

**FACTORS INFLUENCING FERTILITY DESIRE
AMONG HIV SERO DISCORDANT COUPLES IN
MKURANGA AND KISARAWA DISTRICTS,
COAST REGION**

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**Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
December, 2013**

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By

Naftal Phillip BA.

**A dissertation Submitted in (Partial) fulfillment of the Requirements for the
Degree of Master of Public Health of Muhimbili University of Health and Allied
Sciences**

**Muhimbili University of Health and Allied Sciences
December, 2013**

CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled *Factors influencing fertility desire among HIV sero discordant couples in Mkuranga and Kisarawe districts, Coast region*, submitted in (Partial) fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

.....

Dr. Candida Moshiro

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Date

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ACKNOWLEDGEMENT

The writing of this dissertation has been one of the most academic challenges I ever faced. Without the support, patience, guidance and tireless spirit of many people this study would not have been achieved. It is to them that I owe my deepest and heart felt gratitude. I am extending my sincere and heartily gratitude's to my supervisor Dr. Candida Moshiro who was abundantly helpful and offered invaluable assistance, support and guidance from the preliminary development of the research proposal to writing up of this dissertation despite her academic and professional commitment she would never give up even at those moment when someone else would have. I want to thank and appreciate her contribution in a big way.

Special thanks to all the academic staff of the School of Public Health and Social Science (SPHSS), for their support and guidance, thanks to all other non-academic members of staff for all the assistance they provided all the way. Many thanks to my colleagues MPH executive track class of 2010-2012 for the companionship, shared learning and team work.

I would like to thank all HIV sero discordant participants who agreed to take part in this study. The information they gave was very useful to make the study a success, not forgetting the research assistants for their tireless effort and managing to collect the data within the short time that data was to be collected.

I thank the District Medical Officer for Mkuranga and Kisarawe districts for allowing me to conduct this study in their districts. I also want to thank in a special way Care and Treatment Clinic Managers of the centers which took part in the study.

I wish to express my love and gratitude to my brother Bambino Phillip for his special support throughout this course. Without him I do not see myself anywhere close to this great achievement. His love, support and constant patience has taught me so much about sacrifice and discipline. I am also grateful to my parents and siblings who have always supported, encouraged and believed in me. In a very special way, I give thanks to the almighty God, through whom all blessings flow. It is only by grace that I lived to see today. Your name be honored, lifted high and glorified.

DEDICATION

This dissertation is dedicated to my parents Mr: and Mrs: Phillip Nyambita Sagwa who sacrificed so much to lay a good foundation in my life and education which has been a stepping stone to a higher ground like this course. To my loving brother Bambino for showing me an academic and career path. To sisters, Nana, Esther, Xiaoleen and Patricia. I love you all.

LIST OF ABBREVIATIONS

AIDS	Acquired Immune deficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral
CTC	Care and treatment center
HIV	Human immune deficiency virus
MOHSW	Ministry of Health and Social Welfare
NACP	National aids control program
PI	Principal Investigator
PMTCT	Prevention of mother to child transmission of HIV
RA	Research assistant
SPSS	Statistical package for social scientists
STI	Sexually transmitted infections
TACAIDS	Tanzania commission for aids
TDHS	Tanzania demographic and health survey
THMIS	Tanzania HIV and malaria indicator survey
UNAIDS	Joint United Nations Program on HIV/ AIDS
VCT	Voluntary Counseling and Testing

DEFINITION OF TERMS

Sero discordance - in this study sero discordance is used to identify couples in a relationship where one partner is HIV negative

Sero concordance – in this study sero concordance is used to identify couples in a relationship where **Sero concordance** both partners are HIV positive,

Fertility desire - in this study fertility desire means wanting to bear a child or children in future.

Table of Contents

LIST OF ABBREVIATIONS.....	7
DEFINITION OF TERMS.....	8
ABSTRACT.....	11
1.1 Background	12
1.2 Problem Statement	14
1.3 Rationale for the study	15
1.4 Conceptual framework.....	16
1.5 Research questions	17
1.6 Objectives.....	17
1.6.1 Broad objectives	17
1.6.2 Specific objectives	18
2. 0 LITERATURE REVIEW	19
2.1 Global HIV/AIDS Epidemic	19
2.2 HIV/AIDS Epidemic in Tanzania	19
2.3 HIV/AIDS Epidemic Response.....	19
2.4 HIV sero discordance	20
2.5 Fertility desires intentions and contraceptive use among HIV sero discordant couple.	21
2.6 Stigma and discrimination.....	22
3.0 METHODOLOGY	23
3.1 Study Design	23
3.2 Study Site	23
3.4 Inclusion criteria	23
3.5 Exclusion criteria.....	24
3.6 Sample size and sampling procedure	24
3.6.1 Sample size	24
3.6.2 Sampling Procedure.....	24
3.7 Data collection methods	25
3.8 Recruitment and training of Research Assistants	25
3.9 Pre-testing of the questionnaire	25
3.10 Study variables	25
3.11 Data management and analysis.....	25

3.12 Ethical considerations.....	26
CHAPTER FOUR.....	26
RESULTS.....	27
4.1 Socio demographic characteristics of the study participants	27
4.2 Disclosure of HIV status	28
4.3 Desires and intentions of having children among HIV sero discordant couples	28
4.4 Factors associated with fertility desires among HIV sero discordant couples.....	29
4.4.1 Fertility desires and socio demographic factors.....	29
4.4.2 Fertility desires and social factors	30
4.4.3 Fertility desires by HIV-history and disease stage.....	30
4.4.4 Fertility desires by reproductive history.....	31
4.6 Use of family planning methods among HIV sero discordant couples.....	32
4.6.1 Source of contraceptive methods	33
CHAPTER FIVE	34
5.0 DISCUSSION	34
5.1 Fertility desire among HIV sero discordant couples.....	34
5.2 Factors associated with fertility desire among HIV sero discordant couples	34
5.2.1 Fertility desires and social demographic characteristics	34
5.2.2 Fertility desires and social factors	35
5.2.3 Fertility desires HIV History and disease stage.....	35
5.2.4 Fertility desires and Reproductive History.....	36
5.4 Family planning choice and use among HIV sero discordant couples	36
5.5 Study Limitations	36
CHAPTER SIX.....	37
6.1 Conclusion.....	37
6.2 Recommendations	37
REFERENCES	Error! Bookmark not defined.
APPENDIXES	42
Appendix 1: Informed Consent Form, English Version	42
Appendix II: Informed consent Form, Swahili Version.....	45
Appendix II: Questionnaire English Version.....	46

ABSTRACT

Background: HIV sero discordant couples have desires and intentions to have children in future. There is little information on factors that influence desire and intention to bear children among HIV sero discordant couples in Tanzania. The aim of the study was to assess factors associated with fertility desire among HIV sero discordant couples in Mkuranga and Kisarawe, Coast region.

Methods: A cross sectional study was conducted in 11 health facilities. The study population included HIV positive men and women who were in a HIV sero discordant relationship attending care and treatment centers in the selected health facilities. Data were analyzed using SPSS computer software. Cross tabulations and logistic regression methods were used to assess factors associated with fertility desire.

Results: A total of 170 men and women participated in this study. Of these, 116 (68.2%) were females. About half of the participants were aged between 35 and 44 years. Out of all participants, 61.2% desired to have children. Among those who desired to have children, 73 (70.2%) intended to have one child. Older age and unemployment were independently associated with fertility desire after adjusting for other variables. Participants who were not employed were less likely to desire for children compared to those who were employed (adjusted OR=0.07; 95%CI=0.02-0.24). Eighty seven percent of the participants used condom for contraception.

Conclusion: Findings of the study show that a large proportion of men and women living in HIV sero discordance desire to have children. This calls for the need to have reproductive health counseling for this group for them to be able to make informed choices on having children at the right time a time when probability of HIV transmission is lowest.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

AIDS is one of the most serious public health issues globally and a development challenge in sub-Saharan Africa. Approximately 40 million people are currently living with HIV/AIDS worldwide and sub-Saharan Africa is the epicenter of the epidemic, home to 60% of those living with HIV/AIDS and 75% of the global population of HIV positive women (UNAIDS, 2005).

The first cases of HIV/AIDS in Tanzania were reported in 1983, although for sub-Saharan Africa as a whole the problem began to surface in the late 1970s. The epidemic has evolved from being rare and new disease to a common household problem, which has affected most Tanzania families. The development of the HIV/AIDS epidemic has its clear impact on all sectors of development through not only pressure on AIDS cases care and management of resources, but also through debilitation and depletion of economically active population i.e. young women and men (**MoHSW 2008**).

HIV infection is unevenly distributed across geographic area, gender, age, groups and social economic classes in the country. The percentage of the population infected by HIV ranges from less than three percent across most of the country to more than 44.4 percent in certain sub populations. The epidemic has struck more the most economically active group of adults, aged 15-45 (NACP 1998).

Transmission of HIV occurs mainly through heterosexual contact beginning in the early teen years and peaking before the age of 30. Since 1983, when the first three AIDS cases in Tanzania were reported, the HIV epidemic has progressed differently in various population groups. Early in the epidemic, urban populations and communities located along highways were most affected. According to the NACP HIV/AIDS/STD Surveillance Report No.11, 1996, the epidemic has rapidly spread to rural communities and in 1997, more than 10% of women attending antenatal clinics situated in some rural areas have been found to be HIV infected.

The cumulative AIDS cases as reported from surveillance reports collected by the National AIDS Control Program (NACP) in Tanzania mainland rose from 25,503 at the end of 1990 to 88,667 in 1996. Over 80% of the reported AIDS cases were in the age group 20 - 44 years.

The impact of AIDS is now affecting all sectors of Tanzanian society and the future course of Tanzania's AIDS epidemic depends on a number of factors including HIV/AIDS-related knowledge, social stigmatization, risk behavior modification, access to high quality services for sexually transmitted infections (STIs), provision and uptake of HIV counseling and testing, and access to anti-retroviral therapy (ART).

The human immunodeficiency virus (HIV) continues to affect the lives of many people especially women, children, and young people in the world. It was estimated that 33.4 million people were living with HIV in the world in 2008 of whom 15.7 million were women and 2.1 million were children under the age of 15 years. Sub Saharan Africa accounted for 67% of the people living with HIV infections in the world and 70% of the world new adult HIV infections and deaths. Ninety percent of new infections among children were reported to come from sub-Sahara Africa. Women account for 60% of HIV infection in sub-Sahara Africa (UNAIDS, 2009).

In Tanzania, it is estimate that 1.4 million people are living with HIV of whom 54% are women and 10% are children under 15 years. Heterosexual transmission was reported to be the major route of transmission of HIV in Tanzania constituting 80% of all reported cases of HIV among adults. Eighteen percent of HIV infection was estimated to be due to mother to child transmission of HIV and 1.8% was infection due to blood transfusion, unsafe injections or traditional practices like male circumcision and female genital mutilation (TACAIDS, 2007). The HIV prevalence among adults aged 15-49 years is 5 percent in Tanzania. HIV prevalence among women is higher (6%) compared to men (4%) (MoHSW, 2012). In Tanzania HIV and Malaria Survey conducted in 2012 the report also shows that HIV prevalence is higher in urban areas than in rural areas (7 percent versus 4 percent) and is higher in Mainland Tanzania 5 percent than in Zanzibar 1 Percent. The prevalence of HIV still remains high because of increase in incidence of HIV in the rural areas. Also the wide uptake of ARV in the country for the past four years has increased the life expectance of people living with HIV hence increasing the prevalence. Poverty, low social economic status, gender inequality and local cultural practices involving women are some of the causes for high prevalence among women as compared to men. Also, women are biologically more susceptible to HIV infection than men during vaginal sexual intercourse. This is because women have a large surface area of exposed tissue that is the vagina and cervix compared to men where a small tear can make easy passage of the infection.

The risk of HIV transmission from female to male is lower as compared to male to female. In developing countries where some ethnic groups do not attest to male circumcision the risk of female to male transmission is also high. Sexually transmitted infections (STI) May Increase the chances of infecting the negative partner with HIV. Treatable STI's were found to be common among discordant couples and therefore diagnosis and treatment of STI'S and condom use may reduce the chances of HIV infection (Guthrie et al 2009).

In October 2004, the government of Tanzania started to provide antiretroviral (ARVs) drug free of charge to people living with (HIV). The life expectancy of people living with HIV has increased since the introduction of antiretroviral drugs and thus HIV has become a chronic illness. As a result quality life has become an important aspect of life **(FHI, 2006)**.

Studies in the world and including Tanzania have shown that there are an increasing number of HIV sero discordant couples than HIV seroconcordant couples (de walque, 2007). It has been discovered that a high proportion of new heterosexual HIV transmission in Africa occurs among HIV sero discordant couples which is estimated at 55-93% (Dunkle et al, 2010).

These are couples that have been on sexual relationship for more than one year and it has been seen that most of them are married couples. Population based surveys in east, central and west Africa have shown that at least two thirds of HIV infected couples are discordant (De Walque, 2010) in the Africa context a married couple is supposed to bear children and most of them have desire to have children but the challenge is how to get children without infecting the HIV sero negative partner

The desire and intention to have children among HIV sero discordant couples is a challenge since unprotected sex can lead to the negative partner acquiring HIV infection. The use of condoms in this situation does not satisfy their desires and intentions of parenthood.

1.2 Problem Statement

The HIV prevalence in Tanzania is still high at 5% **(MoHSW 2012)**. Heterosexual transmission of HIV is the most predominant mode of transmission in the country which accounts for 80% of all HIV transmission. More than 60% of HIV in the country occurs among young adults especially among women.

There has been an increase in HIV sero discordant couples in Tanzania. It has been reported that at least two thirds of the infected couples are HIV sero discordant couples (De Walque, 2010). Despite

their increase, there has been little attention to address their reproductive needs. HIV care, treatment and support programs addresses the needs of individual living with HIV without consideration their reproductive needs. This is posing a serious threat in the efforts toward a fight against HIV as THMIS report suggest that new cases of HIV infection are increasingly occurring among married couples of ages 30 to 40 (MoHSW 2010)

HIV sero discordant couple have desire to have children like any other couples. A study done in Tanzania, Ukraine and South Africa showed that 74% of HIV sero discordant couples without a child desired to have a child (Rispel et al, 2009). The decision to bear children becomes complicated considering the risk of HIV transmission to the sero negative partner. It has been found that the risk of HIV transmission during sexual intercourse is high when the HIV positive partner has a high viral load (Quinn et al, 2000). The risk of transmission to the baby is of concern when the HIV positive partner is a woman. About 90% of HIV infected children below 15 years is due to mother to child transmission of HIV infection.

There is little information about desires to have children and contraceptive use among HIV sero discordant couples in Tanzania. This study on fertility desires, intention and contraceptive use among sero discordant couples will play part in providing comprehensive information on the magnitude of fertility desires and intentions and the associated factors among this group.

1.3 Rationale for the study

There is an increasing number of HIV sero discordant couples in Sub Sahara Africa including Tanzania. These are individuals who are sexually active in their reproductive age and continue to desire and bear children. Despite knowing that one's partner is HIV negative or positive the desires of wanting to bear children still exist among these partners.

Findings from the study will help policy makers to put up policies that addresses the problem and put up interventions to reduce further spread of HIV transmission among sero discordant couples.

HIV sero discordant couples should be encouraged to make informed reproductive choices and the health workers have a role to play. Information from this study can be shared with the MOHSW for them to train their staffs so that they can provide adequate information and guided HIV sero discordant couples on appropriate time (when) is safe to become pregnant and provide care throughout the process of pregnancy and after delivery.

Information obtained from this study will also be used to put up preventive strategies to prevent infection to the HIV sero negative partner by promoting consistent condom use among sero discordant couples. This will be a great step by first accepting their life choices in sexual partnership but also helping the partners to live a quality life.

1.4 Conceptual framework.

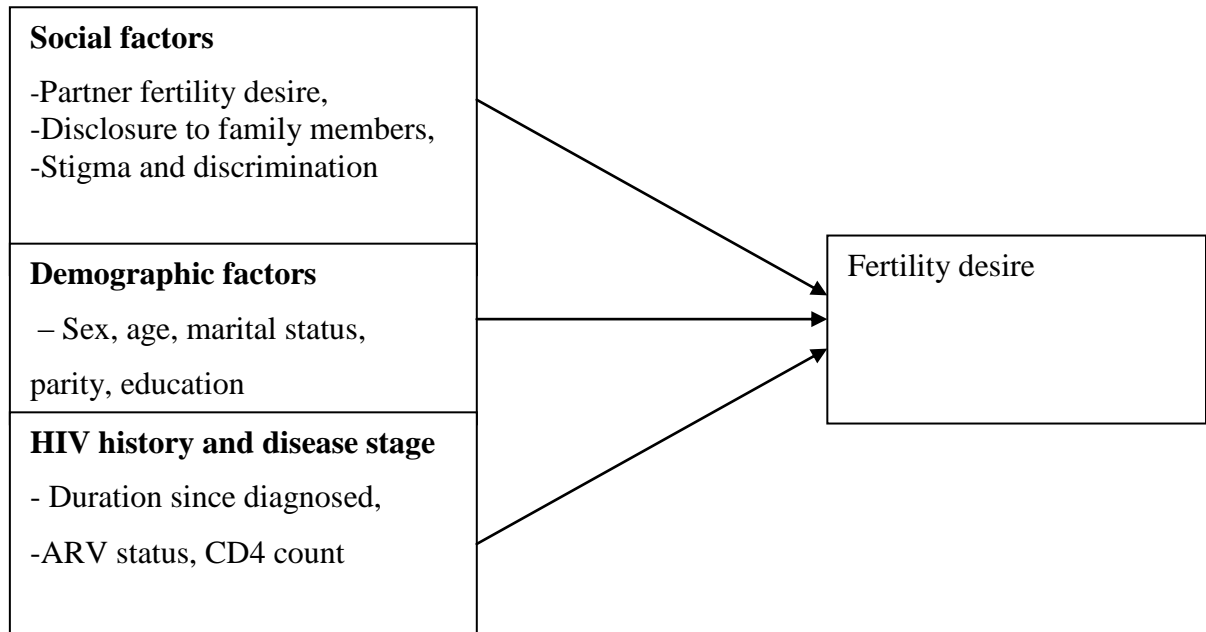


Figure 1: Conceptual frame work showing factors influencing fertility desire among HIV sero discordant couples.

The study of Fertility desire and intentions among HIV sero Discordant couples in Mkuranga and Kisarawe districts was conducted based on the conceptual frame work above which portrays fertility desires as the dependent variable. The framework also shows socio cultural, demographic and HIV history and disease stage as the independent variables.

Social factors:

In African setting, bearing children after marriage is expected and it is an obligation to the couples to respond to each other's demand for children. The desire and intention to bear children in future is there for likely to be influenced by whether a partner wants a child or not. To avoid stigma and discrimination from the society PLHA may desire to have children as a way of proving to the community that they are fine health wise.

Demographic factors:

The young people who have not had children of their own may differ from elderly in their fertility desires as the older members are likely to have had children already or due to the advance age they may not be expecting to bear children. The women in particular will need to demonstrate their ability to have children of their own so that they are not considered infertile and are more prone to submit to their partner desire in order to maintain their relationship and their positions within the household. The higher the level of education it is expected that there is a higher level of understanding the effect of child bearing for PLWHA as compared to PLWHA with lower education level. This may result in to differences in their fertility desires.

HIV history and Disease stage:

Patients who are in early stages of disease are still more energetic and enjoy better quality of life compared to those in advanced stages of the disease and this may influence their desires and intentions on child bearing compared to those in later disease stage. Also the fact that HIV transmission to unborn baby occur during advanced stage of the disease, those in early stages may under estimate or ignore the chances of MTCT and hence be influenced positively in **desire** for children unlike those who are in late stages of disease. Health condition and perceptions of one's health status after ARV drug initiation may also influence fertility desire as improvement in health associated with the use of ARV drugs makes PLWHA consider themselves better compared to the time before they start ARV drugs.

1.5 Research questions

1. What is the proportion of HIV sero discordant couples who desire to have children?
2. What are factors associated with fertility desires among HIV sero discordant couples?
3. What is the proportion of serodiscordant couples using contraceptives?

1.6 Objectives**1.6.1 Broad objectives**

To assess factors influencing fertility desire among HIV sero discordant couples in Mkuranga and Kisarawe.

1.6.2 Specific objectives

1. To determine the proportion of HIV sero discordant couples who desire to have children.
2. To assess factors associated with fertility desire among HIV sero discordant couples.
3. To determine the proportion of HIV sero discordant couples using contraceptive

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Global HIV/AIDS Epidemic

The HIV and AIDS epidemic has continued to become one of the major health problems in the world. In 2008 it was estimated that 33.4 million people were living with HIV. Two million and seven hundred thousand people were newly infected by the virus in 2008 and 2.0 million people died from AIDS related illness. Although HIV and AIDS are found all over the world but some areas are more affected than others. Sub Saharan Africa is the worst affected region which accounts for 67% of all infection than men (UNAIDS, 2009). Despite the challenges that have been facing the world in the spread of HIV there have been global efforts to address the epidemic. Prevention strategies that have been put up have led to the global decrease of HIV prevalence and the number of people receiving ARV has increased (UNAIDS 2011).

2.2 HIV/AIDS Epidemic in Tanzania

Tanzania like any country in Sub Saharan Africa has been affected by HIV/AIDS since early nineteen eighties. By 1986 all the regions of Tanzania mainland had reported at least one case of AIDS to the ministry of Health. There is currently regional variation in the HIV prevalence in the country with Iringa, Mbeya, and Dar es Salaam having the highest prevalence in the country of 14%, 7.9% and 8.9% respectively (MOH/NACP, 2010). The disease had moved from becoming a rear disease to a common disease. There have been some changes in the prevalence of HIV since its discovery, in the 2003/2004 the TDHS reported for it to be 7.0% and in the year 2007/2008 it went down to 5.8%. Finding from all the years show that women are the once with high prevalence as compared to men. The prevalence among women dropped from 7.7% to 6.6% in 2003/2004 and 2007/2008. It is estimated that 1.4 people are living with HIV/AIDS in Tanzania. Unprotected sex was reported to be the main contributing factor to a high HIV prevalence in the country where only 38% of women reported using condoms compared to 50% of men (DHS, 2010).

2.3 HIV/AIDS Epidemic Response

Due to the increase of number of people living with HIV/AIDS in 1999 the third president of Tanzania declared HIV/AIDS a national disaster. In 2001 the government established an

HIV/AIDS coordinating board called TACAIDS which has a responsibility of coordinating all HIV/AIDS prevention and control programs and activities in policy formulation advocacy and resource mobilization. Coordination of care and treatment of HIV/AIDS is done by NACP which is under the MOH. It also foresees preventive services like VCT. Government has put on plans and strategies to strengthen the health system to ensure safe blood transfusion, management of STI, care of HIV infected and affected and raising the public awareness to HIV infection to over 95%. In prevention of new infection there has been an increase in the coverage of STI screening and treatment from the hospital, health center and to 60% of dispensaries. There has been widely availability of male condoms and an increase of more than three times of voluntary and counseling centers for people to know their HIV status so as to facilitate early access to care and treatment for those who are infected as well as to get advice on how to prevent their partners from getting infection for the HIV sero discordant couples and protecting themselves from re-infection. PMTCT program has been rolled out in ANC in the country to prevent HIV transmission to the infants and unborn baby and to provide comprehensive care and support to the infected mothers (TACAIDS, 2008). The MOH is implementing the rollout of treatment of opportunistic infections and provision of ARV in public and private health facilities free of charge. By March 2009 there were 563 health facilities in the country providing care and treatment, there were 457,314 people enrolled for HIV care and treatment and among them 235, 092 people are on ARV (NACP, 2009).

2.4 HIV sero discordance

The prevalence of HIV sero discordant couples is high in countries with high prevalence of HIV as compared to the prevalence of HIV sero concordant HIV couples. In South Africa migrant couples were 2.5 times likely to be HIV sero discordant than non-migrant couples (Lurie et al, 2003). In Tanzania the 2003-2004 TDHS reported that two thirds of the HIV infected couples only one partner is infected when among them no one has STI and it will also depend on the frequency of sexual intercourse. The high prevalence of discordance has been contributed by the use of ARV by the HIV positive partner. The rate of HIV transmission among sero discordant couples is high when the infected partner has a high viral load (Ulgen et al, 2001). The rate of HIV transmission depends on sex of an infected partner where the rate of male to female transmission is greater as compared to the rate of HIV

transmission from female to male. In African countries it has been shown that the rate of transmission from female to male is greater in uncircumcised men (Gray et al, 2000). Many studies on HIV sero discordance have shown that in 67% of the discordant couples it is the female partner who is infected (Jairam et al, 2009, Meghan et al, 2010)

2.5 Fertility desires intentions and contraceptive use among HIV sero discordant couple.

Despite the discordance HIV sero discordant couples have shown to have desires of having children to fulfill the role of parenthood. Fifty nine percentage of HIV sero discordant couples in Uganda desire to have children and this was mainly influenced by the fact that one partner wanted a child (Beyeza Kashesya et al, 2010). Studies have shown that the desire to have children among HIV sero discordant couples differ between HIV positive partners where by 45% of HIV positive women desired to have children and 38% of HIV men desired to have children among HIV sero discordant couples in Switzerland (Panozzo et al, 2003). The desire to have children among HIV positive is influenced by the number of current children, 47% of HIV positive individuals with children desire children as compared to 74% of those with no children. Studies have shown that young age, having no children and been on ARV are some of the factors that influence fertility desires and intentions (Panozzo et al, 2003, Chen et al, 2001). That pressure from relative to have children and securing relationship through having children have also been seen to be some of the factors that influence desire to have children among discordant couples (Beyeza &Kashesya et al, 2009). The fertility desires of infected individuals do not always agree to those of their partners. The fact that a large number of couples are HIV sero discordant and therefore the issue of having children is an area of concern. The desires and intentions of having children become complicated since it warrants use of unprotected heterosexual vaginal intercourse.

HIV sero discordant couples may wish to use contraceptives in order to prevent unplanned pregnancies and plan intended pregnancies. Knowledge of other types of contraceptive apart from condoms among HIV discordant couples is high but their use is low. This was shown in Zambia and Rwanda (Grabbe et al, 2009). HIV sero discordant couples prefer to use condoms for the prevention of pregnancy as compared to other means of contraceptives as it was seen among Parisian sero discordant couples where 84% of them used condoms alone while 12% used dual method (condoms and oral contraceptives or intrauterine device) (Heard

et al, 2004). Couples in HIV sero discordant relationship, use condom for the sake of preventing pregnancy and not for prevention of HIV transmission. Forty six percent of HIV infected women reported using condoms for contraception (Jairam et al, 2009).

2.6 Stigma and discrimination

Despite of the existence of HIV/AIDS disease for more than two decades stigma and discrimination has been the sole problem of non-disclosure of HIV status to couple, family members, relatives and friends. Studies have shown that in HIV sero discordant relationship 75% of HIV negative compared to 80% of HIV positive had disclosed that they are living in a discordant relationship. Even though some disclose their HIV status but very few have shown to be living openly in discordant relationship. Fear of disclosure to relatives and other family members has led to pressure from relatives to have more children for those with few children (Bunnell et al, 2005).

The use of condoms among sero discordant couples is low in sub Saharan Africa. In Ethiopia, Malawi and Tanzania women reported that the use of condom is associated with stigma of unfaithfulness and HIV infections and therefore inhibits suggesting to their partner to use condom. There is no difference in consistent condom use among discordant couples in the developed and developing countries. Consistent condom use was reported to be 73% in Switzerland and 72% in Tanzania. Ukraine and South Africa among HIV sero discordant participants (Panozzo et al 2003, Rispel et al, 2009) There is little information about desires to have children and contraceptive use among HIV sero discordant couples in Tanzania. This study will be able to add to the available literature on fertility desires and contraceptive use among HIV sero discordant couples.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

The design of the study was a cross sectional study which employed quantitative research methods.

3.2 Study Site

The study was conducted in two districts of Mkuranga, and Kisarawe Districts in Coast region. Coast region is made up of 6 districts. The region shares border with four regions. Northern part is Tanga, Western part is Morogoro Region, Southern part is Lindi region and Eastern part is Dar es salaam region. In terms of distance the region is near to Dar es salaam city. As such it is accessible to market of any product. More over the region could get raw materials from neighboring regions and these are important factors on economic improvement.

The two districts were selected as area of study because of high prevalence of HIV in Coast region. Mkuranga district has a total of 6 CTCs. The centers include Mkuranga DH, Kilimahewa dispensary, St Vincent health centre, st Exaveli dispensary, Mkamba health centre and Kisiju HC. Mkuranga DH is the leading CTC recording an average of 70 clients per session while conducting 3 sessions per week followed by St. Vincent health center recording an average of 50 clients per session. The rest have an average of 20 clients per session while holding only one session per week. Data also indicate that in average 25 clients attending CTC session at DH and St Vincent are sero discordant and the rest have an average of 8 sero discordants per session. In Kisarawe there are 5 CTC clinics named Kisarawe DH, Manerumango Health center, Mzenga Health center and Omboza dispensary. Kisarawe DH records an average of 60 clients per session in attendance and at least 20 out of them are serodiscodant. Other facilities reports an average of 15 clients per session with 3 sessions per week and at least 5 are sero discordant.

3.3 Study population

The study population included HIV positive men and women who are in an HIV sero discordant relationship attending care and treatment centers in, Mkuranga, and Kisarawe districts in Coast region.

3.4 Inclusion criteria

- Adult males 15-60 years and female 15-49 years (the rational for age limit was to take in to consideration those that are sexually active and women who are in reproductive age).

- HIV infected individuals receiving care and treatment in the selected care and treatment clinics in Mkuranga and Kisarawe.
- Consenting individuals.
- Individuals in HIV sero discordant relationship (one partner HIV positive and another HIV negative).

3.5 Exclusion criteria

- Non consenting individuals
- Males below 15 years and above 60 years and females below 15 years and above 49 years.
- Too sick to be interviewed
- Mental illness making it difficult to consent or perform interview
- Individuals in HIV sero concordant relationship.

3.6 Sample size and sampling procedure

3.6.1 Sample size

The minimum sample size was estimated using the following formula;

$$N = z^2 p (100-p) / E^2$$

Where

n = sample size

z = The percentage point of the normal distribution corresponding to the level of significance which is 1.96 (for 5% significance level).

P = proportion of HIV sero discordant couples that desire to have children (69%) (Rispel et al 2009)

E = margin of error (7%)

Therefore the minimum required sample size of respondents was 170.

3.6.2 Sampling Procedure

A total of eleven care and treatment centers were included in the study, six from Mkuranga and 5 from Kisarawe. All patients who were in sero discordant relationships who attended the selected CTCs during the period of data collection and who met the study entry criteria were included in the study.

3.7 Data collection methods

Data were collected by interviewing the participants using a structured questionnaire which contained close ended questions. The questionnaire was formulated in English and then translated to Swahili language which is used by most of Tanzanians. Data was collected on all clinic days from Monday to Friday.

3.8 Recruitment and training of Research Assistants

Four research assistants (RAs) were recruited to assist in data collection. The RAs had diploma in nursing with experience in HIV/AIDS Care and Treatment. RAs were trained for one day on the objectives of the study, data collection processes and data collection instruments.

3.9 Pre-testing of the questionnaire

The questionnaires were pre-tested by interviewing 20 PLWHA in sero discordance relationship in CTC centers in Dar es Salaam similar to those where the study was done, prior to the commencement of the study to test for clarity and validity of the questionnaire.

3.10 Study variables

The dependent variable is: Fertility desire

Independent variables are:

- **Demographic characteristics:** Age, Sex, Education, Occupation, Marital status, Parity
- **Social factors:** Stigma, Disclosure to family members, Partner desire to have children
- **HIV history and disease stage:** Use and duration for ARV, CD4 number, Perceived health status after starting ARV

3.11 Data management and analysis

Data were entered into the computer and analyzed by using SPSS computer software version 21. Data cleaning was done by running frequencies distributions to look for outlying values and by doing consistency checks. The chi square test was used to test for associations between the dependent and the independent variables. P values < 0.05 were considered statistically significant. Multiple logistic regression analysis was used to examine factors associated with fertility desire after controlling for potential confounders.

3.12 Ethical considerations

Ethical clearance for the study proposal was obtained from the Senate Research and Publications Committee of Muhimbili University of Health and Allied Sciences (MUHAS). Permission to conduct the study was requested from District Medical officers of the two districts and from the in charges of health facilities of the selected care and treatment centers. Oral consent was obtained from the study participants after been explained the aim of the study. To ensure privacy and confidentiality interviews were conducted in a private room where the respondents felt comfortable to talk to the research assistants and the interview guides were given code numbers instead of participants' names. Participants were assured that information obtained will be kept confidential and used for research purposes only and will not be disclosed to other people by any means.

CHAPTER FOUR

RESULTS

4.1 Socio demographic characteristics of the study participants

A total of 170 HIV positive individuals living in an HIV sero discordant relationship participated in the study after consenting. Participants were recruited from the HIV care and treatment clinics in Kisarawe and Mkuranga districts of Coast region, where 100 (58.8%) came from Mkuranga district and 70 (41.2%) from Kisarawe district. Their socio demographic characteristics are summarized in Table 1. Their age ranged from 16 to 59 years with about half of the participants aged between 35 and 44 years. The majority (68.2%) of the participants were females. A large percentage (86.5%) was currently married and 77.6% had primary level of education or below.

Table 1: Socio demographic characteristics of the study participants

Characteristics	Number (%)
Age (years)	
15-34	69 (40.6)
35-44	80 (47.0)
45+	21 (12.4)
Sex	
Male	54 (31.8)
Female	116 (68.2)
Marital status	
Currently Married	147 (86.5)
Cohabiting	23 (13.5)
Level of education	
Primary or below	132 (77.6)
Secondary and above	38 (22.4)
Occupation	
Employed	87 (51.2)
Not Employed	83 (48.8)

4.2 Disclosure of HIV status

Table 2 shows almost all participants 168 (98.8%) of the study participants had disclosed their HIV status to their partners. About 20.6% of the participants had disclosed their HIV status to a relative. Nineteen (11.2%) participants had disclosed their HIV status to a friend while 9 (5.3%) had disclosed their HIV status to their children.

Table 2: Disclosure of HIV status

Disclosure to	Yes	No	Total
	n (%)	n (%)	n (%)
Partner	168 (98.8)	2 (1.2)	170 (100)
Relative	35 (20.6)	135 (79.4)	170 (100)
Friend	19 (11.2)	151 (88.8)	170 (100)
Child	9 (5.3)	161 (94.7)	170 (100)

4.3 Desires and intentions of having children among HIV sero discordant couples

One hundred and four (61.2%) participants responded that they would like to have children in future. Among those who desired to have children 73 (70.2%) intended to have one child (Table 3).

Table 3: Participants fertility desires and intentions

Variable	Number (%)
Desire for a child (n=168)*	
Yes	104 (61.2)
No	64 (37.6)
Number of children intended (n=104)	
1	73 (70.2)
2 and above	31 (29.8)

*The numbers do not sum to 170 as 2 respondents failed to answer the question

4.4 Factors associated with fertility desires among HIV sero discordant couples

4.4.1 Fertility desires and socio demographic factors

Table 4 shows findings of this study showed that majority of the participants (72.5%) who desired to have children were in the age groups of 15-34 years where as those aged 45 years and more had the lowest percentage who desired to have children (9.5%). There was a significant decreasing trend in level of desire by age (trend test, $p < 0.0001$). A high proportion of females (71.3%) desired to have children compared to males (41.5%) and the difference was statistically significant ($p < 0.0001$). All cohabiting partners desired to bear children compared to married partners (55.9%) and there was a significant difference between married and cohabiting partners on desire for children ($p < 0.0001$). Seventy four (56.1%) participants who had primary education or below desired to have children as compared to 46.9% participants that had secondary education or above. A significantly higher proportion of participants who were not employed (89.2%) desired to have children as compared to those who were employed (35.3%) ($p < 0.0001$).

Table 4: Fertility desire by socio demographic factors

Characteristics	Fertility Desire		Total	P value
	Yes n (%)	No n (%)		
Age				
15-34	50 (72.5)	19 (27.5)	69	
35-44	52 (66.7)	26 (33.3)	78	
45+	2 (9.5)	19 (90.5)	21	<0001
Sex				
Male	22 (41.5)	31 (58.5)	53	
Female	82 (71.3)	33 (28.7)	115	<0001
Marital Status				
Currently married	81 (55.9)	64 (44.1)	145	
Cohabiting	23 (100)	0 (0)	23	<0001
Education Level				
Primary or below	74 (56.1)	58 (43.9)	132	
Secondary or above	15 (46.9)	17 (53.1)	32	0.35
Occupation				
Unemployed	74 (89.2)	9 (10.8)	83	
Employed	30 (35.3)	55 (64.7)	64	<0001

4.4.2 Fertility desires and social factors

Table 5 presents social factors associated with fertility desire among HIV sero discordant couples. Findings from this study showed that a significantly higher proportion (100%) of participants who reported that their partner did not desire to have children desired to have children in future as compared to those whose partner desired to have children ($P < 0.0001$). All participants 100% who had experienced stigma and discrimination desired to have children as compared to 52.7% who had not experienced any form of stigma and discrimination which is statistically significant (Table 5).

Table 5: Fertility desires by social factors

Characteristics	Fertility desire		Total	p-value
	Yes n (%)	No n (%)		
Partner desire				
Yes	102 (76.7)	31 (23.3)	133	
No	0 (0)	33 (100)	33	<0.0001
Stigma				
Yes	32 (100)	0 (0)	32	
No	68 (52.7)	61 (47.3)	129	<0.0001

4.4.3 Fertility desires by HIV-history and disease stage

Table 6 shows HIV disease factors associated with fertility desire. Results of this study showed that a significant proportion (86%) of those participants who were not on ARV desired to have children as compared to 49.5% of those on ARV ($P < 0.0001$). All participants who perceived their health status to be good desired to have children as compared to 22.2% of those who perceived their health status to be excellent ($P < 0.0001$). A significant proportion (97.4%) of participants with CD4 less than 200 cells per mm^3 desired to have children as compared to 21.4% among those with CD4 200 or more cells per mm^3 ($p < 0.0001$). All participants who were on ARV for 2 years and above desired to have children as compared to 54.6% among those on ARV for one year or less than. However the difference was not statistically significant ($p = 0.43$).

Table 6: Fertility desire by HIV disease factors

Characteristics	Fertility desire		Total	p-value
	Yes n (%)	No n (%)		
ART status				
Yes	55 (49.5)	56 (50.5)	111	<0.0001
No	49 (86.0)	8 (14.0)	57	
Perceived Health status				
Excellent	16 (22.2)	56 (77.8)	72	<0.0001
Good	37 (100)	0 (0)	37	
CD4 Level (cells/mm³)				
<200	38 (97.4)	1 (2.6)	39	<0.0001
200+	15 (21.4)	55 (78.6)	70	
Duration on ARV				
1 year	77 (54.6)	64 (45.4)	141	0.43
2+ years	27 (100)	0 (0)	27	

4.4.4 Fertility desires by reproductive history

All participants currently with children desired to have children in future as compared to only 3% of those with no children ($p < 0.001$). Results of this study also showed that all participants who did not have a child with their current partner desired to have children compared to 72.7% of those who already had children with their current partner ($P < 0.0001$) (Table 7).

Table 7: Fertility desire by reproductive history

Characteristics	Fertility desire		Total	p-value
	Yes n (%)	No n (%)		
Has own child				
Yes	101 (100)	0 (0)	101	<0.0001
No	2 (3.0)	64 (97.0)	66	
Has children with current partner				
Yes	96 (72.7)	36 (27.3)	132	<0.0001
No	27 (100)	0 (0)	27	

4.4.5 Logistic Regression Analysis

Table 8 shows results from univariate and multivariate logistic regression analysis on factors influencing fertility desire. Variables that had no observations in one of the cells or had a p-value > 0.05 were dropped from the multivariate analysis. Findings from multivariate analysis show that older age and unemployment were independently associated with fertility desire after adjusting for other variables. Participants who were not employed were less likely to desire for children compared to those who were employed (adjusted OR=0.07; 95% CI=0.02-0.24).

Furthermore, findings show that female participants were twice as much likely to desire for children as compared to male participants however the association was not statistically significant. Not being on ART was not significantly associated with fertility desire in the multivariate analysis although there was a strong association in the univariate analysis.

Table 8: Logistic regression analysis results on factors associated with fertility desire

Characteristics	Crude OR (95%CI)	Adjusted OR (95%CI)
Age		
15-34	1.0	1.0
35-44	0.76 (0.38-1.54)	1.36 (0.56-3.30)
45+	0.04 (0.01-0.19)	0.96 (0.02-0.61)
Sex		
Male	1.0	1.0
Female	3.50 (1.78-6.91)	2.03 (0.79-5.17)
On ART		
Yes	1.0	1.0
No	6.24 (2.71-14.37)	0.98 (0.25-3.83)
Occupation		
Un employed	1.0	1.0
Employed	0.07 (0.03-0.15)	0.07 (0.02-0.24)

4.6 Use of family planning methods among HIV sero discordant couples

Overall, 91.8% of the participants were currently using at least one method of family planning. Table 9 shows that about 86.5% of the participants reported to use condoms, 2.2% reported to use pills, while 5% each were using injectables and abstinence and 2% were reported to be using calendar.

Table 9: Distribution of use of family planning methods

Family planning method	Frequency (%)
Condom	135 (86.5)
Pills	3 (2.2)
Injectable	8 (5)
Abstinence	8 (5)
Calendar use	2 (1.3)

4.6.1 Source of contraceptive methods

One hundred and eighteen (75.6%) participants reported that they get contraceptives from the CTCs where they get treatment for their HIV disease and 37 (23.7%) reported that they get from RCH in the CTC. Fourteen participants reported getting their contraceptive from RCH near home while 63 (40.4%) reported buying from the drug shop, 9 (5.8) buy from the shop and 2 (1.3%) participants reported getting their contraceptive at their working place (Table 10).

Table 10: Source of contraceptive methods

Source of contraceptive methods	Frequency (%)
CTC	118 (75.6)
RCH in the CTC	37 (23.7)
RCH near home	14 (9)
Private hospital	6 (23.8)
Drug shop	63 (40.4)
Shop	9 (5.8)
Office	2 (01.3)

Note: Participants were getting their family planning methods from more than one source.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Fertility desire among HIV sero discordant couples

The findings of this study showed that about 61.2% of the participants who live in HIV sero discordance relationship desired to have children in future. This finding was in line with what was reported in Uganda by Kashesya et al (2010) who reported that 59% desire to have children. However, in other studies the rate of fertility desire was slightly low for example Rispel et al (2010) reported a rate of 49%. The HIV positive partner in HIV discordant relationship has the same desire to have children as other couples in the general population with reasons that are common like to have children to increase the family tree, to have a child of a specific sex or because they do not have children.

Majority of participants in this study wanted to have one child. This is different from what was reported in Uganda where majority intended to bear two or more children (Kashesya et al, 2010). The low fertility intention can be explained not only by the fact that these couples know that they are living with HIV virus and that if they give birth they are likely to get an infected child but also taking in to consideration the fact that the more the number of the children they would wish to bear the more they will be compromising their body immune.

5.2 Factors associated with fertility desire among HIV sero discordant couples

5.2.1 Fertility desires and social demographic characteristics

Findings of the study show that young age and unemployment were independently associated with fertility desire. The findings of this study showed that the desire to have children is highest among those who are young and decreases as one grows older. This is consistent to a study that reported HIV patients that desire to have children are young (James et al 2001).

Although the association was only significant in the univariate analysis, findings showed that a high proportion of married participants in this study desired to have children as compared to those cohabiting. The fact that the society expects couples to have children otherwise will be labeled as infertile best explains the situation above as family members and society at large would have high fertility expectation to the married couples which at times fertility may be perceived by some members of the society as a responsibility to the married partners. On the other hand the desire for children is likely to be associated with the economic status of the members of the family or cohabiting partners.

5.2.2 Fertility desires and social factors

The desire to have children in this study was significantly influenced by whether or not their partners desire to have children. Previous studies have also reported that HIV positive women and men who desired children in future had partners who would like to have a child (James et al 2001). The desire to have children in many families is influenced by significant others, in most setting couples are expected 'to bear children after marriage. The knowledge of one's HIV status can influence otherwise.

5.2.3 Fertility desires HIV History and disease stage

It is known that when one has a high CD4 count the chances of infecting the unborn child is low as compared to those with low CD4 count. In the univariate analysis, a large percentage of participants in this study who had low CD4 count desired to have children as compared to those with high CD4 count. This was contrary to findings from Panozzo et al (2003) that CD4 count had no effect on the desire for children. With regard to ARV, this study has shown that ARV status has no influence on the desire to have children among HIV positive men and women living in HIV sero discordant relationship although there was a strong relationship in the univariate analysis. These findings are different from many studies which showed that the desire to have children among PLWHA is high among those who are on ARV (Kashesya et al, 2010; Panozzo et al, 2003).

5.2.4 Fertility desires and Reproductive History

The tendency to desire children among participants who had children of their own was high (100%). This is contrary to what was found in a study where individuals without children were more likely to desire children than those who already had one or more children (Rispel et al 2009).

5.4 Family planning choice and use among HIV sero discordant couples

This study showed that a high proportion of participants (91.8%) were using at least one method of family planning. The rate of condom use was found to be the highest. This is in line with other studies which also reported high rate of condom use among discordant couples as a contraceptive method (Beyeza et al 2010; Allen et al 2003). However, Panozzo et al 2003 reported low (73%) condom use among HIV sero discordant couples. The high condom use rate among study participants could be explained by the fact that PLWHA are counseled to use condoms in every sexual act for its duo protection (meaning it is a contraceptive method and at the same time help to prevent new infection) and are provided free at the HIV care and treatment clinics.

5.5 Study Limitations

Participants in this study were recruited from HIV care and treatment clinics and thus have better access to health services and HIV programs. They may therefore not reflect the perspective of typical HIV discordant couples in the community. Another limitation was that stigma was not measured adequately. The study relied on self-reported information, which may be subject to desirable responses and response bias. Desires and intentions may change over time since they take a process.

CHAPTER SIX

6.0 Conclusion and Recommendations

6.1 Conclusion

A significant proportion of men and women living in HIV sero discordance desire to have children. Participants who desire to have children are younger and have partner who desire to have a child. It was also noted that having children, the number of children one has and having no children with the current partner was significantly associated with the desire to have children. The study also showed that education level, ARV status and the number of children one had with the current partner were significant determinants of fertility intention.

Condoms were the commonly used family planning method among HIV sero discordant couples and CTC was the main source of condoms which were distributed freely. These general findings suggest that despite the awareness on their health status serodiscordant couples still desire to bear children. Bearing children is a right to whosoever may desire to, however it is a social responsibility to ensure wellbeing of community members. In the efforts to fight against HIV AIDS the MoHSW and policy makers have a duty to insure that strategies are put to address the needs of serodiscordant couples while at the same time working on reducing new transmission of HIV to the negative partner.

6.2 Recommendations

- The National AIDS Control Program and other partner organization should take into consideration health needs of HIV sero discordant couples and design a strategy to address their reproductive issues so that they can meet their desire but at the same time prevent further transmission of HIV to uninfected partner and to the unborn baby.

- Further studies should be done to find out if serodiscordant are getting the deserved service in the CTC since provision of services to serodiscordant couples to help them manage their condition is an essential component of comprehensive HIV responses.

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APPENDIXES

Appendix 1: Informed Consent Form, English Version

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATION

Participant ID NO.....

Greeting! My name is MR NAFTAL PHILLIP from the School of Public Health, Muhimbili University of Health and Allied Sciences. I am doing research on factors influencing fertility desire and intentions among sero discordant couples in Mkuranga and Kisarawe districts.

Purpose of the Study

The purpose of the study is to collect information on the social cultural, demographic and other factors that influence fertility desires and intentions among sero discordants. The information we will obtain from this study will be useful to improve provision of reproductive services and preparation of programs to couples living with HIV/AIDS.

Why I have been chosen?

You have been chosen because the study knows that you have tested and you are aware of your HIV status, and you are attending care and treatment for HIV and follow up at CTC.

What participation is involved?

If you accept to join the study you will be required to answer a series of questions that have been prepared for the study through interview in order to obtain the intended information on fertility desires, intentions and contraceptive use.

Confidentiality

Information collected from you will be kept confidential and used for this study only. Only people working in this research study will have access to the information. We will not use your name or other information to identifying you on the records of the information you provide.

Risk

We do not expect any harm will happen to you because of participating in this study.

Right to withdraw or refuse

Your participation in this study is voluntary. You can choose not to participate in the study or withdraw from the study any time during the study if you feel, and will not involve any penalty or loss of benefits

Benefits

If you agree to participate in this study, we hope that information gathered will be used to help you and other people living with HIV.

In case of Injury

We do not expect harm will occur to you or your, family as a result of participating in this study. There will be no additional compensations to you or your family.

Who to contact

If you have any questions about this study you should contact Mr. Naftal Phillip **Muhimbili University of Health and Allied Sciences (MUHAS) P. O. Box 65001 Dar es salaam, Tel: 0782 905254**

If you have questions which need further clarifications, as a participant you have a right to contact the Assistant Director for Research and Publication, Dr Joyce Masalu, Muhimbili University of Health and Allied Sciences. P. O. Box 65001 Dar es salaam, Tanzania.

Certification of Consent

I have been invited to take part in the study on contraceptive use and pregnancy decision making among women of childbearing age living with HIV/AIDS in Rorya district. I have read the information about the study or it has been read to me and understood, all my questions have been answered.

Do you agree to participate?

Yes

No

If yes signature (or thumbprint) of participants

Signature of research assistant

Date of signed consent.....

Appendix II: Informed consent Form, Swahili Version**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES****DIRECTORATE OF RESEARCH AND PUBLICATION**

Namba ya Utambulisho.....

Ridhaa ya kushiriki kwenye utafiti

Hujambo! Naitwa Naftal Phillip mwanafunzi wa shahada ya Uzamili ya Afya ya Jamii katika Chuo Kikuu cha Afya na Sayansi ya Tiba cha Muhimbili.

Madhumuni ya Utafiti

Madhumuni ya utafiti huu ni kukusanya taarifa kuhusu sababu zinazo hamasisha nia ya kupata watoto miongoni mwa wenzi ambao mmoja kati yao anamaambukizi ya VVU. Taarifa zitakazopatikana zitasaidia kuimarisha utoaji wa huduma za afya ya uzazi na pia zinaweza kusaidia katika kuandaa mipango bora katika kundi hili.

Nini kinahitajika ili kushiriki

Kushiriki katika utafiti kwa kujibu maswali kutoka kwenye utafiti huu tu. Ni wafanyakazi wanaohusika kwenye utafiti huu tu ndio watakaoweza kufikia taarifa zako. Hatutatumia jina lako wala taarifa zako binafsi za kukutambulisha kwenye kumbukumbu za taarifa zako binafsi.

Hatari

Hakuna hatari yoyote itakayotweza kutokea kushiriki kwako katika utafiti huu.

Haki ya kushiriki au kujitoa

Ushiriki katika utafiti huu ni wa hiari. Kutoshiriki au kujittoa kutoka kwenye utafiti hakutakuwa na madhara yeyote na hutapoteza stahili zozote, endapo utaona ni vema kufanya hivyo.

Faida

Kama utakubali kushiriki kwenye utafiti huu itakuwa ni vyema kwa vile taarifa utakazo toa zitakusaidia wewe na wanawake wengine wanaoishi na maambukizi ya VVU.

Madhara

Hutegemei kuwa utapata madhara yoyote kutokana na kushiriki kwako katika utafiti huu.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti, unaweza kuwasiliana na mtafiti mkuu wa utafiti huu Bw. Naftal Phillip wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili SLP 65001, Dar es salaam kama una swali kuhusu staili zako kama mshiriki unahaki ya kuwasiliana na Mkurugenzi msaidizi idara ya tafiti na machapisho, Dr Joyce Masalu, Muhimbili University of Health and Allied Sciences P. O. Box 65001, Dar es salaam, Tanzania.

Uthibitisho wa Ridhaa ya Kushiriki Utafiti

Nimekaribishwa kushiriki kwenye utafiti. Nimesoma au nimesomewa mambo yote yaliyomo kwenye fomu hii na nimeelewa. Maswali yangu yamejibiwa na nimeridhika.

Je umekubali kushiriki kwenye utafiti huu

Ndiyo

Hapana

Kama ndiyo sahihi (au dole gumba) ya Mshiriki

Sahihi ya Mtafiti Msaidizi

Tarehe ya kusaini fomu ya ridhaa ya Ushiriki.....

Appendix II: Questionnaire English Version

Questionnaire number _____

Name of District _____

Name of CTC _____

Name of interviewer _____

Date of interview _____

PART I

Social demographic Characteristics

1. gender

Male

Female

2. How old are you now? _____ Years.

3. What is your occupation?

Student

Self employed

Employed

Rely on parents

Rely on my partner

Other (Specify)

4. What is your level of education?

No formal education

Primary education Secondary education

College education

5. What is your current marital status?

married

Cohabiting

6. For how long have you been in this relationship? _____month/ years

How old is your partner? _____ Years

what is his/her level of education?

No formal Education

Primary education complete

Secondary education

College education

6. Did you start this relationship after you or your partner was diagnosed with HIV?

Yes

No.

PART II

HIV/AIDS History

7. When were you diagnosed with HIV/AIDS? _____ Year

Have you disclosed your HIV Status?

Yes

No

8. **If Yes to 7.** To whom have you disclosed your HIV status?

partner

relative

friend

health Worker

Others Specify

9. After your status was disclosed to some of the family members what was their response and attitude towards you?

11. Are you currently taking antiretroviral drugs

Yes

No.

12. If on antiretroviral drugs when did you start? _____year

13. Since you started antiretroviral drugs how will you say your health is

- 1) Improved very much
- 2) Improved very little.
- 3) Has not changed
- 4) Worsening

PART III

Reproductive history, desire, intentions and contraceptive use

15. Have you had sex in the last three months?

- 1) Yes
- 2) No

16. If yes when was the last time you had sex?.....days ago.
17. Do you use a condom on your sexual intercourse?
 - 1) Yes
 - 2) No
 - 3) Sometimes
18. Did you use a condom in your last sexual intercourse?
 - 1) Yes
 - 2) No
19. If no why did you not use a condom?.....
20. Do you have any children of your own?
 - 1) Yes
 - 2) No
21. If yes how many are they?.....Number of children
22. Among the children you have how many are girls.....and boys.....
23. Are they of your current partner?
 - 1) Yes
 - 2) No
24. If not how many are from the current partner.....
25. Since you were diagnosed with HIV have you conceived?
 - 1) Yes
 - 2) No
26. If yes how many times? _____ (Write number of pregnancies)
27. Was the pregnancy/ies planned?
 - 1) Yes
 - 2) No
28. Would you like to have a child or children in future?
 - 1) Yes
 - 2) No
29. If yes how many children do you want?.....Number of Children _____
30. Since HIV diagnosis, have you discussed with you partner about having children?

- 1) Yes
2) No
31. Does your partner want children (or more) in future?
1) Yes
2) No
32. If yes how many children does your partner want?.....Number of children
33. Following the diagnosis of HIV/AIDS, did any health worker discuss with you on preventing pregnancy using contraceptives methods?
1) Yes
2) No
34. If yes who?
1) CTC Counselors
2) VCT counselors
3) RCH counselors
35. Were you or your partners using any contraceptive method before you were diagnosed with HIV?
Yes
No
36. If yes what type of contraceptive methods?
1) Condom
2) Pills
3) Implants
4) Injectable
5) Abstinence during fertile days
6) Intrauterine device
7) Other methods specify.....
37. Are you or your partner currently using any contraceptive methods?
1) Yes
2) No
38. If yes what type
1) Condom
2) Pills

- 3) Implants
- 4) Injectable
- 5) Abstinence during fertile days
- 6) Intrauterine device
- 7) Tubal ligation/sterilization
- 8) Others specify.....

39. If no why aren't you/your partner use contraceptives?

40. **If yes to 37**, where did you get your family planning methods?

- 1) CTC
- 2) RCH in the CTC facility
- 3) RCH near my home
- 4) Private hospital
- 5) Drug shop
- 6) Other specify.....

41. If yes to 37, does your partner know that you using contraceptive?

- 1) Yes
- 2) No

42. If no, give reasons.....

.....
.....

43. If yes did you involve him/her or were you involved in selection of the type of contraceptive method?

- 1) Yes
- 2) No

44. If No why.....

45. Following your HIV status, has any one discussed with you on reproduction and sexuality?

- 1) Yes
- 2) No

46. If yes to Qn. 45, who?

- 1) ART Counselors
- 2) VCT counselors
- 3) RCH counselors

47. If yes to Qn. 45 what information did you receive?

- 1) You can have children
- 2) Should not conceive because child will be infected
- 3) Should not have intercourse to avoid infecting partner
- 4) Not have children because when starting falling sick no one to take care will remain

orphaned

5) To use condom in every sexual act

6) Others, specify.....

48. If you were advised that you can get a child when were you advised is the right time?

.....

.....

8.4 Appendix IV: Questionnaire Swahili version

Namba ya Dodoso.....

Wilaya.....

Jina la Kituo.....

Jina la Msaili.....

Tarehe ya usaili.....

Sehemu ya I

Taarifa binafsi (Zungushia jibu sahihi mahala panapo husika)

1. Jinsia ya mshiriki:

1. Mme

2. Mke

2. Je una umri wa miaka mingapi?.....

3. Je shughuli gani za kila siku unafanya kujipatia kipato?

1. Mwanafunzi

2. Nimejiajiri

3. Nimeajiriwa

4. Nawategemea wazazi

5. Namtegemea mwenzi wangu

6. Nyingineo (Taja).....

4. Je una kiwango gani cha elimu?

1. Sijasoma

2. Elimu ya msingi

3. Elimu ya sekondari

4. Elimu ya chuo

5. Hali yako ya ndoa kwa sasa ikoje?

1. Nimeolewa/Nimeoa

2. Naishi na bwana/mwanamke

6. Ulipo oa/olewa/ulipoanza kuishi kiunyumba kwa mara ya kwanza ulikuwa na umri gani?.....(Miaka)

7. Je uko kwenye mahusiano haya tangu lini?.....(Mwaka)

8. Mwenzi wako ana umri wa miaka mingapi?.....

9. Je mwenzi wako ana kiwango gani cha elimu?

1. Hajasoma
2. Elimu ya msingi
3. Elimu ya sekondari
4. Elimu ya chuo

10. Je mlianza mahusiano haya baada ya kubainika kuwa una (au mwenzi wako) ana maambukizo ya VVU?

1. Ndiyo
2. Hapana

Sehemu ya II

Taarifa ya maambukizi ya VVU/UKIMWI na hali ya afya kwa ujumla

11. Ni lini ulibainika kuwa una maambukizi ya VVU? (Mwaka)

12. Je umemshirikisha mtu yoyote kuhusiana na majibu yako ya VVU?

1. Ndiyo
2. Hapana

13. Kama jibu ni ndiyo umemshirikisha nani kuwa una VVU?

1. Mwenzi wangu
2. Mwanafamilia
3. Rafiki

4. Wengineo, taja.....

14. Je umeshawahi kukabiliana na hali yoyote ya unyanyapaa?

- 1) Ndiyo
- 2) Hapana

15. Kama jibu ni ndiyo ni kutoka kwa nani?

- 1) Mwenzi wangu
- 2) Mwanafamilia
- 3) Rafiki
- 4) Wengineo, taja.....

16. Je uko kwenye dawa za kupunguza makali ya UKIMWI?

- 1) Ndiyo
- 2) Hapana

17. Kama jibu ni ndiyo ulianza lini?.....(Mwaka)
18. Tangu uanze dawa za kupunguza makali ya UKIMWI unaionaje afya yako?
- 1) Imeimarika sana
 - 2) Imeimarika kidogo
 - 3) Hakuna mabadiliko
 - 4) Imekuwa mbaya zaidi
19. a) Je unajua kinga yako (cd4) ni kiasi gani? (Idadi ya cd4 irekodiwe toka kwenye CTC kadi hata kama anaweza kutaja idadi)
- Ni ngapi?.....
- Ulipimwa tarehe ngapi?.....
- Rekodi kutoka kwenye CTC kadi.....Tarehe ilipopimwa.....
- Viral load (rekodi toka kwenye file).....Tarehe ilipopimwa.....

Sehemu ya III

Taarifa kuhusu matamaniao ya kupata watoto, idadi ya watoto na njia za uzazi wa mpango

20. Je umeshirika kwenye ngomo ndani ya miezi mitatu iliyopita?
- 1) Ndiyo
 - 2) Hapana
21. Kama ndiyo ulishiriki ngono lini kwa mara ya mwisho.....(siku)
22. Je ulitumia kondom?
- 1) Ndiyo
 - 2) Hapana
23. Kama ni hapana kwa nini hukutumia kondom?.....
24. Una watoto wa kuwazaa wewe mwenyewe?
- 1) Ndiyo
 - 2) Hapana
25. Kama ndiyo una watoto wangapi?.....
26. Kati ya watoto ulio nao wasichana ni wangapi.....na wanaume ni wangapi...
27. Je watoto wote ulionao uliwazaa na mwenzi wako unayeishi naye?
- 1) Ndiyo

- 2) Hapana
28. Kama ni hapana, watoto uliozaa na mwenzi unayeishi naye ni wangapi?.....
29. Tangu ufahamu kuwa una maambukizi ya VVU wewe/mwenzako ameshashika ujauzito?
- 1) Ndiyo
- 2) Hapana
30. Kama ndiyo je mimba hiyo ilikuwa imepangwa?
- 1) Ndiyo
- 2) Hapana
31. Unataka kupata motto/watoto siku za usoni?
- 1) Ndiyo
- 2) Hapana
32. Kama ndiyo unataka watoto wangapi?.....
33. Tangu ufahamu kuwa una maambukizi ya VVU umeshawahi kuongea na mwenzi wako swala la kupata watoto?
- 1) Ndiyo
- 2) Hapana
34. Je mwenzi wako ana taka watoto siku za usoni?
- 1) Ndiyo
- 2) Hapana
35. Kama ndiyo unataka watoto wangapi?.....
36. Tangu ujulikane una VVU kuna mfanyakazi yeyote wa afya aliyeongea na wewe kuhusu njia za uzazi wa mpango?
- 1) Ndiyo
- 2) Hapana
37. Kama ndiyo ni nani?
- 1) Washauri nasaha vituo vya matibabu ya kupunguza makali ya UKIMWI
- 2) Washauri nasaha vituo vya kupima UKIMWI (VCT)
- 3) Washauri nasaha kliniki ya wajawazito
38. Je kati yaw ewe ama mwenzi wako mlikuwa mnatumia njia ya uzazi wa mpango kabla ya kujulikana una VVU?
- 1) Ndiyo
- 2) Hapana

- 3) Sijui
39. Kama ndio ni njia gani ya uzazi wa mpango mlio kuwa mnatumia?
- 1) Kondomu
 - 2) Vidonge
 - 3) Vipandikizi
 - 4) Sindano
 - 5) Kutumia kalenda
 - 6) Kitanzi
 - 7) Nyingine taja.....
40. Je baada ya kujulikana una VVU wewe ama mwenzi wako mlibadili njia ya uzazi wa mpango?
- 1) Ndiyo
 - 2) Hapana
41. Kama ndiyo mlibadili na kutumia njia gani?
- 1) Kondomu
 - 2) Vidonge
 - 3) Vipandikizi
 - 4) Sindano
 - 5) Kutumia kalenda
 - 6) Kitanzi
 - 7) Nyingine taja.....
42. Ilikuwa ni kwa sababu gain mlibadili
43. Je kwa sasa wewe ama mwenzi wako mnatumia njia yoyote ya uzazi wa mpango?
- 1) Ndiyo
 - 2) Hapana
44. Kama ndiyo ni njia gaini?
- 1) Kondomu
 - 2) Vidonge
 - 3) Vipandikizi
 - 4) Sindano
 - 5) kutumia kalenda

- 6) Kitanzi
- 7) Tumefunga Uzazi
- 8) nyingine taja

45. Kama unatumia ama mwenzi wako ana tumia njia za uzazi wa mpango, ulipata/alipata huduma hiyo wapi?

Kituo cha kupunguza makali ya UKIMWI

Kilini ya wajawazito iliyo hapo kituo cha CTC

Kliniki ya jirani na nyumbani

Hospitali ya private

Duka la dawa

Kwingine taja

46. Je mwenzi wako anajua unatumia uzazi wa mpango? Je unajua mwenzi wako anatumia uzazi wa mpango?

1) Ndiyo

2) Hapana

47. Kama hapana ni kwa sababu gain

48. Kama ndiyo je ulimshirikisha/alikushirikisha katika kuchagua njia ya uzazi wa mpango utumie?

1) Ndiyo

2) Hapana

49. Kama hapana ni kwa sababu gain?

50. Tangu ulipofahamu kuwa unamaambukizi ya VVU, je kuna muhudumu yeyoyote ambaye ameshaongea na wewe na mwenzi wako kuhusu afya ya uzazi?

1) Ndiyo

2) Hapana

51. Kama ndiyo ni nani?

4) Washauri nasaha vituo vya matibabu ya kupunguza makali ya UKIMWI

5) Washauri nasaha vituo vya kupima UKIMWI (VCT)

6) Washauri nasaha kliniki ya wajawazito

52. Kama ndiyo ni maelezo gani mliyopata?

1) Mnaweza kupata watoto

2) Msipate mamba maana motto atapata maambukizi

3) Msifanye ngono ili kuzuia kumuambukiza mwenzi wako

4) Msipate watoto maana ukianza kuwa mgonjwa hakuna atakaye waangalia na kubaki yatima

5) Kutumia kondom katika kila tendo la ngono

6) mengineyo

53. Kama aliwaeleza kuwa mnaweza kupata watoto aliwashauri ni wakati gani mzuri wa kupata watoto?

Mwisho: Asante kwa kushiriki.