.	Strongly agree Agree Neutral Disagree Strongly disagree	
263	Women of reproductive age have brought up the issue of wanting to fall pregnant during consultations with me.	Strongly agree Agree Neutral Disagree Strongly disagree	
264	Women living with HIV who have no children should be encouraged to fall pregnant if they express such a desire.	Strongly agree Agree Neutral Disagree Strongly disagree	
265	Women living with HIV who already have children should be encouraged to fall pregnant if they express such a desire.	Strongly agree Agree Neutral Disagree Strongly disagree	
266	The physical health of a woman including CD4 counts, viral load and being on ARVs is more important than her right to choose to become pregnant.	Strongly agree Agree Neutral Disagree Strongly disagree	

#	Item	Responses	Skip
267	The decision to become pregnant should be reached only after consultation with a health professional.	Strongly agree Agree Neutral Disagree Strongly disagree	
268	Becoming pregnant and delivering a HIV positive baby when fully aware of one's status is a sign of irresponsibility by the mother.	Strongly agree Agree Neutral Disagree Strongly disagree	
269	Sexually active women attending KHC generally do not use condoms, they only say they are using them to please clinic staff.	Strongly agree Agree Neutral Disagree Strongly disagree	
Conclusion			
270	Do you feel that people living with HIV deserve their condition as punishment for misbehaving?	Yes=1 No=0	
271	Do you think people on ART can live as long as HIV negative persons?	Yes=2 Rarely=1 No=0	
272	Do you think that HIV-infected people can look forward to the future?	Yes=1 No=0 Don't know=9	
273	Do you communicate freely with your patients on issues of sex, contraception and childbearing?	Yes=1 No=0	
274	If no, can you give reasons why you fail to communicate freely.	State your reasons;	
275	Do you think you have the necessary knowledge and skills to appropriately counsel women living with HIV on issues of sex, contraception and having children?	No=1 Somewhat=2 Yes=3	
276	Since you started working with HIV patients, are you seeing an increasing number of women choosing to become pregnant while aware of their HIV status?	Yes=1 No=0	

#	Item	Responses	Skip
277	If yes, does this worry you?	Yes=1 No=0 State you reasons;	
This is the end of the questionnaire. Thank you for your time.			

Appendix E



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvennoot • your knowledge partner

**STELLENBOSCH UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH**

Factors Associated with Fertility Desires and Intentions Among HIV Positive Women Enrolled at a HIV Treatment Clinic in Windhoek, Namibia- Health-worker subgroup.

You are asked to participate in a research study conducted by Tafadzwa Chakare (MBChB, PDM), from the Africa Centre for HIV/AIDS Management at Stellenbosch University. The results of this study will contribute to a research thesis. You were selected as a possible participant in this study because you are a health-worker based at Katutura Health Centre.

1. PURPOSE OF THE STUDY

To determine the factors influencing childbearing decisions among HIV positive women in Windhoek's Katutura Township so as to improve sexual and reproductive health services for people living with HIV attending Katutura Health Centre.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to answer questions from a questionnaire to which you will respond in writing. This will take about 10 minutes and is a one-off event.

3. POTENTIAL RISKS AND DISCOMFORTS

No risks or discomforts are expected to emanate from your participation in this study.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study hopes to benefit HIV care providers in Namibia as well as those in similar settings by giving them a better understanding of the attitudes of women living with HIV towards childbearing. By so doing, it hopes to improve sexual and reproductive health services provided to people living with HIV.

5. PAYMENT FOR PARTICIPATION

There will be no payment for participation.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained through the non-use of participant identifiers. No names will be recorded. Additionally the data collected will be stored in a password protected computer that only the investigator will have access to.

The study's results will be released to the Permanent Secretary of the Ministry of Health and Social Services in compliance with the ministry's requirements. This information will hopefully be assimilated in the ministry's policies on people living with HIV.

Results from the study will be published for academic purposes. Confidentiality will be maintained throughout.

7. PARTICIPATION AND WITHDRAWAL

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

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Tafadzwa Chakare (0813894024, tachakare@gmail.com) or Burt Davis (+27 21 808 3006, burt@sun.ac.za).

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; +27 21 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH PARTICIPANT

The information above was described to me by _____ in [*Afrikaans/English/Oshiwambo/Otjiherero/other*] and I am in command of this language or it was satisfactorily translated to me. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent to voluntarily participate in this study. I have been given a copy of this form.

Name of Participant

Signature of Participant

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____. He/she was encouraged and given ample time to ask me questions. This conversation was conducted in

[*Afrikaans/*English/Oshiwambo/Otjiherero/*Other*] and [*no translator was used/this conversation was translated into _____ by _____*].

Signature of Investigator

Date

Appendix F



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvennoot • your knowledge partner

**STELLENBOSCH UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH**

Factors Associated with Fertility Desires and Intentions Among HIV Positive Women Enrolled at a HIV Treatment Clinic in Windhoek, Namibia- Women Living with HIV Subgroup.

You are asked to participate in a research study conducted by Tafadzwa Chakare (MBChB, PDM), from the Africa Centre for HIV/AIDS Management at Stellenbosch University. The results of this study will contribute to a research paper. You were selected as a possible participant in this study because you are a HIV positive woman getting treatment from Katutura Health Centre.

1. PURPOSE OF THE STUDY

To determine the factors influencing childbearing decisions among HIV positive women in Windhoek's Katutura Township so as to improve sexual and reproductive health services for people living with HIV attending Katutura Health Centre.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to answer questions to which your answers will be recorded by an interviewer in writing. This will take about 30 minutes and is a one-off event.

3. POTENTIAL RISKS AND DISCOMFORTS

Some of the questions in the interview will be on personal information concerning living with HIV, sexual behaviour and childbearing. If you experience any discomfort from these, you can choose not to answer these questions. When required, counselling will be provided to you by the clinic's counsellors and you may be referred for additional support through existing frameworks. We will attempt to compensate any lost time by assisting you to collect your medicine from the pharmacy without waiting.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study hopes to benefit HIV care providers in Namibia as well as those in similar settings by giving them a better understanding of the attitudes of women living with HIV towards childbearing. By so doing, it hopes to improve sexual and reproductive health services provided to people living with HIV.

5. PAYMENT FOR PARTICIPATION

There will be no payment for participation.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained through the non-use of participant identifiers. No names will be recorded. Additionally the data collected will be stored in a password protected computer that only the investigator will have access to.

The study's results will be released to the Permanent Secretary of the Ministry of Health and Social Services in compliance with the ministry's requirements. This information will hopefully be incorporated into the ministry's policies on HIV management.

Results from the study will be published for academic purposes. Confidentiality will be maintained throughout.

7. PARTICIPATION AND WITHDRAWAL

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

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Tafadzwa Chakare (0813894024, tachakare@gmail.com) or Burt Davis (+27 21 808 3006, burt@sun.ac.za).

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not giving up any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; +27 21 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH PARTICIPANT
--

The information above was described to me by _____ in
[Afrikaans/English/Oshiwambo/Otjiherero/other] and I understand this language well or it was

satisfactorily translated to me. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent to voluntarily participate in this study. I have been given a copy of this form.

Name of Participant

Signature of Participant

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____. She was encouraged and given ample time to ask me questions. This conversation was conducted in [Afrikaans/*English/Oshiwambo/Otjiherero/*Other] and [no translator was used/this conversation was translated into _____ by _____].

Signature of Investigator

Date

Appendix G



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY Oundafano loku kufa ombinga momapulapulo (elihongo)

Iinima eyi yapamba omaholo okumona uunona mokati koomeme tavalumbu nombuto yoHIV havatambula omayakulo mokilinika moVenduka

Nefimaneko iinene oto indilwa ukufe ombinga momapulapulo (momapekapeko) tama ningwa Tafadzwa Chakare (MBCb, PDM), oku ndilila ko Africa Centre moshiputudhi lo sha Stellenbosch hashi ungawunga nombuto yoHIV/AIDS. Iindjemo yomapulapulo otayi kalongifwamelihongo. Molwaasho mapulapulo aa otaa ningilwa ovakainhu tava lumbu nombuto yoHIV nohava tambula omayakulo pokakilinika kaKatutura hano omulimwa hololwa notamuopalele okukufa ombinga momapekapeko aa.

1. Elalakano lelihongo

Oku mona iinima eyi hayi etifa oomeme tava lumbu nombuto yoHIV momudingonoko waKatutura Mondoolopa yaVenduka vaninge omatokolo kombinga yokumona uunona. Elihongo eli otalikhawefe aanhu tava lumbu nombuto hava tambula uuhaku poKatutura health Centre vamone uunona veli mefilo shisho luuhaku

2. Elandulafano

ngenge oweli yambe wukufe ombinga melihongo eli, oto kapulwa wu nyamukule omapulo eli mombapila nomupuli otaka shanga omanyamukulo moye. Eshi otashika kwata ashike ominute omilongo natu.s

3. Omaupyakadi

Omapulo amwe omopaumwen tama pula kombinga yokulumba nombuto yoHIV, omikalo ndokuya momilela nokumona uunona. Ngenge owaka shakaneka inomanguluka okunyamukula omapulo aa otondulu okukala inomanyamukula.ehungo mwenyo otokapewa ngenge shapumbiwa kaahungi mwenyo vomokilinika nomakwafo amwe awendwapo. Oha tuka futilapo efimbo loye mokuke kutalela omiti ndoye koopharmacy.

4. Omauwa elihongo/lomapulapula aa koshiwana

Elihongo eli otwelinekela likwafele ovayandji vouhaku wombutu yoHIV moNamibia naavo havaolongo shinasha nomukifi ou. Otali yandje eundeko kombinga yonyalonawa yoomeme ava tavalumbu nombuto veli mefimbo lokumona uunona. Otwe lineekelwa li yambulepo omikalo domilele ndayamenwa nemono luunona vena uukolele(uundjolowele) moomeme tavalumbu nombuto yoHIV.

5. Efuto yomuliyambi

Kapunasha ofuto.

6. Oshiholekwa

omauelele aeshe tokayandja otaa kakala oshiholekwa, otaa ka popiwamo ashike ngenge ove wayandje epitikilo ile shandja paveta. Kapuna Edina talikayandjwa. Omauelele ayeshe toka yandja pefimbo lomapulapulo otama ka holekwa mocomputer omo omunhu ou elilepo elihongo eli oye ashike ena uufemba wokuyipatulula.

Iindjemo yelihongo otayi ka yandjwa kuhamushanga akula wuuMinisteli wuuhaku nonkalo nawa. Nomauelele aa ata shindulika akalongithwa mokukondjitha ombuto yoHIV pamwe nuuministeli.

Iindjemo yomapulapulo otayi kanyanyangidilwa yikalongifwe kelelongo lopombanda. Kapuna edhina tali kagandjwa ashihe otashikala oshiholekwa.

7. Uufemba womukufimbinga

Eehololo oloye mwene lokuliyamba momapulapulo aa.ngenge owakufa ombinga momapulapulo aa ouna uufemba oku shendja etokolo loye efimbo keshe kapuna oshilanduli shasha. Ouna uufemba okwaanya okunyamukula omapula aa inohala okunyamukula ndee natango tokala ngoo omukufimbinga momapulapulo omu. Omutaleli womapulapulo okuna uufemba wokukufamo momapulapulo ngenge shapumbiwa.

8. Omauelele omutaleli

Omapulo kombinga yomapulapulo otodulu okumona Tafadzwa Chakare kongondi yili miikondekifo (0813894024, tachakare@gmail.com) ile Burt Davis (+27 21 808 3006, burt@sun.ac.za).

9. Uufemba woyiilongwa yomapekapeko

Ouna uufemba wokuteya eundafaono eli waninga kombinga yokukufa ombinga momapulapulo nokapuna oshilanduli shasha. Itoningi nande eyindilo lasha paveta ile uufemba ile toti pamwe toveluka molwa eshi wakufa ombinga momapulapulo aa. Ngenge ouna omapulo kombinga wuufemba woye ove ongo omukufimbinga (omuliyambi) mona Ms Maléne Fouché [mfouche@sun.ac.za; +27 21 808 4622] moshikondo she yeyambulepo lomapekapeko.

Eshaino lomukufi mbinga melihongo (momapulapulo)

Omauelele eli pombanda oma hokololwa ku.....moshiwambo ame omupopi welaka loshiwambo ile onda tolakelwa nawa. Okwali ndapewa omhito yokupula omapulo nonda hafa komanyamukulo aa ndapewa.

Ondili apa ndiitavela okuli yamba ndikufe ombinga momapulapulo aa. Ondapewa okopi yombaapila eyi.

Edina lomukufimbinga

Eshaino lomukufimbinga

efiku

eshaino lomutaleli welihongo

Ondaana kutya onda yelifa omauyelele ayeshe eli mombapila omu ku_____. *okwali*
atuwa omukumo ye okwali apewa omhito yokupulange omapulo. Eenghundafana edi ondaningwa
melaka loshiwambo

eshayino lomutaleli

efiku

Appendix H



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

UNIVERSITEIT - STELLENBOSCH INSTEMMING OM AAN NAVORSING DEEL TE NEEM

Faktore Vereenselwig met Voorplantings-begeertes en Voornemens onder MIV-positiewe vrouens wat by 'n MIV-behandelingskliniek in Windhoek, Namibië – Vrouens wat met MIV Lewe sub-groep – geregistreer is.

Hierdie is 'n versoek dat u aan 'n navorsing-studie, deur Tafadzwa Ckakare (MBcHB, PDM), van die Afrika Sentrum vir MIV/VIGS-bestuur by die Stellenbosch Universiteit, deelneem. Die uitslae van hierdie studie sal tot 'n akademiese navorsings-proefskrif bydra. U is as 'n moontlike kandidaat in hierdie studie gekeur, aangesien u een van die MIV-positiewe vrouens is wat by die Katutura Gesondheid-sentrum ingeskryf is.

1. DOEL VAN DIE STUDIE

Om die faktore wat bydra tot MIV-positiewe vrouens in Windhoek se Katutura Woonbuurt se besluite om kinders te hê te bepaal, ten einde seksuele- en voortplantings-gesondheidsdienste vir mense wat met MIV lewe en die Katutura Gesondheidsentrum besoek, te verbeter.

2. WERSKWYSES

Indien u vryswillig instem om aan hierdie studie deel te neem, sal ons van u verwag om vrae uit 'n opgestelde vraestel te beantwoord en 'n onderhoudvoerder sal u antwoorde skriftelik afneem. Dit sal ongeveer 30 minute duur en is 'n eenmalige geleentheid.

3. POTENSIËLE RISIKO'S EN ONGEMAK

Sommige van die vrae in die onderhoud sal oor persoonlike inligting in verband met u lewe met MIV, seksuele gedrag en die voortbring van kinders handel. Indien u enige ongemak met enige van hierdie vrae ervaar, kan u kies om nie sulke vrae te beantwoord nie. Indien versoek, sal raad deur die kliniek se raadgevers verskaf word, en u kan vir bykomende raadgewing deur bestaande raamwerke verwys word. Ons sal poog om vir enige verlies aan tyd te kompenseer, deur u by te staan om u medikasie by 'n apteek te kry, sonder om daarvoor te wag.

4. POTENSIËLE VOORDELE VIR DEELNEMERS EN/OF DIE SAMELEWING

Daar word verwag dat die studie MIV sorgverskaffers in Namibië en ook sodanige verskaffers in soortgelyke omgewings, sal bevoordeel, deur aan hulle 'n beter begrip oor vrouens wat met MIV lewe se ingesteldheid teenoor die baar van kinders te gee. Hierdeur hoop die studie om seksuele- en voortplantings-gesondheidsdienste, wat aan mense wat met MIV lewe verskaf word, te verbeter.

5. BETALING VIR DEELNAME

Daar sal geen betaling vir deelname wees nie.

6. VERTROULIKHEID

Enige inligting wat in verband met hierdie studie ingesamel word en wat met u vereenselwig kan word, sal vertroulik bly en sal slegs met u toestemming bekendgemaak word, of indien deur die wet so vereis word. Vertroulikheid sal behou word deur geen identifiserende kenmerke van deelnemers te gebruik nie. Enige bykomende data wat ingesamel word, sal in 'n rekenaar, wat met 'n wagwoord beskerm is, gestoor word en slegs die navorser sal toegang daartoe hê.

Die studie se uitslae sal deur die Permanente Sekretaris van die Ministerie van Gesondheid en Maatskaplike Dienste, in ooreenstemming met die ministerie se bepalings, vrygestel word. Hierdie inligting sal hopelik by die Ministerie se beleid oor MIV-bestuur ingevoeg word.

Uitslae van die studie sal vir akademiese doeleindes gepubliseer word. Vertroulikheid sal deurgaans gehandhaaf word.

7. DEELNAME EN ONTTREKING

U kan kies of u aan hierdie studie wil deelneem of nie. Indien u vrywillig instem om daaraan deel te neem, mag u op enige tydstip daarvan onttrek, sonder enige gevolge van enige aard. U mag weier om enige vrae te antwoord wat u nie wil antwoord nie en nog steeds deelneem aan die studie. Die navorser mag u ook uit hierdie navorsing onttrek, indien enige omstandighede wat dit vereis, sou opduik.

8. IDENTIFIKASIE VAN ONDERSOEKERS

Indien u enige vrae of bekommernisse oor die navorsing het, is u welkom om Tafadzwa Chakare by 081 398 4024 of by tachakara@gmail.com, of vir Burt Davis by +27 21 808 3006 of by burt@sun.ac.za te kontak.

9. REGTE VAN DEELNEMERS AAN NAVORSING

U mag u instemming te enige tyd onttrek en u deelname sonder enige gevolge staak. U doen geensins afstand van enige wetlike eise, regte of regsmiddele deur u deelname aan hierdie studie nie. Indien u enige vrae oor u regte as 'n deelnemer aan die navorsing het, kontak Me. Malène Fouché [mfouche@sun.ac.za; +27 21 808 4622] by die Afdeling vir Navorsings-ontwikkeling.

HANDTEKENING VAN NAVORSINGS-DEELNEMER
--

Die inligting hierbo is aan aan my verduidelik deur _____ in in [Afrikaans/Engels/Oshiwambo/Orjiherero/ander] en ek is vloeiend in hierdie taal of dit is vir my vertaal. Ek het die geleentheid gehad om vrae te vra en hierdie vrae is tot my tevredenheid beantwoord.

Ek gee hiermee toestemming om vrywillig aan hierdie studie deel te neem. Ek het 'n afskrif van hierdie vorm ontvang.

Naam van Deelnemer

Handtekeng van Deelnemer

Datum

HANDTEKENING VAN NAVORSER

Ek verklaar dat ek die inligting in hierdie dokument aan _____, verduidelik het. Sy is aangemoedig en voldoende geleentheid gegee om vrae te vra. Hierdie gesprek is in [Afrikaans/Engels/Oshiwambo/Otjohereo/Ander] gevoer en [*geen tolk is gebruik nie/hierdie gesprek is in _____ vertaal deur _____*].

HANDTEKENING VAN NAVORSER

Datum