

**REPRODUCTIVE HEALTH NEEDS AMONG PEOPLE LIVING WITH
HIV/AIDS IN COAST REGION, TANZANIA**

Innocent Michael Massawe, MD, DMLS

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**REPRODUCTIVE HEALTH NEEDS AMONG PEOPLE LIVING WITH
HIV/AIDS IN COAST REGION, TANZANIA**

By

Innocent Michael Massawe, MD, DMLS

**A dissertation submitted in Partial Fulfillment of the requirements for
the Degree of Master of Public Health of the
Muhimbili University of Health and Allied Sciences**

**Muhimbili University of Health and Allied Sciences
October, 2014**

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled; ***“Reproductive Health needs among people living with HIV/AIDS in Coast region, Tanzania”*** in Partial Fulfillment of the requirement for the degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences.

Mangi J. Ezekiel (PhD)

(Supervisor)

Date

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DEDICATION

This dissertation is dedicated to my parents, brothers and my sister, my-wife, who sacrificed so much to lay a good foundation in my life and my education. It is for this foundation that I have grown into a person who I am today, doors opening up for higher academic circles. To you Gertrude N., my lovely wife, my Son Godlove Furaha I love you all so much.

ABSTRACT

Background

Scaling up of antiretroviral therapy (ART) is currently underway in sub-Saharan Africa including, Tanzania, increasing survival of people living with HIV/AIDS (PLWHA) and the majority of this population is of the reproductive age. This may call for programmes to pay attention to PLWHA's reproductive health needs. Information on fertility desire and intention would assist in the integration of sexual and reproductive health in routine care and treatment clinics in both Urban and rural areas.

Despite the fact that majority of people living with HIV are of reproductive age, little attention is given to their reproductive health needs. The purpose of this study was to determine the prevalence of fertility desires and intentions among PLWHA.

Methodology

A cross-sectional study was conducted in rural and urban settings of the Coast/Pwani region districts in May 2014 at selected districts Care and Treatment Clinics (CTCs) namely Tumbi Referral hospital and Mkuranga district hospital. A total of 368 eligible PLWHA (aged 15-54years) consented and participated. Face-to-face interview were conducted using a standard questionnaire. The data obtained from this study was processed and analyzed using SPSS version 20.0.

Results

The prevalence of fertility desire was 107(35%) and the fertility intention was 3 the majority desiring 0-3 as their total number of children to have in their life time. Fertility desire was predicted marital status where by being single (Adjusted Odds Ratio (AOR): 13.86, 95%CI: 4.14-46.38) and those who were married AOR: 2.23, 95%CI: 2.49-10.13, Urban residence AOR:2.34, 95%:CI 2.28-4.46 Fertility desire was associated with CD4 level >200 AOR:1.08, 95% CI:2.32-3.72, having child with current partner AOR:0.016, 95%CI:0.004-0.006, Partner want children AOR:0.70, 95%CI 0.02-0.27 Fertility intention was predicted by age where by those belonged to age group 25-34 AOR:6.91,95%CI 2.58-30.28 and marital status where by being single AOR:0.74, 95%CI:0.10-0.57,and cohabiting AOR:0.66, 95%CI:0.01-0.65. Fertility intention was

associated with education where by those with secondary education level AOR: 0.09, 95% CI: 0.01-0.63, those who perceived their health status as good AOR: 7.38, 95% CI: 2.12-48.53. About 65.9% of participants reported using FP. Use of FP was associated with being married (AOR, 0.36, 95%CI: 0.03-0.95), ART use AOR: 8.49, 95%CI: 2.36-52.98, urban residence was associated with FP use but Adjusted Odds Ratios (AOR) was computed statistical significant was not achieved. These findings indicate that a substantial number of PLWHA want to have children. ART is not related to fertility desire and intention but has an influence on use of FP.

Conclusion

Fertility desire and intention of PLWHA was substantially high though lower than that of the general population in Tanzania. Having a child with the current partner and the importance of partner wanting a child has association with the fertility desire and intentions. A number of pregnancies that were reported after HIV diagnosis of the respondents mean that the PLWHA desire and intend to have children. The current family planning prevalence and the need for fewer children indicate a higher demand for FP. There is therefore a need to promote and intergrate reproductive and child health into care and treatment (CT) services especially in rural areas.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral drugs
CBD	Community Based Distributors
CD4	Clone of Differentiation group 4
CPR	Contraceptive Prevalence Rate
CT	Care and Treatment
CTC	Care and Treatment Centre/Clinic
DAS	District Administrative Secretary
DHS	Demographic Health Survey
DMO	District Medical Officer
DED	District Executive Director
FP	Family Planning
HIV	Human Immunodeficiency Virus
IUD	Intra-uterine Device
MTCT	Mother to Child Transmission
MUHAS	Muhimbili University of Health and Allied Sciences
NACP	National AIDS Control Program
NCTP	National Care and Treatment Plan
NIMR	National Institute for Medical Research
OCs	Oral Contraceptives
PEPFAR	United States Presidential Fund for AIDS Relief
PI	Principal Investigator
PLWHA	People Living with HIV/AIDS
PLWH	People Living with HIV
PMTCT	Prevention of Mother to Child Transmission
RA	Research Assistant
RAS	Regional Administrative Secretary

RCH	Reproductive and Child Health
RMO	Regional Medical Officer
SHACP	Southern Highlands AIDS Care Program
SPSS	Statistical Package for Social Sciences
TACAIDS	Tanzania Commission for AIDS
TGPHS	Tanzania German Program to Support Health
TFR	Total Fertility Rate
THMIS	Tanzania HIV and Malaria Indicator Survey
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency on Foreign Aid
VCT	Voluntary Counseling and Testing

DEFINITION OF KEY TERMS

- **Reproductive Health Needs** – varied as they are and as reflected in the different components of reproductive health, reproductive health needs in this study specifically refer to fertility desires and intentions and the choice and use of family planning methods among PLWHA
- **Fertility Desire** – in the context of this study, fertility desire refers to the aspiration to want to bear a child or children among study participants
- **Fertility Intention** – in the context of this study, fertility intention denotes the ideal number of children study participants wanting to bear children would actually prefer to have.
- **Unintended Pregnancy** – pregnancy obtained without prior intention to having a child at the time of conception as a result of unmet need for family planning, method failure or rape. Includes unwanted (not wanted at all) or untimed (wanted but sometimes later).
- **Unmet Need for Family Planning** - In this study, study participants reporting that they do not (or did not) want any more children or that they want (or wanted) to wait two or more years before having another child but are not using (or did not use) modern contraception are considered to have an unmet need for family planning

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

An estimated total of 33 million people are currently living with HIV/AIDS worldwide. Sub-Saharan Africa with only 10% of the population of the world is home to 60% of people living with HIV/AIDS (PLWHA). (UNAIDS, 2011) Tanzania is among the countries severely affected by the epidemic with 5.7% of the 40 million population infected with the HIV virus (NBS, 2009) Antiretroviral therapy (ART) has improved health status and life expectancy of PLWHA making them enjoy life similar to uninfected individuals (Moore & Johnson, 2002; Nattabi, 2009). Some studies have even reported that some antiretroviral drugs may increase sexual activity among women increasing their likelihood of pregnancies (Wilson et al., 2004).

Scaling up of ART treatment is currently underway in sub-Saharan Africa increasing survival of PLWHA with little attention on their reproductive health needs (UNAIDS, 2011). Unprotected sex has been discouraged among PLWHA due to risk of transmission or acquisition of new viral strains and vertical transmission. Policies and stigma have discouraged reproductive intentions of PLWHA. However, studies suggest that PLWHA desire and continue to have children equally to those without HIV infection (Cooper et al., 2007). A limited number of studies mostly in developed countries involving selected groups of people such as women in ART centers' and/or urban settings where socio-cultural pressures are less have speculated that most of pregnancies of PLWHA could be intentional (Kline et al, 1995; Ogilvie et al., 2007). In rural areas, cultural values are attached to fertility and a significant social status is assigned to people with children -(Dyer & Hoffman, 2002).

In this era of HIV infection, the level of desire and intention to have children in the rural general population is not well understood. Additionally, there are a few insights in to factors affecting desire and intentions to have children among PLWHA in Africa. Lack of information has slowed down efforts to integrate reproductive health services in the routine HIV/ AIDS care and treatment. The study aimed at estimating the size of

fertility desire and intention, and to identify factors associated with fertility desire among PLWHA in the Coast Region. The findings can be used to promote efforts for provision of reproductive health services in HIV care and treatments clinics in Tanzania.

Recent data based on household surveys estimated the HIV sero-positive prevalence in adults aged 15-49 years in Tanzania to be 5.8% -(NBS, 2009). The (HIV/AIDS/STI Surveillance Report Number 22, August 2011) shows about 55,636 PLWHA in Coast region. 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, this is from the 2010 TDHS. Increasing survival of people living with HIV/AIDS (PLWHA) contributed by ART's should call for programmes to gear up the little attention paid to PLWHA's reproductive health needs. Information on fertility desire and intention would assist in the integration of sexual and reproductive health in routine care and treatment clinics.

1.2 HIV Epidemic in the Global and Tanzania

HIV continues to spread around the world. Based on the latest UNAIDS report on the global AIDS epidemic (UNAIDS, 2011) an estimated 34 million people worldwide are living with HIV- more than ever before and due in part to the life-prolonging effect of antiretroviral therapy. Sub-Saharan Africa remains the region most heavily affected by HIV. In 2011, there were an estimated 1.8 million new HIV infections in sub-Saharan Africa; 69 percent of all people living with HIV/AIDS are found in sub-Saharan Africa (UNAIDS, 2011)

In Tanzania, the HIV/AIDS epidemic began in 1983, with the diagnosis and reporting of three cases in Kagera region. By 1986, all regions had reported cases of HIV/AIDS. Since then, HIV has continued to spread. There has been a dramatic increase in the number of AIDS cases as more HIV infected people have succumbed to opportunistic

infections arising from suppressed immune systems. As in other sub-Saharan countries, HIV infection is spread predominantly by heterosexual contact.

Over the 30 years since the HIV/AIDS epidemic in Tanzania began, emphasis has been placed on the development of strategies and approaches to scale up interventions, and care and treatment services. As of 2011, an estimated 1.6 million people in Tanzania were living with HIV, and among them, about 1.3 million are age 15 and older (UNAIDS, 2011). From 2004 to 2008, the national HIV prevalence in Tanzania decreased from 7 percent to 6 percent (TACAIDS et al 2011). Nevertheless, the number of people estimated to be infected with HIV has held steady because of ongoing new infections, population growth, and the availability of life-sustaining treatment for those infected. The cumulative number of clients on anti-retroviral treatment (ART) as of June 2012 was 626,444, surpassing the anticipated target of 440,000 by 2011 ((National-AIDS-Control-Programme-(NACP)-Tanzania, 2011).

The demographic consequences of the epidemic are reflected in the country's quality-of-life indicators, including the infant mortality rate and life expectancy. HIV infection has resulted in a surge of opportunistic infections, such as tuberculosis and some forms of cancer. HIV/AIDS morbidity and mortality of women and men in their prime years of productivity has had a serious social and economic impact on all sectors, and at community and individual levels. The epidemic has necessitated the diversion of resources from other areas to HIV prevention, care, and treatment. The economy has been adversely affected by the loss of the most productive segment of society.

Loss of human capital also affects the development of institutional capacity, which requires skilled workers and leaders. Professionals in medical care, education, agriculture, and engineering are not easily replaced.

The reduction of income due to HIV/AIDS morbidity and mortality leads to poverty, which in turn increases the suffering of individuals and communities. At the community level, poverty imposes enormous strains on the extended family structure, leading to a substantial burden of orphans and vulnerable children (OVCs). A social consequence is the growing number of households headed by children and widows. Morbidity and

mortality among parents has severely affected children, especially those supposed to be in school, who are forced instead to stay home and take care of sick parents.

According to the THMIS 2011-2012(NBS) the prevalence Shows the current status HIV infections regional wise the top ten-the first is Njombe 5.1% followed by Iringa 4.1%, Dar es salaam 4.0%,Shinyanga 3.7%, Geita 2.9%, Katavi 2.8%, Kagera 2.5%, Ruvuma 2.3%, Rukwa 2.2% and Kigoma 2.1%. Lowest prevalence's were noted in Manyara and Pwani. Five percent of Tanzanian adults age 15-49 are HIV-positive. Six percent of Tanzanian women 4 percent of Tanzanian men are infected with HIV. 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). HIV prevalence is higher among respondents who reported having had a sexually transmitted infection (STI) or STI symptoms in the past 12 months than among those who did not. Men age 15-49 who were circumcised were less likely to be HIV positive than those who were uncircumcised (3 percent versus 5 percent, respectively). More than 3,000 cohabitating couples were tested for HIV in the 2011-12 THMIS. In 93 percent of couples, both partners were HIV negative. In 2 percent of couples, both partners were HIV positive. Five percent of couples were discordant, that is, one partner was infected with HIV and the other was not.

Several studies conducted in Tanzania and elsewhere suggest a decline in HIV prevalence and incidence (Kwesigabo et al., 2005; Kwesigabo, Killewo, & Urassa, 2000; Msuya et al., 2007; National-AIDS-Control-Programme-(NACP)-Tanzania, 2008; Wambura, Urassa, Isingo, Ndege, & Marston, 2007) However, data from previous studies show an increase in HIV prevalence in rural areas (E. J. Mmbaga, Leyna, & Sam, 2008; National-AIDS-Control-Programme-(NACP)-Tanzania, 2008)The 2007-08 Malaria and HIV Indicator survey has yielded data showing overall country HIV prevalence of 5.8%, a substantial decrease compared to 2003-04 data with a reversal in top three leading regions where now Iringa is first followed by Dar es salaam and Mbeya in that order. One study investigating on HIV prevalence and trends in sub-Saharan Africa has indicated no decline and large sub regional differences (Asamoah-Ode, Garcia Calleja, & Boerma, 2004)

1.3 Responses to HIV/AIDS Epidemic

As the number of PLWHA increased, national and international responses were put in place. HIV, sex and reproduction are intimately linked and at the core of any response to the HIV epidemic. Responses to HIV epidemic are directed at prevention of new infections, care, treatment and support of infected individuals. In Tanzania, HIV interventions include behavior change communication campaigns, voluntary testing and counseling, prevention of mother-to-child transmission (PMTCT) and provision of Antiretroviral drugs (ARVs). These interventions have been scaled up throughout the country.

PMTCT services have been integrated into ANC services and by December 2008 about half of eligible HIV infected mothers received ARV prophylaxis while only about one third of infants received ARV prophylaxis (NACP PMTCT, 2008). International commitments included the Abuja Declaration and WHO 3 by 5, International Center for AIDS Program (ICAP) and US Presidential Emergency Plan for Aids Relief (PEPFAR); national commitments include Presidential Declaration of HIV/AIDS as a disaster (1999), formation of Tanzania Commission for AIDS development of HIV/AIDS Policy (2001), development of National Multisectoral Strategic Framework (2003-2007). The National Multisectoral Strategic Framework (2003-2007) resulted in development of Health Strategy on HIV/AIDS (2003-2006) which includes three thematic areas namely Prevention, Care and Treatment, and Cross cutting issues. Based on the care and treatment thematic area of the Health Strategy on HIV/AIDS, the National Care and Treatment Plan (NCTP) was developed and approved in 2003. The effective implementation of the Health Strategy on HIV/AIDS started on October 2004 by initiation of Care and Treatment Clinics.

1.4 Rejection of misconceptions about HIV/AIDS

According to the 2011-12 THMIS the common misconceptions regarding HIV transmission, the population was found to correctly reject the common misconceptions about transmission whether a person getting the AIDS virus from mosquito bites, from

supernatural means, or from sharing food with a person who had AIDS has improved. The vast majority of Tanzanian adults know that people infected with HIV do not necessarily show signs of infection. The 2011-12 THMIS reveals that comprehensive knowledge about AIDS is low and has changed little from the results reported in the 2007-08 THMIS.

Comprehensive knowledge about AIDS varies with respondent's age, education, wealth, and residence. The youngest (age 15-19) respondents and the oldest (age 40-49) respondents are the least likely to have comprehensive knowledge about AIDS. As expected, women and men with higher levels of schooling, those from the wealthier households, and those in urban areas are more likely than other respondents to have comprehensive knowledge about HIV/AIDS. The percentage of women and men who have a comprehensive knowledge about AIDS is lower in Zanzibar than in Mainland Tanzania. The 2011-12 THMIS respondents were also asked whether AIDS can be cured. This is a country specific question that was last asked in the 1996 TDHS. The number of respondents who believe AIDS can be cured has increased.

1.5 National policy on HIV/AIDS

The HIV/AIDS epidemic is a national disaster affecting Tanzanian society economically, politically, socially, and culturally. The government of Tanzania is committed to the national vision of freeing the country from the epidemic, thus producing a generation living without fear of HIV and AIDS. This vision will be attained in line with the UNAIDS vision of three zeros: zero new HIV infections, zero discrimination, and zero AIDS-related deaths.

The government of Tanzania has made substantial progress in HIV and AIDS prevention, care, treatment, and impact mitigation. Progress has been made in resource mobilization, communication, advocacy, and community participation. The government continues to increase the level of funding for the national response to HIV/AIDS in its annual budget and through collaboration with national and international communities. The government has been facing social, economic and development challenges resulting from the HIV epidemic and has made various efforts to address these challenges.

The challenges need concerted, multidisciplinary effort from all HIV stakeholders at all levels, government and nongovernment, which includes civil society organizations, communities, and individuals. The Tanzania Commission for AIDS (TACAIDS) under the Prime Minister's Office is mandated to provide strategic leadership and coordination of HIV and AIDS national responses through development of a strategic framework and national guidelines for HIV and AIDS. The development of the National Guidelines on HIV Prevention Strategy (Prime Minister's Office: TACAIDS, 2010) and the National Stigma and Discrimination Reduction Strategy (Prime Minister's Office: (TACAIDS et al., 2011) are the government's road maps to curbing the epidemic.

The revised National HIV Policy 2011 and the National Multisectoral Strategic Framework (2013-2017) are the guiding tools for the implementation of HIV/AIDS activities (Prime Minister's Office. (TACAIDS et al, 2011).

These documents are developed in line with international guidelines on HIV and human rights to ensure the accountability of the government and other stakeholders (the private sector, development partners, civil society organizations (CSOs), and the community) in their actions within the national response to HIV/AIDS. The National Strategy for Poverty Eradication (Ministry-of-Finance, 2012) and the National Development Vision 2025 stipulated the need to address HIV in the development agenda.

This policy emphasizes the importance of HIV mainstreaming in all sectors (MFEA, 2010 President's Office, 1999). The 2011-12 THMIS is a potential source of information for planning, monitoring, and evaluation of HIV and AIDS Programs. The relevance of the policy to this study is that, where necessary the findings and information generated from this study might contribute to the enlightenment of the policy makers to include the reproductive health needs of the PLWH upon review of the policy document. This will ensure that the quality of life and longevity of the life span among PLWH that is contributed by ART's go together with their reproductive health needs.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Fertility desires and intentions among PLWHA

According to the (National-Bureau-of-Statistics-(NBS)-Tanzania, 2011)the total fertility rate (TFR) in Tanzania is 5.4 children per woman. This means that, at current fertility levels, the average Tanzanian woman will have given birth to 5.4 children by the end of her lifetime ie reproductive carrier. The 2010 TDHS estimate of fertility is lower than the rate estimated by the 2004-05 TDHS (5.7 births per woman), which was similar to the rates established in the 1996 TDHS (5.8 births) and in the 1999 Tanzania Reproductive and Child Health Survey (TRCHS) (5.6 births). At the current level, evidence suggests that fertility in Tanzania may have started to decline. According to the DHS 2004-05, the Total Fertility Rate (TFR) was 5.7 births per woman in Tanzania, which was considered to be among the highest rates in sub-Saharan Africa. Rural women, on average, have 3 more births than their urban counterparts.

Compared to previous surveys data show that although fertility has declined overall over the last two decades in Tanzania, there has been little or no decline among women with no education or women living in rural areas. About 65.4% of women in the general population desire for more children. The desire to have children among PLWHA has been shown to be about 70% (Mpangile, Sima, Praag, & Mmbaga, 2006) which is slightly higher than the general population. These findings are different from findings in Ethiopia where the desire to have children among PLWHA was found to be 40% (Tamene & Fantahun, 2007). In Tanzania the ideal number of intended children was 5.0 for all women and 5.4 for currently married women. The intention to have children is higher among rural than urban women.

Generally, fertility intentions and reproductive decision-making among PLWHA appear to be influenced by health system, individual and socio cultural factors. They include perceived risk of vertical and heterosexual transmission, beliefs about vertical transmission risk reduction strategies; desire for motherhood, personal health-related concerns; stigma; religious values; attitudes of partners and health care providers; and the impact of the mother's health and longevity on the child (Craft, Delaney, Bautista, &

J. M. Serovich, 2007; Kline et al., 1995; Tamene & Fantahun, 2007). Findings of available studies regarding predictors of reproductive intentions in PLWHA provide suggestive but inconclusive results. It has been suggested that pregnancy intentions of women and men living with HIV are similar to those of uninfected, though HIV status may be linked to reduced desire for children for some. Fertility desire and intention for childbearing is said to be a powerful predictor of pregnancy outcome. In a longitudinal study among Malawian women conducted by Chanza et al on 'pregnancy intention, contraceptive intention, contraceptive use and unintended pregnancies before and after notification of positive HIV', participants who reported intention and desire to become pregnant were three times more likely to become pregnant after 12 months follow-up than those who reported no intention and desire for pregnancy (Chanza, 2006) These findings indicate a strong association between intention to become pregnant and pregnancy incidence.

In this study, the desire to become pregnant decreased from 33% before HIV positive test results were known to 14%, 12 months after, indicating that HIV status has a powerful influence on decision making whether to have children or not. Symptomatic women ($CD4 < 200$) are less likely to want to become pregnant in a similar way as are those women who feel well ($CD4 > 200$) who also reduce their desire for pregnancy significantly once their positive status is known (Chanza, 2006) showing that the health status of the woman has no influence on fertility desires.

Health care providers have been at the forefront at discouraging HIV infected women from having children with an emphasis on control of the epidemic while sidelining the autonomy of people living with HIV/AIDS in relation to reproductive decisions .(Oliveira & Junior, 2003) In an exploratory study on 'fertility preferences and family planning experiences among ART clients in Kenya', counseling messages included, in preference order, the use of condoms, don't get pregnant, how to meet reproductive goal and Prevention of Mother to Child Transmission (PMTCT) (Sarna et al., 2008)The frequently cited message by health providers that PLWHA shouldn't get pregnant undermines the basic reproductive needs and rights of these individuals, who are of reproductive age and may not have children at the time of diagnosis. In a study on

pregnancy decisions among women with HIV in the US, women with a procreative inclination were more likely to choose to become pregnant which outweighed social support and personal health concerns who also represented a 13% of respondents reporting non condom use because of religious influence (Craft et al., 2007). The desire for motherhood is so strong among sexually active HIV infected individuals and is partly influenced by the socio cultural environment or a personal drive.

In a study by (Mpangile et al., 2006) on sexual and child-bearing needs of people on ART in Tanzania, about half (46%) of respondents said they were not using condoms because they wanted to conceive. In one of the Focus Group Discussions (FGDs) in this study, one woman was quoted as saying, *“I have always wanted a child, I don’t have one and feel I must have one of my own”*, to underline the deeply ingrained influence of socially constructed identity attached to childbearing and parenthood. Social pressures to have children are more pronounced in rural than in urban areas. In rural areas, cultural values are attached on fertility and a significant social status is assigned to people with children (Dyer & Hoffman, 2002). It appears that cultural and psychosocial factors exert a more important influence on decisions about pregnancy than the possibility of perinatal transmission and acceleration of the disease process in the mother. In many cases, the 50% risk of having an uninfected infant makes conception and continuation of the pregnancy an acceptable risk (E. J. Mmbaga, Leyna, Ezekiel, & Kakoko, 2013) Conception and childbearing has a positive impact on the quality of life and restores the sense of “normalcy” in HIV infected individuals (Sunderam et al., 2008).

In a study to ‘explore HIV-positive women's desires, intentions and decision-making in attaining motherhood’ in India, (Kanniappan, Jeyapaul, & Kalyanwala, 2008) found that the main factors distinguishing women who wanted to have a child and those who did not, were their levels of anxiety about the future and available family support. Women who indicated that they did not have family support and were stigmatized by the family were reluctant to opt for a pregnancy as they were not sure of the future, including child care in event of parental death. In contrast, those women who decided to have a child did so based on family support, especially when family members offered to take care of

the child in the future. In the study, it was found that awareness and access to PMTCT and ART was one of the key factors guiding the final decision on child bearing, similar findings as in (Rutenberg, Biddlecom, & Koana, 2000) who, based on small number of studies and inference from trends, reported that PMTCT and ARV availability is associated with increased fertility desires. The authors of this study conclude that their findings highlight the need for further research on issues faced by women living with HIV/AIDS (WLHA) in fulfilling their fertility desires and intentions and for programmes that both enable WLHA to exercise informed choice in meeting their fertility desires and sensitize healthcare providers about these needs.

2.2 Choice and use of different Family Planning methods among PLWHVA

Since studies have shown that individuals infected with HIV are of reproductive age and continue to desire and bear children, the prevalence of use of contraception is critical. In the general population, the total demand for family planning among currently married women is 50 percent and only about half of that demand (56 percent) is satisfied. Desire and intention to have children have a substantial effect on the choice and use of family planning (FP) methods for HIV seropositive and seronegative individuals (Massad et al., 2007) The choice of and level of use of FP methods have a greater implication on heterosexual HIV transmission and to vertical transmission. Factors associated with non use of FP methods include desire for as many children as possible, number of living children, fear of side effects, husband/partner opposition and lack of knowledge about FP methods and Socio-demographic factors (age, sex, marital status, locality, education, income). Studies have shown that contraceptive use in rural areas is as less as 3.2% (Mroz, 1999) Some studies have shown that HIV positive status influences fertility intentions, especially the desire to stop childbearing among those who have completed their families, who therefore may favor the choice of permanent methods (Rutenberg et al., 2000).

Studies of HIV+ve women elsewhere in developing and developed countries have revealed contradictory findings. Some of these studies have indicated very low contraceptive use but cannot attribute to HIV status, yet in others contraceptive use

among HIV+ women increased after Voluntary Counseling and Testing (VCT). In other studies it has been shown that HIV+ women were no more likely to use contraception than HIV-ve women with similar characteristics. (E. J. Mmbaga et al., 2013; Rutenberg et al., 2000) In developed countries, condom use is frequently reported but it is not clear if it is for fertility control or prevention of HIV transmission. There is no evidence for association of HIV status and use of other contraceptive methods and method choice differs by partner serostatus. Seroconcordant couples are more likely to use oral contraceptives and intra-uterine devices while serodiscordant couples prefer condoms (Rutenberg et al., 2000), indicating that individuals are aware that an uninfected partner can be infected from the infected partner but unaware of re-infections. However, there is still uncertainty regarding the risk and consequences of re-infection (Delvaux & Nostlinger, 2007). For discordant couples, limited evidence shows no association between combined oral contraceptive use and the risk of female-to male HIV transmission (World-Health-Organisation, 2006) although other studies indicate a tendency towards an increased risk among high risk populations of women, such as sex workers. (Wang, Kreiss, & Reilly, 1999).

Other studies among those using family planning services found no overall increase in risk of HIV acquisition related to the use of hormonal contraception. (Morrison et al., 2007) IUDs can be used in case of HIV infection, except for women with AIDS and those not on antiretroviral therapy (World-Health-Organisation, 2004, 2006) In the Malawian longitudinal study it was found that, the use of non-condom FP methods increased in women who perceived their health to be fair/poor but decreased in those perceiving their health to be good/excellent 12 months after HIV diagnosis. On the other hand, the use of non-condom FP methods increased in both participants with $CD4 < 200$ and those with $CD4 > 200$ 12 months after HIV diagnosis (Chanza, 2006) Choice of FP methods and level of use among PLWHA have not been investigated in Tanzania and the DHS provide no information. Since recent studies elsewhere have shown that most of hormonal contraceptives and IUDs are safe for use with PLWHA (L Myer, Denny, & Wright, 2007; National-AIDS-Control-Programme-(NACP)-Tanzania,

2008; Richardson et al., 2007). It is therefore important that the level of use and factors influencing FP preferences be systematically explored.

2.3 Balancing reproductive rights and HIV transmission

As more than 80% of all women living with HIV and their partners are in their reproductive years, many will continue to want children after learning their positive status, whether to start a family or to have more children. More than 80% of HIV infections in adults are due to heterosexual transmission. In children, more than 90% of HIV infections are due to vertical transmission. (National-AIDS-Control-Programme-(NACP)-Tanzania, 2008) The magnitude of HIV serodiscordance status is about 8% in Tanzania (National-AIDS-Control-Programme-(NACP)-Tanzania, 2008)but may be as higher as 20% in other settings ((Landon Myer, Morroni, & Rebe, 2007).

As many PLWHA desire to have children and whose partners may be HIV-free, they have to have unprotected sex with un-infected or infected partners in order to conceive. This may result into further HIV transmission. As policies and guidelines have emphasized on prevention of heterosexual and vertical transmission or have only bluntly stated ‘PLWHA have the right to bear children and raise a family’ without providing means on how to go about it safely, information that may help PLWHA make informed decisions on childbearing while limiting vertical and heterosexual transmission of HIV is highly needed. This information may be useful in promoting and protecting the rights of women and men living with HIV/AIDS in making informed decisions about reproduction.

2.4 Effects of HIV/AIDS on fertility

Studies have suggested that fertility and birth rates among women with HIV infection are lower than the general population and the rate of termination is higher. In an Australian study to measure the fertility and birth rates it was found that the annual general fertility rate was 30 per 10,000 compared with 63 per 10,000 for the female population aged 15-44 years, and the birth rate in women with HIV-1 infection was one-half that of the general female population (Thackway et al., 1997). Reduction in

pregnancy prevalence in HIV-infected women has been associated with decreased rates of conception and increased rates of pregnancy loss (Gray et al; 1998).

In sub-Saharan Africa however, one study found that HIV-1 infection is associated with lower fertility among women and this association is not explained by the frequency of sexual intercourse, illness, knowledge of HIV status or infection with other sexually transmitted diseases (Ross, Paal, & Lubega, 2004) Low gravidity prior to seroconversion in this study was shown to be due to pre-existing sub-fertility accounting for almost 50% of the observed association between HIV infection and lowered incidence of pregnancy, after adjusting for age, lactation, illness, Sexually transmitted Infections (STI) and the frequency of sexual intercourse.

This can be explained by the fact that, women with fertility problems are at increased risk of marital instability, and therefore HIV infection, indicating a reciprocal relationship between preexisting low fertility and HIV infection. In developing and developed countries, the negative impact of HIV on pregnancy is possibly reversed by introduction of ART but this is inconclusive. Prospective studies have found a lower pregnancy rates after HIV diagnosis but not clear whether this is due to biology or behavior. Further more, some cross-sectional analyses found a non-significant association between pregnancy incidence and HIV infection.

2.5 Overview of HIV/AIDS epidemic in Coast region

HIV/AIDS is a killer disease in all the regions of Tanzania including the Coast region. The cases reported resulting from HIV/AIDS in Coast region from 1998 to 2005, show the number of cases was increasing in all districts but the rate was higher in Mkuranga district than other districts. The second area with high cases was Kisarawe district. However, the cases were more serious in Kibaha district between 2004 and 2005. The same report reveals that on average, females were reported more than males except in 1999. In the same report, Mafia district had lesser cases of HIV/AIDS than other districts. Mafia district being an Island could be among the influencing factor of having minimal number of HIV/AIDS. Overall findings suggest that precaution against HIV/AIDS must be taken seriously as the killer disease is not curable. Precaution

should be taken in all districts but more strategically in Mkuranga, Kisarawe and Kibaha districts. (National-Bureau-of-Statistics, 2007).

2.5.1 PMTCT- prevention of mother to child HIV transmission

Tanzania aided by her developmental partners has implemented the recommendations for use of Antiretroviral drugs in pregnant HIV-infected women for maternal health and interventions to reduce perinatal HIV transmission in the Country and global. The guidelines have been developed to provide health care providers with information for discussion with HIV-infected pregnant women to enable the patient/health services provider team to make informed decisions regarding the use of ARV drugs during pregnancy and use of scheduled cesarean delivery to reduce perinatal transmission of HIV but in other places in the Country spontaneous vaginal delivery-SVD is in use.

The recommendations in the guidelines are accompanied by discussion of various circumstances that commonly occur in clinical practice and the factors influencing treatment considerations.

Health care providers considering the use of ARV agents for HIV-infected women during pregnancy must take into account two separate-but related-issues: 1. ARV treatment of maternal HIV infection; and 2. ARV chemoprophylaxis to reduce the risk of perinatal transmission of HIV. The benefits of ARV drugs for a pregnant woman must be weighed against the risks of adverse events to the woman, fetus, and newborn. Combination drug regimens are considered the standard of care both for treatment of HIV infection and for prevention of perinatal transmission of HIV. After provider counseling and discussion about ARV drug use during pregnancy, a pregnant woman's informed choice on whether to take ARV drugs for her treatment, for prevention of perinatal transmission, and/or to follow other medical recommendations intended to reduce perinatal transmission of HIV should be respected.

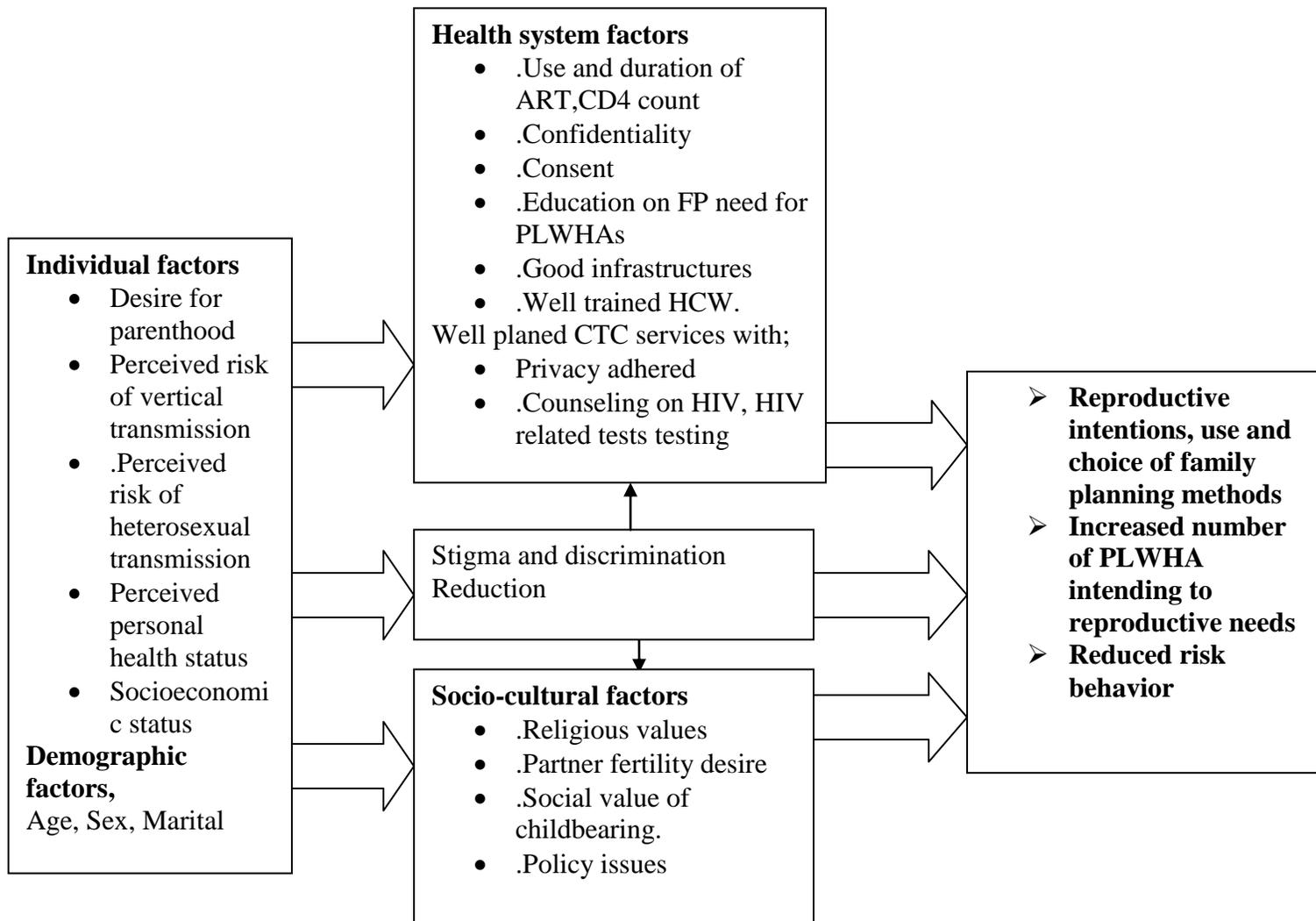
The current guidelines have been structured to reflect the management of an individual mother-child pair and are organized into discussion of preconception care followed by principles for management of a woman and her infant during the antepartum, intrapartum, and postpartum periods. Since PMTCT is solely a preventive measure of HIV infection to the new born either before birth, during birth and after birth, the

current study is dedicated to the HIV infected respondents reproductive health needs that is their desires and intentions to have children including their FP choices; therefore the details of PMTCT will not be exosted.

2.6 CONCEPTUAL FRAME WORK

This study was conducted basing on a problem diagram shown in Figure 1 below which depicts reproductive intentions, use and choice of FP methods as main outcome variables that is characterized with the increased number of PLWHA intending to reproductive needs and the reduced risk behaviors. The figure also identifies sociocultural, health system factors and individual factors, policy issues and demographic factors as key predictor variables. The figure shows that, these factors may act individually or as a group or indirectly through other factors to influence the outcome variables. The outcome and predictor variables from this figure are further enlarged under methodology.

Figure 1: Determinants of Reproductive intentions in PLWHA – a conceptual framework



2.7 Statement of the Problem

Over the years, there has been an increasingly growing attention on the health care needs of PLWHA worldwide. This has included, among others, ART and the management of opportunistic infections (OIs). Scaling up of ART is currently underway in Sub-Saharan Africa, including Tanzania. This scale up has led to increased access to ARVs, subsequently increasing survival of PLWHA and improved quality of life.

However, despite the increasing attention to the health care needs of HIV-infected individuals in low resource settings, little attention has been given to their reproductive

health needs to keep pace with increasing longevity due to ART. Available data on pregnancy intentions and FP methods among PLWHA are contradictory and inconclusive. Studies in both developed and developing countries have suggested that many HIV-infected women and men continue to desire and bear children despite their knowledge of HIV status.

This can partly be explained by the fact that most people infected with HIV are of reproductive age (15-49) and continue to remain sexually active and most pregnancies occurring PLWHA could therefore be intentional (Santos et al; 2002). Desire to have children has a significant effect on HIV transmission and on the choice and use of family planning (FP) methods. Individuals with HIV infection and who desire to have children are less likely to use barrier methods of contraception which may in turn contribute to both horizontal and vertical transmission. About 90% of HIV infections in children are due to vertical transmission. (National-AIDS-Control-Programme-(NACP)-Tanzania, 2008) In developed countries, innovative techniques have been devised to meet the reproductive needs and choices of PLWHA, ranging from artificial insemination to sperm washing. These options are not available in Sub-Saharan Africa, including Tanzania.

Policy issues, economical, personal, social and cultural perspectives can be relevant explanations for this disparity. HIV-positive men and women report strong pressure from family members, people in their community and health care providers to give up the idea of having children due to perceived risk of perinatal HIV transmission or out of concern for the welfare of children who may be orphaned. Similarly, childbearing in most societies plays a central role in the social identity of both men and women. Regardless of their HIV serostatus, couples are expected to have children. Policies and social stigma have discouraged reproductive needs of PLWHA and it remains a controversy whether they should bear children or not.

The magnitude and determinants of reproductive health needs among PLWHA are not well known in Tanzania. Available data does not provide comprehensive information on determinants of fertility desire and intentions and FP use and choices among PLWHA. It is for this reason that this study is to be conducted in Coast region in order to

contribute to a better understanding of the magnitude of the reproductive health needs (fertility desire and intention, FP choice and use) among PLWHA for HIV prevention and impact mitigation efforts.

2.8 Rationale

There is substantially large number of studies that has shown there is a big number of PLWHA in sub-Saharan African countries including Tanzania. Majority of PLWHA are of reproductive age and continue to desire and bear children. Studies have suggested that many HIV-infected women and men continue to desire and bear children despite knowledge of their HIV status. Bearing children and protecting the partner and the baby from HIV infection are all human right issues. In order to understand the balance between reproductive health needs and HIV prevention, information on the fertility desire, intention and FP use among PLWHA is considered of paramount importance. Description of social, cultural and medical determinants influencing these reproductive health needs is crucial in providing data to inform the development of policies in guiding intervention measures. Therefore, there is need to investigate the magnitude and fertility desire and intentions and explore the magnitude, and choice of contraceptives use among PLWHA.

This study is set out for the purpose of describing the magnitude of fertility desire and intention to have children and contraceptive use among PLWHA, findings from the current study may ultimately serve as a benchmark for gauging the fertility desire and intention, parenthood and other FP related counseling and service needs of HIV infected adults. Furthermore the current HIV/AIDS policy in Tanzania has not adequately addressed the reproductive health needs of PLWHA. Results may provide additional data necessary for fast tracking the ongoing efforts of integrating reproductive services for PLWHA in AIDS clinics and in voluntary counseling services, and assess factors that influence reproductive needs and intentions. Data presented here may contribute to a better understanding of fertility desire and intentions and demand for contraception needed to promote and protect the rights of women and men living with HIV in making informed decisions about reproduction.

This study was conducted in Coast region for the reason that it is one of the top five severely affected areas with HIV/AIDS in Tanzania with a disease prevalence of 5.1% (THMIS, 2011-2012). Over the 30 years since the HIV/AIDS epidemic in Tanzania began, emphasis has been placed on the development of strategies and approaches to scale up interventions, and care and treatment services. As of 2011, an estimated 1.6 million people in Tanzania are living with HIV, and among them, about 1.3 million are age 15 and older (UNAIDS, 2011).

From 2004 to 2008, the national HIV prevalence in Tanzania decreased from 7 percent to 6 percent (TACAIDS et al., 2011) Nevertheless, the number of people estimated to be infected with HIV has held steady because of ongoing new infections, population growth, and the availability of life-sustaining treatment for those infected. The cumulative number of clients on anti-retroviral treatment (ART) as of June 2012 was 626,444, surpassing the anticipated target of 440,000 by 2011 (National-AIDS-Control-Programme-(NACP)-Tanzania, 2011). Despite declining trends of HIV infections and prevalence, Coast region remains heavily burdened by the disease due to a long standing high prevalence with PLWHA estimated to be 55,636 (HIV/AIDS/STI Surveillance Report Number 22- August 2011), and majority of them are of reproductive age. The existing care and treatment infrastructure in Coast region provide a unique opportunity to integrate research questions. This study is also conducted as part of the requirement for partial fulfillment of the award of Masters of Public Health of the Muhimbili University of Health and Allied Sciences (MUHAS).

2.9 Research questions

1. What is the magnitude of fertility desire and intention among PLWH in Coast region?
2. What are the determinants of fertility desire and intentions of PLWH in Coast region?
3. What is the magnitude and choices of modern contraceptives among PLWH in Coast region?

4. How does antiretroviral therapy use influence fertility desire, intentions and family planning choices among PLWH?

2.10 Research Objectives

2.11 Broad objective

The main objective of this study is to investigate the prevalence and determinants of reproductive health needs among people living with HIV/AIDS in Coast region.

2.12 Specific objectives

1. To determine fertility desires and intentions among PLWH in Coast region
2. To determine factors associated with fertility desire and intention among PLWH in Coast region.
3. To investigate the choices of various FP methods used by PLWH in Coast region
4. To determine factors affecting choice and use of different FP methods by PLWH in Coast region.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

This study employed a cross-sectional design. Despite its inability to generate causal-effect relations, gathered information may offers a detailed description of the magnitude of fertility desire and intention and family planning methods used by PLWH. Gathered information also may allow exploration of factors associated with reproductive health needs. The list of individuals who were receiving continued counseling, nutrition support, ART and follow-up in the selected CTC sites in the Coast Region was identified from Tumbi Referral Hospital and Mkuranga district hospital CTCs respectively. In collaboration with staff of the counseling, the researchers (PI, RA) made appointments with all PLWHA attending the centre and an interview scheduled during their normal clinic days. A structured questionnaire was administered to all consenting participants in a face –to-face interview by trained interviewers. Data on social demographic characteristics, reproductive history, fertility desire (expecting to have children in the future), and fertility intention (number of children intended in the future), medical condition (CD4 count, ART status) and perceived health and HIV transmission knowledge were collected.

3.2 Study Site

Coast region is on the Eastern part of Tanzania mainland and a large part of the region is situated along the Indian Ocean costal belt. The region shares borders with four regions. Northern part is Tanga region, 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. This factor attracts the high social interaction of adults looking for market of their products. As they get money following marketing of their products, this reason together with its geographical allocation as a region may contribute to increased likelihood to acquire HIV infection. This is due to the likelihood that increase of individual economic status

is also associated with extravagance life expenditure eg alcoholism heading to prostitution, also the majority of this population on HIV/AIDS is sexually active.

Table (1) List of CTC sites in the Coast Region.

DISTRICT	NO. OF CTC	NAMES OF CTC
<i>Kibaha District</i>	<i>Five</i>	1Tumbi Hospital,2Mkoani Urban health centre, 3Kongowe Dispensary,4Nyumbu Dispensary,5 Miswe Dispensary
<i>Mkuranga</i>	<i>Eight</i>	1Mkuranga District Hospital,2Mkamba health centre,3KisijuHealthcentre,4MagawaDispensary5Kibuyuni Dispensary6Mkuranga salvation sistersDispensary,7Vikindu st Vincent Health centre,8 Kilimahewa-Kilimanjaro sisters Dispensary
<i>Bagamoyo</i>	<i>Seven</i>	1Bagamoyo Dispensary,2Chalinze Health Centre,3Lugoba Health Centre,4Miona Health Centre,5Kiwangwa Health Centre,6Msata Dispensary,7Ubena Prison Health centre
<i>Kisarawe</i>	<i>four</i>	1Manerumango Health Centre,2Mzenga Health Centre,3Hombiza Dispensary,4Masaki Health Centre
<i>Rufiji</i>	<i>Eight</i>	1Mchukwi Mission Hospital,2Utete District Hospital,3Ikwiriri Health centre,4Kibiti health centre,5Nyaminywili Health Centre,6Nyamisati Dispensary.7Bungu Dispensary,8Mbwera Dispensary
<i>Mafia</i>	<i>Five</i>	1Mafia Hospital,2Utende Health centre,3Mibundani Health Centre,4Kironawe Health Centre,5 Baleni Health Centre

Moreover, the region could get raw materials from neighboring regions and these are important factors on economic improvement. The economic improvement has the positive side and the negative consequences leading to extravagance spending and increased high risk life style expenditure heading to HIV infection acquisition.

Total surface area of Coast region is 33,539 km². Out of this, 32,407 km² or 96.6 percent is land area while 1,132 km² or 3.4 percent is water surface.

Overall computation shows that Coast region surface area is about 3.7 percent of Tanzania main land. On district basis- the largest proportion of the area is in Rufiji district followed by Bagamoyo district. Rufiji district covers 39.8 percent of total regional area. The second is Bagamoyo district with 29.3 percent of the total regional area. However, Mafia district is the smallest with only 1.5 percent of the total regional area. Rufiji and Bagamoyo districts could be potential for agro-production. As well, Bagamoyo, Rufiji and Mafia districts could be rich on fishing economy. Similarly, Mkuranga and Kisarawe districts are potential for fishing industry while Kibaha district lacks water bodies for fishing activities. The only requirement is how to exploit such potentialities and use the existing opportunities to earn a living at a faster rate.(Source: Coast region socio-economic Profile)

3.3 Study population

This included all PLWH who were recruited as they are attending CTC in the selected districts of Coast region.

3.3.1 Inclusion Criteria

- HIV infected and receiving HIV/AIDS Care and Treatment services in Coast region at selected sites
- Have attended at least one visit at the CTC

3.3.2 Exclusion Criteria

- Aged below 18 years or above 49 years for females and 54 years for males
- Health/mental condition rendering it impossible to obtain informed consent or perform interview.
- Too sick to be interviewed or give consent.

3.4 Sampling Procedure

A three level multistage sampling procedure was employed as follows:

Stage I

This stage involved the selection of study districts. All rural and urban districts were listed separately and simple random sampling was used to select one urban and one rural district in which the study was conducted.

Stage II

This stage involved listing of all CT clinics in the two selected districts; this was obtained from the Regional and District ART coordinators. At this point One CT center from each district was selected using simple random sampling technique.

Stage III

This stage involved obtaining study participants from each of the selected CTC identified in stage II. With the help of the CTC staff, the list of all PLWH registered at each CTC was obtained and the schedules of their attendance were examined. Given the number of clients scheduled per day per week and time allocated for data collection, study participants were recruited by convenience sampling where by we interviewed the respondents in the two selected CTC , aided by four RA – two RA at each CTC till we achieved the sample size.

3.5 Sample size

The sample size in this study was determined from the single proportion formula for cross-sectional, prevalence studies.

$$n = \frac{4p(100 - p)}{\epsilon^2}$$

Where

n = sample size

p = Order of magnitude of proportion, 70% in this study corresponding to proportion of PLHIV who desire to have children (Mpangile G et al, 2006)

ϵ = margin of error allowable on population proportion, set at 5%

Substituting, this gave
$$n = \frac{4 \times 70(100 - 70)}{5^2} = 280 \times 30/25 = 336$$

Adding 10% of calculated value to account for possible non response, the minimum required sample size is estimated to be 368 participants from the two selected CT clinics. These participants were obtained from CTCs of Mkuranga District hospital and Tumbi Referral Hospital.

3.6 Data collection techniques and tools

A pre-tested standard questionnaire was used to obtain data. The questionnaire has closed and open-ended questions with items designed to cover the objectives of the study. The questionnaire was developed based on study objectives, literature review and the problem analysis matrix. Data collection covered information on socio-demographic characteristics, HIV/AIDS transmission knowledge in the context of PLWHA, HIV/AIDS history and general health, reproductive history, fertility desires and intentions and family planning practices. These items provided data on outcome and explanatory variables of this study. Using this standard questionnaire which was pre-tested in different CTC from those where study was conducted, and then a face-to-face interview was performed to collect data.

3.7 Investigation tools validity and reliability

The tool used for data collection in the current study was a standard questionnaire that has previously been used in a different population and now is being rerun in the Coast region identified CTC sites.

3.8 Research Variables

Outcome Variables

Outcome Variables include Fertility desires, Fertility intention and Use of family planning and will be estimated as follows.

Fertility desires in the context of this study, fertility desire referred to the aspiration to want to bear a child or children among study participants. Fertility desire was determined in individuals who already have children and in those who do not have children. Participants who are pregnant or whose partners are pregnant were asked if they would like to have extra children after delivery to determine their fertility desires.

Fertility intention in this study was determined by examining the ideal number of children PLWHA would want to have in their entire lives. The question for fertility intention was phrased differently in individuals who had children from those who did not have children. Fertility intention was determined in both individuals expressing desire for extra children and those who did not express desire at the time of data collection.

Use of family planning was determined by asking clients if they had ever used, currently using or would use family planning in the future to determine past use, current use and future use of family planning.

Explanatory variables

- Sociocultural factors
 - Religious values
 - Partner fertility desire
 - Social value on child bearing
- Health system factors
 - Use and duration of ART
 - CD4 count
- Individual factors
 - Demographic characteristics (age, sex, education, marital status, residence etc)
 - Desire for parenthood
 - number of living children
 - Perceived risk of vertical transmission
 - Perceived risk of heterosexual transmission

- Perceived personal health status

3.9 Data collection

Training and Recruitment of Research Assistants

One day training was conducted by the PI (principle Investigator) to orient the four research assistants (RAs) on the study protocol prior to data collection. The RAs were holders ordinary diploma in Nursing and with experience in VCT counselling and/or HIV/AIDS Care and treatment. Two of RAs were recruited from each of the study CTCs identified sites. Previous studies on fertility intentions have shown success in recruitment when using counsellors as RA's as this tends to maximize confidentiality and interviewer-interviewee interaction (Chanza, 2006) One day training was conducted on objectives of the study, overview of data collection process, selection criteria, obtaining consent, interview skills, data collection instrument, how responses are recorded and assuring confidentiality.

Pre-test of instruments

Pretest was conducted prior to the real study to test for content and clarity of questionnaire items. This was done by interviewing 20 PLWHA from CTC center similar to the identified CTC's in the current study was done namely the Mwananyamala CTC. The out come of the instrument pre-test was that the RAs proved to be oriented with it and respondents understood the tool thus they were responding well.

Data Collection tasks and logistics

The study was conducted during routine CT visits where participants received routine services at the CTC followed by invitation to participate in the study. The study was introduced at every clinic day every morning prior to commencement of routine clinic activities. Eligible participants went through a consenting process in secured rooms with RA or PI and the consent to participate was finalized by signing the ICF. Interviews were performed at each study site after clients had gone through all clinic operations or before. Each interview lasted for approximately 30-45 minutes. Coding for the open ended questions and data entry will be done by the PI aided by stastitian.

3.9.1 Data handling and quality control

Supervision of questionnaire filling by the PI was the main aspect of data quality control. PI's availability for clarifications was another measure of quality control. The risk of RAs recording wrong responses on account of having misunderstood questions was minimized. The PI rotated at the two sites after every two days or even before as need rose to oversee data collection process and check all previously filled questionnaires for consistence and completeness.

3.10 Data processing and analysis

Data from the questionnaire was cleaned and verified to minimize entry errors, outliers and missing values. Answers from questionnaire were coded and the codes were saved in the code book for future use in interpretation. Data entry was done into SPSS 20.0 software. Statistical Package for social scientist (SPSS) software processed data according to objectives. Tabulation and percentages was used to illustrate study findings. Frequencies were generated for categorical variables and proportion of fertility desire and FP use was obtained. Differences between proportions were examined using Chi-square test for differences in proportions. All variables which had p value less than 0.2 were entered in a Multiple Logistic Regression model to assess the individual variable effect on the outcome while other variables has been controlled. The open ended questions were analyzed by going through all the open ended response conceptualize the information and grouped similar message together in the manner that can be analyzed. Continuous variables in this study were the exact age and the age groups.

3.11 Ethical consideration

Ethical clearance for the proposed study was sought from MUHAS ethical review board. Research permit was obtained from regional and district authorities and from directors or heads of health facilities of selected (CTC) Care and Treatment centers. Participation in the study was on voluntary basis after participants had received the description of the study and its objectives. Individual informed written consent was sought from participants and privacy and confidentiality was ensured during and after data collection.

CHAPTER FOUR

4.0 RESULTS

4.1 Sociodemographic profile of respondents

A total of 368 HIV infected individuals consented and participated in this study. The study protocol identifies 54year to be the maximum cut off age. Any participant above this cut off age was dropped out. Two male respondent aged 84 and 60 yrs had their female partner's whose ages were fit for the current study. Therefore the study protocol has dropped the two males out basing on their ages and will not be included in the analysis, and this makes the study participants to be 368 dropping from 370. Participants came from two selected CT clinics in Coast region which were Tumbi Referral hospital and Mkuranga District Hospital. These were characterized as urban and rural settings respectively. The mean age of the participants was 37.94 (Standard deviation (SD) =11.985) and the age ranged from 15 to 54 years. Female respondents were on the higher percent 70.5% compared with the male respondent percent 29.9%.

Sociodemographic characteristics of the study participants are depicted in Tables 2. The highest proportion of respondents was female (70.5%). Majority of the participants reported to have been married (53.6%), had primary education (52.4%), were peasants (50%) and Muslims (71.3% this study respondent 177(48.2%) had rural address while 187(51.8%) urban.

Table 2: Socio-demographic characteristics of study participants

Characteristic	Frequency (n)	Percent (%)
Age		
15-24	59	15.9
25-34	104	28.1
35-44	128	34.6
45-54	77	20.8
Gender		
Male	109	29.9
Female	260	70.5
Marital Status		
Single	49	13.6
Married	193	53.6
Cohabiting	26	7.2
Divorced/Separated	43	11.9
Widowed	49	13.6
Level of Education		
None	85	24.1
Primary	185	52.4
Secondary form 1-4	50	14.2
Secondary form 5-6	14	4.0
Post primary	2	0.6
Post-secondary form 1-4	3	0.8
Post-secondary form 5-6	14	4.0
Residence		
Rural	177	48.2
Urban	187	51.8
Religion		
Christian	94	25.5
Muslim	263	71.5
Others	11	3.0
Occupation		
Peasant	185	50.0
Employee	41	11.1
Large/medium scale business	14	3.8
Petty business	98	26.5
None	32	8.6

*Totals are different due to missing data

4.2 Prevalence of fertility desires and intentions of PLWHA

In this study population a prevalence of 107 (35%) respondents reported to desire having children compared to 199(65%) who had no fertility desire. The mean number of children desired (Fertility intention) was 3 with majority of participants 98(47.6%) intending to have 0-3 children in their life time.

4.3 Factors associated with fertility desires among PLWHA

4.3.1 Selected socio-demographic characteristics

Respondents in the age group 15-24 had a higher desire for children 24(58.5%) followed by age group of 25-34 who had 45(48.4%) desire for children than in other age groups and this difference was significant ($p=0.000$). Likewise, respondents who reported to have been married expressed a significantly higher desire for children 89(49.4%) than in the other categories ($p=0.000$). HIV infected individuals who lived in urban areas appeared to have more desire for children 72(42.9%) compared to their rural counterparts, and this difference was statistically significant ($p=0.001$) (Table 3).

Regression analysis results

On further analysis with logistic regression, respondents who reported to have never been married were 7.82 times (COR, 7.82, 95%CI: 2.66-23.03), and those married were 2.67 times (COR, 2.67, 95%CI:0.66-0.71) times more likely to desire children compared to those who were widowed, respectively which correspondingly changed to 13.86 times (AOR, 13.86, 95%CI: 4.14- 46.38), 2.23 times (AOR, 2.23, 95%CI: 2.49- 10.13) after controlling for other factors in the model .Respondents who reported Urban residence were more likely to desire for children 2.18 times COR: 2.18,95%CI:1.33-3.58 which after adjusting for other factors changed to 2.34 times (AOR:2.34,95%CI:2.23-4.46) compared their fellow rural counterparts.(Table 4b).

4.3.2 Clinical indicators

The results of this study showed that a large proportion of respondents who reported their health as excellent 43.4% , good (38.4 %) desired for more children in the future while those reporting poor health, only 7.7%% expressed desire for more children (p=0.003).(Table4)

Regression analysis results

When logistic regression models were built, participants reporting fair to excellent health status were 1.07 times more likely to desire children , and those reported their health status as good were 3.48 times (COR:3.48,95%CI:1.23-9.85,) which increased to times 7.38 (AOR:7.38,95%CI:2.12-48.53) more likely to desire children as compared to those reporting poor health status after controlling for other factors. However, these findings for rated good health status were statistically significant at 5% level (Table 7b).

4.3.3 Reproductive History

Respondents who have their own children have a significantly higher desire for children (45.6%) than those who do not (p-0.000) but was not found to be an independent predictor after performing logistic regression analysis (Table 4&4b). Similarly, the results indicated a significantly increasing desire for the respondent's who had children with the current partner 73% (p value 0.000). Respondents reporting partner desire for children had a higher fertility desire level (60.0%) than those whose partners did not want children (p-0.022) (Table 4).

Regression analysis results

Using logistic regression analysis, individuals with 3-5 children were 62% less likely to desire children as compared to those with 0-2 children (COR, 0.38(0.33-0.79)) and raised to 66% less likely after adjusting for other factors (AOR :0.34,95%CI:0.35-0.86 , p=0.004). Respondents who had 6-8 children were 58% far less likely to desire children (COR: 0.42, 95%CI: 0.08-0.96 and were even far less likely by 61% after controlling

for other factors in the model (AOR: 0.39, 95%CI: 0.07-0.83, p=0.038) compared to those with 0-2 children (Table 4b).

Table 3: Sociodemographic factors associated with fertility desires among study participants

Background Characteristic	Category	n	Fertility desire status		p-Value
			Yes n (%)	No n (%)	
Age	15-24	43	24(58.5)	19(44.2)	.000*
	25-34	93	45(48.4)	48(51.6)	
	35-44	106	30(28.3)	76(71.7)	
	45-54	62	7(11.3)	55(88.7)	
Sex	Male	93	26(28.0)	67(72.0)	.090
	Female	213	81(38.0)	128(62.0)	
Marital Status	Never married	36	4(11.1)	32(88.9)	.000*
	Married	180	89(49.4)	91(50.6)	
	Cohabiting	24	6(25.0)	18(75.0)	
	Divorced/separated	25	1(4.0)	24(96.0)	
	Widowed	34	4(11.8)	30(88.2)	
Residence	Rural	133	34(25.8)	99(74.2)	.001*
	Urban	168	72(42.9)	96(57.1)	
Level of Education	No formal education	63	15(23.8)	48(76.2)	.433
	Primary	154	63(40.9)	91(59.1)	
	Secondary	42	11(26.2)	31(73.8)	
	Post primary/second	18	7(38.9)	11(61.1)	
Religion	Christian	81	25(30.9)	56(69.1)	.351
	Muslim	213	77(36.2)	136(63.8)	
	Others	4	1(25.0)	3(75.0)	
Occupation	Peasant	158	60(38.0)	98(62.0)	.070
	Employed	35	15(42.9)	20(57.1)	
	Self employed	11	3(27.3)	8(72.7)	
	Dependant	21	4(19.0)	17(81.0)	
	Petty business	81	25(30.9)	56(69.1)	

†P-value from χ^2 test for differences in proportions * Indicates statistical significance at 5% level

Table 4: Clinical and reproductive factors associated with fertility desires

Background Characteristic	Category	N	Fertility desire status		p-Value
			Yes n(%)	No n (%)	
Clinical factors					
Perceived health status	Excellent	53	23(43.4)	30(56.6)	.003*
	Good	162	62(38.3)	100(61.7)	
	Fair	77	20(26.0)	57(74.0)	
	Bad	13	1(7.7)	12(92.3)	
Antiretroviral treatment	On treatment	214	70(32.7)	144(67.3)	.333
	Not on treatment	83	30(36.1)	53(63.9)	
CD4 Levels	200 or less	43	9(20.9)	34(79.1)	.025*
	More than 200	263	98(37.3)	165(62.7)	
Reproductive history					
Has own living children	Yes	215	98(45.6)	117(54.4)	.000*
	No	71	7(9.9)	64(90.1)	
Has children with current partner	Yes	100	73(73.0)	27(27.0)	.000*
	No	93	13(14.0)	80(86.0)	
No. of living children	0-2	93	55(59.1)	38(40.9)	.000*
	3-5	59	13(22.0)	46(78.0)	
	6-8	25	8(32.0)	17(68.0)	
Partner desires for children	Yes	95	57(60.0)	38(40.0)	.022*
	No	70	27(38.6)	43(61.4)	
	Don't Know	26	12(53.8)	14(46.2)	

†P-value from χ^2 test for differences in proportions, * Indicates statistical significance at 5%

Table 4b: Logistic regression analysis of selected predictor variables associated with fertility desire among PLWHA, Coast region

Background characteristi	Category	Crude OR (95%CI)	Adjusted OR (95%CI) †	P value
Age	15-24	1	1	
	25-34	1.26(0.07-21.54)	2.24(0.95-52.84)	0.617
	35-44	0.94(0.06-15.44)	1.76(0.08-39.75)	0.721
	45-54	0.39(0.02-6.52)	0.65(0.03-14.73)	0.791
Marital Status	Widowed	1	1	
	Single	7.824(2.66-23.03)	13.86(4.14-46.38)	0.000*
	Married	2.67(0.66-10.71)	2.23(2.49-10.13)	0.029*
	Cohabiting	0.34(0.35-3.18)	0.54(0.05-5.70)	0.611
	Divorced/Sepa rated	1.07(0.25-4.65)	1.82(0.36-9.17)	0.466
Residence	Rural	1	1	
	Urban	2.18(1.33-3.58)	2.34(2.23-4.46)	0.010*
Perceived Health status	Bad	1	1	
	Excellent	1.57(0.38-6.49)	0.91(0.24-3.41)	0.891
	Good	3.63(0.20-65.92)	1.86(0.43-8.02)	0.405
	Fair	1.39(0.42-4.69)	7.48(0.27-205.27)	0.234
Has own living children	Yes	1	1	
	No	0.95(0.18-4.98)	1.39(0.73-2.63)	0.316
Cd4 levels	<200	1	1	
	>200	1.06(0.31-3.57)	1.08(2.32-3.72)	0.008*
No. of living children	0-2	1	1	
	3-5	0.38(0.33-0.79)	0.34(0.35-0.86)	0.004*
	6-8	0.42(0.08-0.96)	0.39(0.07-0.83)	0.038*
Have child with current partner	No	1	1	
	yes	0.95(0.01-0.07)	0.016(.004-.006)	.000*
Partner wants children	No	1	1	
	Yes	0.42(0.22-0.79)	0.57(0.35-0.88)	.000*

†Adjusted OR - Odd ratios adjusted for other variables in the table, * Indicates statistical significance at 5% level

4.4 Factors associated with fertility intentions among PLWHA

Fertility intention was defined as the number of children study participants desiring to bear, children would actually prefer to have. The overall mean fertility intention was 3 with the SD 1.411. Factors associated with fertility intention are presented in Table 6 and 7.

4.4.1 Selected socio-demographic characteristics

Socio demographic factors associated with fertility intention in this study were age, marital status and education level. Results showed that majority of the age group respondents lead by the lower age group desired to have fewer (0-3) children ($p=0.001^*$) (Table 5).

Majority of the participants with primary and secondary education or higher expressed intention to have fewer children as compared to those with no formal education ($p=0.011^*$). Also this study shows a significant difference in the intended number of children in life between males and females, where by females have higher intentions (48.7%) compared to males 44.2% intending to have 0-3 total number fo children in life time. Likewise the study shows the Muslims intentions for 4-7 number of children in life is higher (44.9%) compared their follow counterparts Christians (18.6%) $p=.000^*$. (Table 5)

Regression analysis results

With logistic regression analysis, fertility intention was categorized as resopondents wanting three children or less and those wanting more than three children. Three children were chosen from the median which is approximately three. Results show that the younger the respondent the more likely is the intention to have more than 3 children (AOR: 6.91, 95%CI: 2.58-30.28) after adjusting for other factors in the table (Table 7b). Furthermore, respondents who were single had less likely intention to have more than 3 children as compared to those who were widowed (COR, 0.23, 95%CI: 0.07-0.77). Those who were cohabiting were less likely to have intention for 3 children 0.22 times

(COR: 0.22, 95%CI: 0.05-0.89) which rose to 0.66 times (AOR: 0.66, 95%CI: 0.01-0.65). Those who were single after adjusting for other factors, however, this increased to 0.74 times (AOR, 0.74, 95%CI: 0.10-0.57). After controlling for potential confounders, intention to have more than 3 children decreased as education level increased. As compared to those without any formal education, individuals with secondary education had 99.68% less likely to desire for 3 children (COR: 0.32, 95%CI: 0.10-1.10) and 99.91% after controlling for other factors (AOR, 0.09, 95%CI: 0.01-0.63) (Table 7b).

4.4.2 Clinical factors

After adjusting for other factors fertility intention was not associated with reported , ARV treatment status nor CD4 levels , having own living children,partner wanting children in this study population (Table 6 & 7b).

4.4.3 Reproductive history

Majority (78.9%) of the respondents reporting having own children intended to have fewer (0-3) children in their life time compared to those without their own children (p=0.001). Likewise, 144(65.8%) respondents who had 0-2 children reported a significantly higher intention to have fewer children than those with more than 2 children (p=0.000). However, respondents who reported to children with the current partners had higher fertility intentions of 3 children 69.9% than those whose partners did not want to have children (p=0.000) (Table 7).

Table 5: Sociodemographic factors associated with fertility intentions among PLWH

Variable	Category	N	No. of children intended in life			p-value†
			0-3	4-7	8-10	
Age	15-24	20	18 (90.0%)	2(10.0%)		
	25-34	63	37 (58.7%)	20(31.7%)	6(9.5%)	
	35-44	74	34(45.9%)	31(41.9%)	9(12.2%)	.000*
	45-54	48	9(18.8%)	25(52.1%)	14(29.2%)	
Sex	Male	52	23(44.2%)	22(42.3%)	7(13.5%)	
	Female	154	75(48.7%)	57(37.0%)	22(14.3%)	.749
Marital Status	Never married	9	5(55.6%)	4(44.4%)	0(0.0)	
	Married	125	65(52.0%)	43(34.4%)	17(13.6%)	
	Cohabiting	13	11(84.6%)	2(15.4%)	0(0.0)	
	Divorced/separated	25	6(24%)	15(60%)	4(16%)	
	Widowed	29	11(37.9%)	14(48.3%)	4(13.8%)	.031*
Residence	Rural	99	29(29.3%)	55(55.6%)	15(15.2%)	
	Urban	104	68(65.4%)	22(21.2%)	14(13.5%)	.000*
Education Level	No formal education	45	16(35.6%)	20(44.4%)	9(20.0%)	
	Primary	116	56(48.3%)	52(44.8%)	8(6.9%)	
	Secondary1-4	20	13(65%)	3(15.0%)	4(20.0%)	
	Post primary/Secon	13	9(69.2%)	2(15.4)	2(15.4%)	.011*
Religion	Christian	43	31(72.1%)	8(18.6%)	4(9.3%)	
	Muslim	158	64(40.5%)	71(44.9%)	23(14.6%)	.000*

†P-value from χ^2 test for differences in proportions, * Indicates statistical significance at 5% level

Table 6: Clinical and reproductive factors associated with fertility intentions among PLWHA

Variable	Category	N	No. of children intended in life			p- value†
			0-3	4-7	8-10	
Clinical factors			n(%)	n(%)	n(%)	
Perceived health status	Excellent	33	22(66.7)	6(18.2)	5(15.2)	
	Good	123	59(48.0)	48(39.0)	16(13.0)	
	Fair	44	13(29.5)	25(56.8)	6(13.6)	
	Bad	5	3(60)	0(0.0)	2(40.0)	.008*
Antiretroviral treatment	On treatment	133	47(35.3)	57(42.9)	29(21.8)	
	Not on treatment	63	43(68.2)	20(31.7)	0(0.0)	.000*
CD4 Levels	Less than 200	30	13(43.3)	15(50.0)	2(6.7)	
	More than 200	172	85(49.4)	60(34.9)	27(15.7)	.200

†P-value from χ^2 test for differences in proportions, * Indicates statistical significance at 5% level

Table 7: Clinical and reproductive factors associated with fertility intentions among PLWHA in Coast region

Variable	Category	N	No. of children intended in life			p- value†
			0-3	4-7	8-10	
Clinical factors			n (%)	n (%)	n (%)	
Reproductive history						
Has own living children	Yes	178	84(47.2)	67(37.6)	27(15.2)	
	No	18	12(66.7)	6(33.3)	0(0.0)	.040*
Has children with current partner	Yes	69	48(69.6)	12(17.4)	9(13.0)	
	No	78	28(35.9)	40(51.3)	10(12.8)	.000*
No. of living children	0-2	220	144(65.8)	72(32.4)	4(1.8)	
	3-5	75	26(34.7)	44(58.7)	5(6.7)	
	6-8	19	0(.0)	10(52.6)	9(47.4)	.000*
Partner wants children	Yes	73	44(60.0)	17(23.3)	12(16.4)	
	No	47	25(53.2)	17(36.2)	5(10.6)	.571

†P-value from χ^2 test for differences in proportions, * Indicates statistical significance at 5% level

Table 7b: Logistic regression analysis of selected predictor variables associated with fertility intentions among PLWHA in Coast region

Variable	Category	Crude OR (95%CI)	Adjusted OR (95%CI) †	p- value
Age				
	15-24	1	1	
	25-34	3.06(1.01-9.24)	6.91(2.58-30.28)	0.010*
	35-44	1.04(0.36-2.84)	1.48(0.34-6.35)	0.600
	45-54	1.30(0.42-4.03)	2.00(0.43-9.26)	0.376
Marital Status				
	Widowed	1	1	
	Single	0.23(0.07-0.77)	0.74(0.10-0.57)	0.012*
	Married	0.40(0.75-2.14)	1.04(0.09-11.02)	0.978
	Cohabiting	0.22(0.05-0.89)	0.66(0.01-0.65)	0.020*
	Divorced/Se parated	0.80(0.18-3.57)	0.12(0.01-1.31)	0.083
Residen				
	Rural	1	1	
	Urban	1.59(0.82-3.08)	0.66(0.24-1.84)	0.428
Education Level				
	No educ	1	1	
	Primary	1.34(0.59-3.06)	1.69(0.57-5.06)	0.340
	Secondary	0.32(0.10-1.10)	0.09(0.01-0.63)	0.015*
	Post prim/sec	1.600(0.26-9.88)	2.29(0.23-22.35)	0.472
Perceive Health stat				
	Bad	1	1	
	Fair	1.06(0.255-4.04)	4.43(0.32-7.41)	0.179
	Good	3.48(1.23-9.85)	7.38(2.12-48.53)	0.039*
	Excellent	1.80(0.77-4.22)	1.07(0.22-5.10)	0.934
On ART				
	No	1	1	
	Yes	1.02(0.58-1.78)	1.52(0.55-4.21)	0.417
Has own living children				
	No	1	1	
	Yes	0.86(0.41-1.81)	2.55(0.38-17.11)	0.334
No. of living children				
	0-2	1	1	
	2-5	0.42(0.20-0.85)	0.39 (0.21-0.72)	0.003*
	6-8	0.35(0.21-0.83)	0.34(0.23-0.88)	0.001*
Partner want children				
	No	1	1	
	Yes	0.52(0.14-2.01)	1.42 (0.24-8.44)	0.699

† Adjusted OR - Odd ratios adjusted for other variables in the table * Indicates statistical significance at 5% level

4.5 Prevalence of Family Planning methods used by PLWHA

In this study, modern and traditional methods were investigated. Lactation amenorrhea and Calendar method were not reported and are not included in the analysis. Results of this study revealed that 168(60.2%) of the respondents had ever used family planning methods and that 150(64.9%) reported to have used before their HIV diagnosis. Of those reporting use, 141(65.9%) % were using family planning methods during the period of data collection (current users). Out of those who reported currently not using family planning methods, 77(51.7%) of them reported that they will use in the future (Table 8). Table 9 depicts the distribution of family planning methods used by the study population. Findings indicate a tendency to switch from hormonal methods before HIV diagnosis to barrier methods after the diagnosis. Injectables were most prevalent (78.8%) before the HIV diagnosis while condoms were the most currently used (after HIV diagnosis) 83.8% and preferred method for future use is condoms 64.0%. Overall, about (143) 83.8% of current FP users were on condoms and 40 (30.3 %) on Injectables (Table 9). This study shows that the majority have shifted to condoms as the current user are many compared to respondent before HIV diagnosis.

Table 8: Utilization status of Family Planning services among PLWHA in Coast Region

History of Use of FP	Status	Frequency	Percent
Ever used	Yes	168	60.2
	No	111	39.8
Used before HIV diagnosis	Yes	150	64.9
	No	58	25.1
Using now	Yes	144	65.9
	No	55	27.7
Will use in future	Yes	77	51.7
	No	72	48.3

Table 9: Distribution of FP methods used by PLWH

Method	Before testing		Currently		Future preferences	
	n	%	n	%	n	%
Condoms	82	66.7	143	83.8	16	64
Pills	41	35.3	5	3.7	5	20.8
Implants	4	3.5	6	4.6	6	8.8
IUDs	2	1.7	2	1.5	6	8.8
Injectables	85	78.8	40	30.3	24	33.3
Sterilization	4	4.3	4	4.3	4	4.3
Periodic abstinence	58	50.0	33	25.0	11	45.8
Withdrawal	2	1.7	2	1.3	4	5.8
Foam jelly	2	2.9	2	2.9	2	2.9

4.6 Reported pregnancies

A good number 35.0% of respondents reported to have ever been pregnant since HIV diagnosis. At the time of data collection, there were 12(8.6%) reported current pregnancies. The study shows 102(91.9%) pregnancies that were unintentional but were wanted and not aborted, but 9(8.1%) were unwanted and was mistimed.

4.7 Factors affecting choice and use of different FP methods among PLWH

4.7.1 Selected socio-demographic characteristics

Findings of this study revealed that respondents from both groups (15-24, 25-34, 35-44, years had 20(74.1%), 37(57.8%), 57(72.2%) and older (45-54years) 26(60.5%) age groups were more likely to use family planning methods. Participants who were married 102 (76.9%) and those who are cohabiting (66.7%) those who never married (61.1%) reported more use of contraceptives as compared to those who were widowed, divorced/separated ($p=0.000$) (Table 10). About 83(74.1%) of respondents living in urban areas reported using FP as compared to only 56 (56%) of those living in rural areas ($p=0.022$).

About 88(73.9%) of respondents who perceive their health status as good used family planning methods, this is the highest proportion of use than in other groups and the difference was statistically significant ($p=0.002$). A total of 114 (69.1%) respondents on antiretroviral treatment reported contraceptive use compared to 22(51.2%) for those not on treatment ($p=0.005$). CD4 levels were not related to the use of family planning methods (Table 11).

Respondents who have children with current partner reported a higher proportion 70(89.7%) of use of family planning methods than those without children with partner ($p=0.001$).As well the respondents who reported partner desires children has a higher proportion 55(87.3%) than their fellow counterparts $p=0.027$.

Regression analysis results

Results show that, respondents who were married were about 0.34 times more likely to use family planning methods compared to widowed individuals (COR, 0.34, 95%CI: 0.15-0.76). After adjusting for other factors, this value increased to 0.36 times (AOR=0.36, 95%CI: 0.13-0.95, $p=0.048$) (Table 11b). Likewise, individuals using ART were 1.93 times more likely to use family planning methods than their counterparts who not using (COR, 1.93, 95%CI: 1.23-9.85). After adjusting for other factors, this value increased to 8.49 (AOR: 8.49, 95%CI: 2.36-52.98, $p=0.022$).

4.7.2 Clinical factors

About 73.9% of respondents who perceive their health status as good used family planning methods, this is the highest proportion of use than in other groups $p=0.001$ but after controlling for confounders the statistical significant was not achieved . A total of 114 (69.1%) respondents on antiretroviral treatment reported contraceptive use compared to 22(51.2%) for those not on treatment ($p=0.005$). CD4 levels were not related to the use of family planning methods (Table 11).

4.7.3 Reproductive History

Respondents who have children with current partner reported a higher proportion (89.7%) of use of family planning methods than those without children with partner (p=0.001) (Table 11).

Regression analysis results

Logistic regression analysis revealed that respondents who have their own children were about 1.38 times more likely to use family planning methods than those who do not have their own children (COR, 1.38, 95%CI: 0.08-2.56). After controlling for other factors, this value decreased to 1.08 (AOR: 1.08, 95%CI: 0.32-3.63, thus statistical significant was not achieved p=0.904). Again, being married was a significant predictor for family planning use in this population AOR: 0.36, 95%CI: 0.13-0.95, p= 0.048. Also ART use was a significant predictor of FP use (AOR: 8.49, 95%CI: 2.36-52.98, p=0.022) (Table 11b).

4.8 Reasons for non use of family planning methods

Regarding the non use of contraceptives, the main reasons cited for non use of family planning methods in this study population were Partner opposition 95(34.4%) Fear of interaction with ARVs 18(26.5%) and the belief that they can't prevent new HIV infections 24 (21.5%) Not in relation 2.0%, Feels to be too old to conceive 2.0% and the fear of side effects and infertility (3.2 %), (Table 12).

4.9 Reproductive health counseling for PLWH

In this study, 60.6% of participants reported to have been counseled on reproduction and sexuality rights and majority (47.5%) of them cited health workers as the major source of information, mainly VCT counselors and, 38.8% cited antenatal clinic, 36.6% ART counselors. However, the kind of information was markedly varied. Majority (73.7%) of respondents reported that they were advised they can have children like others., while the rest 64.9% reported to have been advised can use sexual intercourse with a condom to avoid new infections and infecting partner , and 30.7% were advised

not to have intercourse to avoid new infections and infecting partner. On the other hand, majority (64.4%) of respondents reported that they were not counseled on family planning from the above cited sources. The study also shows a significant variation among males 44(68.8%) and female 97(64.9%) who are currently using FP and those who are not using male 20(31.2%) and female 53(35.3%) $p=.001^*$

Table 10: Socio-demographic factors associated with use of family planning methods among PLWH in Coast region

Background Character	Category	N	Currently using FP			p-Value
			Yes n (%)	No n (%)	Don't %know	
Age	15-24	27	20(74.1)	4(14.8)	3(11.1)	.422
	25-34	64	37(57.8)	23(35.9)	4(6.3)	
	35-44	79	57(72.2)	16(20.3)	6(7.6)	
	45-54	43	26(60.5)	12(27.9)	5(11.6)	
Sex	Male	64	44(68.8)	9(14.1)	11(17.2)	.001*
	Female	150	97(64.7)	46(30.7)	7(4.7)	
Marital Status	Never married	18	11(61.1)	3(16.7)	4(22.2)	.000*
	Married	133	102(76.9)	23(17.3)	8(6.0)	
	Cohabiting	18	12(66.7)	4(22.2)	2(11.1)	
	Divorced/separate	27	11(40.7)	13(48.1)	3(11.1)	
	Widowed	15	3(20.9)	12(80.0)	0(0.0)	
Residence	Rural	100	56(56)	33(33.0)	11(11.0)	.022*
	Urban	112	83(74.1)	22(19.6)	7(6.3)	
Education Level	No formal education	42	20(47.6)	14(33.3)	8(19.0)	.036*
	Primary	118	81(68.6)	31(26.3)	6(5.1)	
	Secondary1-4	29	21(72.4)	6(20.7)	2(6.9)	
	Post primary/Seco	17	13(76.5)	2(11.7)	2(11.7)	
Religion	Christian	51	33(64.7)	10(19.6)	8(15.7)	.115
	Muslim	152	101(66.4)	43(28.3)	8(5.3)	
	Others	3				

*p- value from χ^2 test for differences in proportions * Indicates statistical significance at 5% level

Table 11: Clinical and reproductive factors associated with use of family planning methods among PLWHA

Background Characteristic	Category	N	Currently using FP		Don't %know	p-Value
			Yes n (%)	No n (%)		
Clinical factors						
Perceived health status	Excellent	30	22(68.8)	4(13.3)	4(13.3)	
	Good	108	88(73.9)	17(17.7)	3(2.8)	.001*
	Fair	52	31(50)	14(26.9)	7(13.5)	
	Bad	1	1			
Antiretroviral treatment	On treatment	148	114(69.1)	27(18.2)	7(4.7)	
	Not on treatment	37	22(51.2)	8(21.6)	7(18.9)	.005*
CD4 Levels	Less than 200	34	23(62.2)	8(23.5)	3(8.8)	
	More than 200	154	118(68.2)	24(15.6)	12(7.8)	.393
Reproductive history						
Has own living children	Yes	151	121(74.7)	22(14.6)	8(5.3)	.000*
	No	25	9(36.0)	10(40.0)	6(24.0)	
Has children with current partner	Yes	78	70(89.7)	5(6.4)	3(3.8)	.001*
	No	59	41(69.5)	9(15.3)	9(15.3)	
Partner desires children	Yes	63	55(87.3)	5(7.9)	3(4.8)	
	No	54	40(74.1)	8(14.8)	6(11.1)	.027*

*p- value from χ^2 test for differences in proportions * Indicates statistical significance at 5% level

Table 11b: Logistic regression analysis of selected predictor variables associated with the use of family planning methods among PLWHA in Coast region

Charac teristic	Category	Crude OR (95%CI)	Adjusted OR (95%CI) †	p value
Marital Status				
	Never married	1	1	
	Married	0.34(0.15-0.76)	0.36(0.13-0.95)	0.048*
	Cohabiting	0.50(0.15-1.63)	0.55(0.12-2.34)	0.415
	Divorced/Separated	0.33(0.11-0.92)	0.31(0.09-1.13)	0.08
	Widowed	0.66(0.24-1.77)	0.59(0.78-1.99)	0.400
Sex	M	1	1	
	F	1.14(0.52-1.49)	0.98(0.53-1.13)	0.958
Residence				
	Rural	1	1	
	Urban	1.04(0.63-1.69)	1.06(0.57-1.96)	0.857
Level of education				
	No formal educ	1	1	
	Primary	0.78(0.42-1.44)	0.88(0.43-1.82)	0.739
	Secondary	1.17(0.51-1.68)	1.12(0.41-3.03)	0.827
	Post prim/sec	0.77(0.04-12.81)	0.75(0.04-15.19)	0.853
ART use				
	No	1	1	
	Yes	1.93(1.23-9.85)	8.49(2.36-52.98)	0.022*
Has own living children				
	No	1	1	
	Yes	1.38(0.75-2.56)	1.08(0.32-3.63)	0.904
Partner wants children				
	No	1	1	
	Yes	1.56(0.59-4.10)	2.40(0.64-9.06)	0.195
Has living children with current partner				
	No	1	1	
	Yes	1.52(0.79-2.95)	1.75(0.72-4.28)	0.218

†Adjusted OR - Odd ratios adjusted for other variables in the table. * Indicates statistical significance at 5% level

Table 12: Reported reasons for non use of family planning methods among PLWHA

Reason	N	(%)
Partner opposition	95	34.4
Availability is difficulty	15	12.5
Fear of interaction with ARVs	18	26.5
Cannot prevent new HIV infections	24	21.3
Lack of education about FP methods	2	1.5
Fear of side effects and rumor that modern methods cause infertility	3	2.8
Not being in a relation	6	2.0
Feelings of advanced age hence can't conceive again	6	2.0
Needs to have a child as she has no own child	2	2.0

CHAPTER FIVE

5.0 DISCUSSION

Studies have reported that many HIV-infected women and men are of reproductive age and continue to desire and bear children despite their knowledge of HIV status. It has also been widely postulated that the advent of antiretroviral treatment has increased survival of PLWHA and improved quality of life and as such many more are now considering child bearing. From that standpoint, this study was undertaken to investigate the prevalence and reproductive health needs (fertility desire and intention, family planning choices and use) among people living with HIV/AIDS in Coast region of Tanzania.

5.1 Prevalence of fertility desires and intentions of PLWHA

Previous studies indicate that a relatively significant number of HIV-infected people desire to have children in the future, although at different proportions. The findings of this study revealed that about 35% of participants desired to bear children in the future. This fertility desire rate was lower compared to that reported by Mpangile G et al (2006) who gave an estimated value of 70%. The overall fertility desire rate and that of female obtained in this study is 38.9% that is lower than that of female in the general population in Tanzania which was 65.4% (NBS, 2005). However, the findings of this study are somewhat in line with those reported by Mpendu (2008) in Tanzania (47.2%) and Tamene & Fantahun (2006) in Ethiopia (40%). Considering the Tanzanian studies, it appears there has been a gradual increase in fertility desire among HIV-infected individuals over the years. These gradual increase in fertility desires could partly be attributed to improved health messages from health workers and/or community members that frequently encourage childbearing among PLWHA in which case is the opposite in the previous years. (Sarna, 2006; Oliveira & França, 2003). Regarding fertility intentions, participants in this study wanted to have a mean of 3 children in their life time with majority of them wanting to have 0-3 children. This fertility intention rate is slightly lower than that of the general population which is 5.7 (NBS, 2005). Low fertility desire observed among PLWHA can probably explain the correspondingly

lower intention. Low intention can also be attributed to observations that there has been a gradual decline in family size preference over time in the general population, where the mean ideal number of children has declined by more than one child since the 1991-92 TDHS (NBS 2005). However, the same DHS data further show that only 8 percent of respondents think two or fewer children is ideal. Low and declining fertility intentions reported in the DHS may be contributed for by populations which differentially want fewer children, such as PLWHA.

5.2 Factors associated with fertility desire among PLWHA

5.2.1 Selected Sociodemographic characteristics

The findings of this study indicate that individuals, who never married, married and divorced or separated desired to have children than those who were widowed. Individuals who never married are most likely to be young and therefore have no or less children and are thus more likely to desire for more children. This finding conforms to findings by Oladapo et al., (2005) who reported that individuals who were young had an increased fertility desire. Higher fertility desires among married individuals can be explained by the fact that married individuals exert pressure from different community members, most importantly, the partner. Individuals whose partners wanted children reported higher fertility desires and this is in agreement with findings in other studies (Oladapo et al., 2005). Fulfilling marriage prospects for couples may also explain this as bearing children tend to cement the relationship (Mpendu, 2008). On the other hand, divorced or separated individuals may have an increased fertility desire as a result of having no sexual partner at the material time. Earlier studies indicated that fertility and birth rates among women with HIV infection are lower than that of the general population and this has been shown to be due to pre-existing sub-fertility (Schmidt L 2005, Thackway et al., 1997; Gray et al., 1998; Ross et al., 1999). Thus women who are divorced or separated may have infertility problems even before HIV infection and may consequently have higher fertility desires so as to counteract social expectations.

Previous studies have indicated a higher fertility desire in HIV infected individuals who live in rural areas compared to their urban counterparts. Social pressures to have children are more pronounced in rural than in urban areas. In rural areas, cultural values are attached on fertility and a significant social status is assigned to people with children (Dyer et al; 2002; NBS 2005). Similar trend was observed in this study although significant level was not achieved after controlling for confounders. The implication of this observation coupled with reported lower condom use in rural areas could contribute to the increasing rates of new HIV infections in rural areas (Mmbaga et al., 2008; NACP 2008).

5.2.2 Clinical factors

Previous studies have shown that better self ratings of overall health status and physical functioning were associated with increased fertility desires (Oladapo et al., 2005). In this study, participants reporting fair to excellent health status were more likely to desire children as compared to those reporting poor health status. Regarding antiretroviral treatment, this study has shown that ART status (initiation or not) did not have any influence on fertility desires, since respondents 72(70.0%) on ARVs treatment and 30(73.1%) not on treatment, the fertility desire was higher on both regardless of their ARV status. This finding contradicts the general outlook that ART increases childbearing desires among PLWHA which has also been reported by other workers elsewhere (Mpendu 2008; Oladapo et al., 2005; Homsy et al., 2009). This difference may probably be explained by the fact that these earlier studies involved PLWHA who were on ART alone and there was no comparison from those not on ART.

5.2.3 Reproductive History

It has been observed in other studies that having own children was an important predictor of fertility desires (Sunderam et al, 2008; Mpendu 2008; Mpangile et al, 2006 ; Oladapo et al., 2005). This is true also in this study where a tendency to desire children for those participants who did not have their own children as compared to those with no children was observed. Individuals with children ≥ 2 were significantly less

likely to desire children as compared to those with 0-2 children in this study. This has also been shown elsewhere in which decreasing number of children was independently associated with fertility desire (Myer et al., 2007). Decreased desire for children as the number of children increases could be explained by the fact that 2 or more children could be the desired family size in this population.

5.3 Factors associated with fertility intentions among PLWHA

On average, participants in this study wanted to have 3 children in their life time with majority of them wanting to have 0-3 children. This fertility intention rate is slightly lower than that of the general population which is 5.7 (NBS, 2005). The 2004-05 DHS data further show that, three-fourths of all women surveyed consider four or more children to be ideal and that only 8 percent of women think two or fewer children is ideal (NBS 2005). This difference could be due to the possibility that PLWHA who already have children would not like to risk to give birth of an infected child or out of concern of the welfare of the child in case of orphanage. These findings fairly compare with those by Oladapo et al., (2005) who showed that, respectively, 71.5% and 93.8% of men and women who desired children intended to have ≥ 2 children in the near future.

5.3.1 Selected Sociodemographic characteristics

Fertility intention was found to be determined by level of education, age, having any children and number of living children. Results have shown that respondents in the lower age groups want to have fewer (0-3) children than in higher groups. Likewise, it has been shown from preceding sections that it is the young age groups that have higher fertility desire. As in the younger population, individuals with primary, secondary education or more were found to want to have significantly fewer children than in other group. These observations conform to survey results of DHS (NBS 2005). The demand for fewer children means demands for family planning services which were also higher in younger and educated populations. Family planning methods will either be required for delaying (spacing) or limiting child bearing as it appears that young and educated HIV infected individuals would like to stop child birth once they got a few children or

none at all. In this study it was observed that age, education level, having own children and number of living children were independent predictors of fertility intention in this population. Respondents who were divorced or separated were more likely to report intention of having more than 3 children as compared to those who were widowed. Divorced or separated individuals may not have children at all indicating that the desired family size may not have been achieved. In addition, they would have children already with past partners, so they may need extra children so as to strengthen relationships with new partners. It was also found that intention to have more than 3 children decreased as education level increased in this population. This could result from the fact that educated individuals have more exposure to family life and family planning education where the need to control family size is emphasized. This can as well be attributed to the fact that there has been a gradual decline in family size preference over time in the general population which affects both educated and uneducated individuals. The mean ideal number of children has declined by more than one child since the 1991-92 TDHS (NBS 2005).

5.3.2 Clinical factors

In this study, selected health system factors (perceived health status, use of ARVs and CD4 count) were independent predictors of fertility intentions. However, poorer recent CD4 counts and emotional wellbeing were shown to be related to intention to have ≥ 3 versus 1-2 children elsewhere (Oladapo et al.2005). The difference between these findings could be explained by methodological differences. The present study determined fertility intention in terms of ideal number of children in life time while the referent study did so by estimating the extra number of children participants desired to have in the future.

5.3.3 Reproductive History

Although about (38.8%) of the respondents reporting not having own children had higher fertility intention, they actually intended to have fewer (0-3) children in their life time compared to those with own children. These findings contradict findings from other studies where having no children was reported to be an independent predictor for intention to have greater or equal to 3 against 1-2.

In this study, having one's own children was an independent predictor for intention to have fewer children. Number of children intended by participants also decreased for those having many children. Thus, the overall intention was to have fewer children. The need for fewer children could be explained by the social construct of child bearing where individuals would like to prove themselves functional in the eyes of others. It may also indicate a state of frustration and dilemma between social demands of childbearing and the reality of possible vertical, heterosexual and or re-infections in the midst of poor health.

5.4 Prevalence of family planning methods used by PLWHA

This study found that 144 (65.9%) of the respondents were on FP methods at the period of data collection. Prevalence of ever use of FP in this population was 168(60.2%) indicating an increase or continuation of 5.7%. This study finding is not in line with that observed in the general population where more than one-third (38%) of family planning users in Tanzania discontinue using the method within 12 months of starting its use (NBS, 2011).

The fact that modern methods were reported by most respondents may show that a good number of PLWHA currently using FP are protected from unintended pregnancies. This is because modern methods such as sterilization, pill, condoms, IUDs, injectables and implants, are effective and reliable. While most modern methods (hormonal) offer continuous protection, others such as condoms and most traditional methods such as vaginal methods (foam/jelly), periodic abstinence, and withdrawal are coital-specific, requiring use during intercourse. Current use for coital-specific methods is a difficult concept since it may mean use at last intercourse, which could have been a long time before the interview or intention to use at next intercourse. Since condoms were currently the most prevalent FP method used by PLWHA, we may not expect 100% protection from unintended pregnancies. The 2003-04 DHS established that 20% in the general population were using FP methods. However, this study has revealed a slightly higher proportion of use of FP methods (65.9%) and this can be explained by the time lapse between the 2002-04 calendar period preceding DHS survey and the timing of the

present study. Public health promotion initiatives targeting reproductive health services including family planning have been substantially scaled up ever since. The most important reason for the observed difference could be due to differences in the population i.e. PLWHA and the general population. PLWHA have been shown to need contraceptive more than the general population for both prevention of heterosexual HIV transmission and pregnancies.

5.5 Demand for family planning

In Coast region, about 41.6% of the total demand for FP is met while 58.4% is not met (NBS, 2011). In this study, findings revealed 76.7% of total demand for FP is satisfied while the unmet demand was 23.3%. In this study the unmet FP demand is defined as any person/woman, aged 15-49 years currently married and not using FP methods to avoid pregnancies or getting partner pregnant. In this study, a significant number of respondents reported to have ever been pregnant since HIV diagnosis 107(35.0%), and 12(8.6%) pregnancies were reported. The fact that majority 102(91.9%) of these pregnancies were intended conforms to the observations made earlier else where that many of pregnancies of HIV infected individuals could be intentional (Santos et al., 2002). On the other hand, unintentional pregnancies observed in this study indicate that there is unmet need for family planning.

5.6 Factors affecting choice and use of different FP methods

5.6.1 Selected Sociodemographic characteristics

Sociodemographic characteristics that were shown to independently determine current use of family planning were marital status and residence. Respondents who were married 102 (76.9%) were more likely to use family planning methods compared to widowed 3(20.9%) individuals. This could be explained by the fact that individuals in a relation are more likely to have sexual intercourse and the possibility of becoming pregnant is therefore high hence the need for family planning. These individuals are also more likely to have children consequently exposed to FP methods and accessed them during maternal and child health clinic visits.

Depending on the respondent reported residential status a significant proportion of urban residents 83(74.1%) reported more FP use as compared to the respondents 56 (56.0%) in rural areas $p=0.022^*$. This finding is in agreement with findings by Mroz et al (1999) who showed that contraceptive use in rural areas was as less as 3.2%. Despite ongoing efforts to scale-up FP use in rural areas through outreach services such as the (CBD) Central Business District program under (TGPSH) Tanzanian German Program to Support Health which distribute contraceptives in rural areas including Coast region rural, the urban rural differential is still obvious. This study findings have revealed a tendency to switch between methods and from hormonal methods injectables reduced to 40(30.3%) from 85(78.8%) before HIV diagnosis to Condoms methods increased from 82(66.7%) to 143(83.8%) after the HIV diagnosis.

5.6.2 Clinical factors

In this study, antiretroviral treatment was associated with twice the likelihood of using contraceptives in the population. This observation disputes the general feeling that PLWHA may not use FP services because of concern that some contraceptives may interact with antiretroviral drugs, although about 18(26.5%) of individuals not using FP methods reported to be concerned about possible interaction between contraceptives and ARVs. Perceived health status was not proved to be a predictor of use of family planning methods. However, it has been suggested from studies elsewhere that there is a tendency to change family planning methods across the scale of perceived health status. Chanza et al., 2006. Showed that the use of non-condom FP methods increased in women who perceived their health to be fair/poor but decreased in those perceiving their health to be good/excellent 12 months after HIV diagnosis. In this study, respondents who perceived their health status as good 88(73.9%) used more family planning methods than others.

5.6.3 Reproductive History

Reproductive parameters showing independent association with FP use included having own living children and whether or not one has children with current partner. Having children with the current partner 69(83.1%) $p=0.001^*$ was a significant predictor for family planning use in this population. This finding gives no hand to those reported in Dar es Salaam where couples without children were struggling to get children so as to cement

their relationship (Mpendu 2008) and for self actualization. This is so because couples wanting children are unlikely to use contraception. In this study, one of reasons cited for partner demand for children is that of having no children with current partner 62(58.5%). Also, partner opposition for use of FP resulted 45(34.4%). This implies that partners have a major role to play in improving family planning services among PLWHA.

This study has also revealed a higher proportion of family planning prevalence among individuals who have own children 121(74.7%) than those who do not have 9(29.3%) $p=.000^*$. This could be that people with their own children are probably satisfied hence reduced desire as compared to those without their own children who would struggle to have one. Such individuals would then be less likely to use family planning.

Other factors which have been found to determine use of FP include fear of side effects and lack of knowledge about FP methods, availability difficult.

5.7 Study Limitations

- Cross-section nature of the study limits concluding temporal relationship between independent factors identified and outcome variables.
- The study employed mainly quantitative methods thus may have missed qualitative information to explain why things are unfolding the way they have been observed.
- Data collected relied on reported information and this could be affected by desirability bias.
- This was mitigated by ensuring adherence to quality control and data handling procedures during data collection by PI (as seen and explained in section 3.9.1 above) its perfectness certified the data reliability and validity for this study and its potentials.

CHAPTER SIX

6.0 CONCLUSION

The current study has shown that the prevalence of fertility desire in this population was 35% and fertility intention was 3. These findings indicate that a substantial proportion of PLWHA continue to desire children despite of their HIV status. In the present study, fertility desires and intentions were mainly associated with age, marital status, and level of education, Residence, having children with the current partner, CD4 levels, and partner desire for children and, perceived health status.

There is a substantially higher rate of use of family planning in the study population compared to the general population. Having no or one Child and the importance of having own living child has association with the fertility desire and intentions. In addition to that desire and intention it has implication to the HIV transmission of the sexual partners as well as the new born. Condom which has duo advantage for PLWHA was the most preferred methods. This together with the reported pregnancies after HIV diagnosis are important indicators of success in achieving fertility needs while limiting new HIV infections. ART has been shown to be a significant predictor of use of family planning methods but not a predictor of fertility desire or intention. A number of pregnancies that were observed after HIV diagnosis of the respondents mean that the PLWHA desire and intend to have children. This is an important indicator of success in achieving fertility desire and intentions as entities of reproductive health needs among PLWHA while limiting new HIV infections Despite ongoing efforts to scale-up FP use in rural areas through outreach services such as the CBD program under TGPSH which distribute contraceptives in rural areas including Coast rural, the urban rural differential is still obvious in terms of coverage.

6.1 Recommendations

Since the study findings shows number of pregnancies reported after HIV diagnosis, reported fertility desires and intentions and the reported intentional pregnancies indicate that PLWHA continue to desire and bear children despite of their HIV status. This then calls for the need to increase attention on fertility needs along with medical care in this population particularly integrating reproductive health needs of PLWHA in their routine care and treatment services. The unmet need for FP in the current study is defined as a woman aged 15-49 years currently married and not using FP and from this study significant number reported not using FP currently. The reported need for fewer children indicate a higher demand for FP among PLWH and the RCH integration into care and treatment services are to be expanded. To address the unmet need for FP, outreach services will need to be scaled up to reach more people especially in rural areas where FP use is lower. This study has revealed that having children with current partners is an independent predictor of use of family planning and that a significant number of participants reported not to use family planning because of partner opposition, then the importance of partner involvement and ongoing efforts for male involvement in RCH and HIV related services should further be promoted.

Fertility and sexuality counseling information given to PLWHA by healthcare providers is not uniform basing on the respondent reported message advice on sexuality and reproductive health right. This calls for the need to harmonize guidelines on reproductive health needs (including childbearing) in PLWHA and disseminate to health workers. Again, healthcare providers are expected to deliver reproductive health messages to PLWHA so that future studies should involve healthcare workers who would provide useful information regarding the disparities reported in the present study. Likewise, more rigorous studies (such as cohorts) are needed to determine the association between reported desires, intentions and pregnancy incidences.

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APPENDICES**Appendix I: Informed Consent Form, English Version****MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS INFORMED
CONSENT FORM**Respondent's ID-NO

Greetings! My name is I am from MUHAS and working on this research project with the objective of investigating the determinants of reproductive health needs among individuals living with HIV/AIDS in Coast Region.

Purpose of the study

The purpose of this study was to collect information on reproductive health needs among individuals living with HIV/AIDS in Coast Region. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study. The reproductive health needs among individuals living with HIV/AIDS. Also, the magnitude of fertility desire and intentions, and the magnitude of use and choice of family planning methods among this population group are not well understood.

Procedures

To find answers to these questions, I invited respondents to take part in this study. As they agreed to participate in this study the following occurred:

They stayed with a trained interviewer and answer questions about their socio-demographic data, personal reproductive experiences, desires and intentions. In addition, they were requested to provide information about their general health and on the drugs they are taking. Also they were asked to give information about their history and practices on the use of family planning methods and what factors they thought are associated with use of family planning methods. The interviewes were recording their responses in the questionnaire. They were interviewed only once for approximately 30-45 minutes in a private confidential room.

Confidentiality

The information collected from them was kept confidential. Only people working in this research study were having access to the information. I compiled a report, which contained responses from individuals attending care and treatment services at the interviewed sites without any reference to individuals. I put no respondent name or other identifying information on the records of the information they provide.

Risks and discomfort

They were asked questions about factors that are associated with their health. They were explained that some questions may be very intimate and could potentially make them feel uncomfortable or unease. Also explained that they may refuse to answer any particular question and may stop the interview at anytime. However, the person who was interviewing them was a qualified counselor and was available to assist them as appropriate.

Rights to refuse or withdraw

Taking part in this study was completely voluntary. If they choose not to participate in the study or if they decide to stop participating in the study they were no any harm to them. They explained that they can stop participating in this study at any time, even if they have already given their consent. Refusal to participate or withdrawal from the study had not to affect their care, treatment or any benefits they are receiving from the CTC centre.

Benefits

They were explained that there were no direct benefit to them, however, the information they provide will help to increase our understanding of their reproductive health needs and associated factors of fertility desires, intentions and choice and use of family planning methods among individuals living with HIV/AIDS. Information obtained may be useful in strengthening provision of reproductive services and may also assist in preparing effective interventions/programs of this population group. Individual benefit may include reproductive counseling for individuals who will be found with unmet reproductive needs and appropriate notification of concerned staff at the clinic.

Who to contact

If you have any questions about this study you may ask those now or later. In case you wish to find out more or ask any question later you may contact any of the following;

1. **Innocent Michael Massawe**, Muhimbili University of Health and Allied Sciences (MUHAS), P.O. Box 65001, Dar es Salaam (Tel. no. 0754643816).
2. **Dr. Mangi Ezekiel J. who is the supervisor** of this study (Tel. 0713788811).

This proposal is to be reviewed and approved by the Muhimbili University of Health and Allied Sciences ethical committee, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find more about the MUHAS ethical committee, contact:

IRB Chair Prof. Mainen Moshi (a Chairman of Senate Research and Publications Committee).

Muhimbili University of Health and Allied Sciences.

P.O.Box 65001, Tel: 22 2140331 Dar es Salaam, Tanzania

Certification of consent

I have been invited to take part in the study on determinants of reproductive health needs among people living with HIV/AIDS in Coast region. I have read the foregoing information or it has been read to me and have understood. My questions have been answered to my satisfaction. I agree to participate in this study.

Signature (or thumbprint) of participant _____

Signature of witness (if participant cannot read) _____

Signature of research assistant _____

Date consent signed _____

Appendix II: Informed Consent Form, Swahili Version**CHUO CHA SAYANSI ZA AFYA MUHIMBILI KURUGENZI YA UTAFITI NA MACHAPISHO****FOMU YA RIDHAA**

Nambari ya Mshiriki

Habari za leo! Jina langu ni Natoka Chuo Kikuu cha Sayansi za Afya Muhimbili na nafanya utafiti huu kwa lengo la kutafiti visababishi vya mahitaji ya afya ya uzazi kwa watu wanaoishi na VVU/UKIMWI mkoani Pwani.

Lengo la Utafiti

Lengo la Utafiti huu ni kukusanya taarifa kuhusu visababishi vya mahitaji ya afya ya uzazi kwa watu wanaoishi na VVU/UKIMWI mkoani Pwani. Unaombwa kushiriki kwenye utafiti huu kwa sababu tunaamini una maarifa na uzoefu ambao ni muhimu katika utafiti huu. Haijulikana sawasawa ni mambo gani hasa yanachochea au kupunguza mahitaji ya afya ya uzazi kwa watu wanaoishi na VVU/UKIMWI. Pia haijulikana ni kwa kiwango gani watu wanaoishi na VVU/UKIMWI wana uhitaji wa kupata watoto na idadi ya watoto ambao wangependelea, na kwa kiwango gani wanachagua na kutumia njia mbalimbali za uzazi wa mpango.

Mambo yatakayofanyika

Ili kupata majibu ya maswali haya, nakukaribisha kushiriki kwenye utafiti huu. Endapo utakubali kushiriki, utafanyiwa yafuatayo:

Utakaa na mhojaji aliyefuzu na utajibu maswali kuhusu taarifa zako binafsi, uzoefu wako kuhusu afya ya uzazi, nia ya kupata watoto na idadi ya watoto unaotaka. Kadhalika utaombwa utoe taarifa kuhusu afya yako kwa ujumla. Pia utaombwa kutoa taarifa kuhusu historia ya matumizi ya njia za uzazi wa mpango na mambo ambayo unadhani yanachangia utumiaji wa njia za uzazi wa mpango. Mhojaji atakuwa akinakili majibu yako ndani ya dodoso la utafiti. Utahojiwa mara moja tu kwa wastani wa dakika 30-45 ndani ya chumba chenye usiri.

Usiri

Taarifa zitakazochukuliwa toka kwako zitahifadhiwa kwa usiri. Ni wafanyakazi wanaohusika kwenye utafiti tu ndio watakaoweza kufikia taarifa zako. Tutaandika ripoti ambayo itakuwa na majibu ya watu mbalimbali wanaohudhuria na kupata huduma na matibabu katika kituo hiki pasipo kumtambulisha mtu mmojammoja. Hatutaandika jina lako wala taarifa zako binafsi za kukutambulisha kwenye kumbukumbu za taarifa utakazotoa.

Madhara na kujisikia vibaya

Utaulizwa maswali kuhusu mambo yanayohusiana na afya yako. Baadhi ya maswali utakayoulizwa yanaweza kukugusa sana na yanaweza kukufanya ujisikie vibaya kiasi. Unaweza kukataa kujibu swali lolote na kukatisha mahojiano wakati wowote. Hata hivyo, mtu atakayekuwa anakuhoji ni mnasihi aliyesomea na atakuwepo kukusaidia kadri itakavyohitajika.

Haki ya kukataa na kujitoa kwenye utafiti

Ushiriki katika utafiti huu ni wa hiari kabisa. Ukiamua kutokushiriki kwenye utafiti huu au ukiamua kukatisha mahojiano hutapata madhara yoyote. Unaweza kusitisha ushiriki wako kwenye utafiti huu wakati wowote hata kama utakuwa umeshatoa ridhaa yako. Kukaa kushiriki au kujitoa kwako kwenye utafiti huu haitaathiri huduma, matibabu au faida nyingine zozote unazopata katika kituo hiki.

Faida

Hakutakuwa na faida ya moja kwa moja kwako, hata hivyo, taarifa utakazotoa zitasaidia kuongeza uelewa wetu kuhusu mambo yanayochangia nia ya kupata watoto, idadi ya watoto na uchaguzi na matumizi ya njia za uzazi wa mpango kwa watu wanaoishi na VVU/UKIMWI. Taarifa zitakazopatikana zitasaidia kuimarisha utoaji wa huduma za afya ya uzazi na pia zinaweza kusaidia katika kuandaa afua bora zaidi katika kundi hili. Faida ya mtu mmojammoja yaweza kuwa ushauri nasaha kuhusu afya ya uzazi kwa wale watakaonekana kuwa na mahitaji na watoa huduma wanaohusika kwenye kituo hiki watafahamishwa kuhusu mahitaji haya.

Mawasiliano zaidi

Kama utakuwa na maswali yoyote kuhusu utafiti huu unaweza kuyauliza sasa au hata wakati mwingine. Ukitaka kuelewa zaidi au kuuliza maswali wakati mwingine, unaweza kuwauliza wafuatao:

1. **Innocent Michael Massawe**, ambaye ni Mtafit Mkuu wa utafiti huu, Chuo Kikuu cha Sayansi za Afya Muhimbili, S.L.P.65001, Dar es Salaam (Simu 0754643816 na 0715643816).
2. **Dr. Mangi Ezekiel J.** ambaye ni Msimamizi wa utafiti huu, Chuo Kikuu cha Sayansi za Afya Muhimbili, S.L.P.65001, Dar es Salaam (Simu 0713788811).

Andiko la utafiti huu litahakikiwa na kuidhinishwa na Kamati ya Maadili ya Utafiti ya Chuo Kikuu cha Sayansi za Afya Muhimbili, ambayo ni kamati inayohakikisha kuwa washiriki wa utafiti wanalindwa wasipate madhara yoyote. Ukitaka kujua zaidi kuhusu Kamati ya Maadili ya Utafiti ya Chuo Kikuu cha Sayansi za Afya Muhimbili, unaweza kuwasiliana na:

Mwenyekiti Kamati ya maadili , utafiti na Machapisho : Prof. Mainen Moshi

Kamati ya Maadili ya Utafiti ya Chuo Kikuu cha Sayansi za Afya Muhimbili

P.O.Box 65001, Simu: 22 2140331

Uthibitisho wa Ridhaa ya Kushiriki utafiti

Nimekaribishwa kushiriki kwenye utafiti unaohusu mambo yanayochangia mahitaji ya afya ya uzazi kwa watu wanaoishi na VVU/UKIMWI mkoani Pwani. Nimesoma au nimesomewa mambo yote yaliyomo kwenye fomu hii na nimeelewa. Maswali yangu yamejibiwa na nimeridhika. Nakubali kushiriki kwenye utafiti huu.

Sahihi (au dole gumba) ya mshiriki _____

Sahihi ya shahidi (kama mshiriki hawezi kuandika/kusoma) _____

Sahihi ya Mtafiti Msaidizi _____

Tarehe ya kusaini fomu ya Ridhaa ya Ushiriki _____

Appendix III: Questionnaire, English version
REPRODUCTIVE HEALTH NEEDS AMONG PEOPLE LIVING WITH
HIV/AIDS IN COAST REGION, TANZANIA

Introduction				
1.1	Respondent ID			
1.2	Site name			

1.3	Interviewer initials			
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1.4	Date of interview	<input type="text"/>							
			Month		Year				
		Day							

Sociodemographic information			
2.1	How old are you now?	<input type="text"/>	<input type="text"/>
2.2	Sex of the respondent	Male	1
		Female	2
2.3	What is the highest level of formal education you have completed?	None	1
		Primary	2
		Secondary form 1-4	3
		Secondary form 5-6	5
		Post primary	6
		Duration of course ___yrs	
		Post-secondary form 1-4	7
		Duration of course ___yrs	
		Post-secondary form 5-6,	7

		Duration of course ___yrs If other , specify & state duration __ Total years of formal education __	
2.4	What is your current main occupation?	Peasant 1 Employee 2 Large/medium scale business 3 Petty business 4 None 5 Others 6 If other specify _____	
2.5	Residence of respondent	Rural 1 Urban 2	
2.6	What is your religion?	Christian 1 Muslim 2 Other 3 If other specify _____	
2.7	What is your current marital status?	Single (never married) 1 Married 2 Cohabiting or has a regular partner 3 Divorced/separated 4 Widowed 5	>3.1 } 2.10 then 2.12
2.8	If currently in a relationship (married/cohabiting/has regular partner), are you living with your sex partner?	Yes 1 No 0	

HIV/AIDS transmission knowledge in context of PLWHA

3.1	Can someone who looks healthy but who has the AIDS virus pass it on to other people?	Yes 1 No 0 Do not know 99
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2.9	If currently in a relationship (married/cohabiting/has regular partner), for how long have you been in this relationship?	_____ (<i>months/years</i>)
2.10	What was your age when you first married or cohabited?	_____ <i>years</i>
2.11	If currently in a relationship (married/cohabiting/has casual partner), did you start this relationship after you (or your sex partner) was diagnosed with HIV?	Yes 1 No 0 Do not know 99
2.12	If divorced, separated or widowed, how long has it been since then?	_____ (<i>months/years</i>)

3.2	Can anyone taking antiretroviral drugs transmit HIV to another person during sexual intercourse?	Yes 1 No 0 Do not know 99	
3.3	Can a person with AIDS virus get infected with another AIDS virus by having sex with another infected person?	Yes 1 No 0 Do not know 99	
3.4	Can a woman who has AIDS virus pass on the virus to her baby during: <i>1=Yes, 0=No, 99= Don't know</i>	Pregnancy? 1 0 99 Delivery? 1 0 99 Breastfeeding? 1 0 99	
3.5	Can a woman who has AIDS virus and on antiretroviral drugs pass on the virus to her baby	Yes 1 No 0 Do not know 99	
3.6	Are there any special medications that a doctor or a nurse can give to a woman infected with AIDS virus to reduce the risk of transmission to the baby?	Yes 1 No 0 Do not know 99	

HIV/AIDS history and general health			
4.1	When were you diagnosed of HIV/AIDS?	_____ (Years/Months/Weeks) ago.	
4.2	What were the reasons for you to have an HIV test? <i>Circle all that apply</i>	Routine antenatal clinic testing 1 Had HIV/AIDS related illness 2 Regular testing at VCT centre 3 Partner tested positive 4 Others, specify_____	

4.3	To whom have you disclosed your HIV status?	<p>Disclosed to partner 1</p> <p>Disclosed to family member 2</p> <p>Disclosed to friend/neighbor 3</p> <p>None 4</p>	
4.4	For your age, would you say, in general, your health is:	<p>Excellent 1</p> <p>Good 2</p> <p>Fair 3</p> <p>Poor 4</p> <p>Bad 5</p>	
4.5	Are you currently taking antiretroviral drugs?	<p>Yes 1</p> <p>No 0</p>	>4.10
4.6	If on antiretroviral drugs, for how long have you been taking these drugs?	_____ <i>months/weeks</i>).	
4.7	How would you say your condition is, in general, since you started treatment?	<p>Improved very much 1</p> <p>Improved very little 2</p> <p>Has not changed 3</p> <p>Worsening 4</p>	
4.8	Since you started taking the antiretroviral drugs, can you say there is an effect on your sexual activity?	<p>Yes 1</p> <p><i>If yes, explain</i> _____</p> <p>No 0</p>	
4.9	Do you have any complication due to the antiretroviral you are taking?	<p>Yes 1</p> <p><i>If yes, mention</i> _____</p> <p>No 0</p>	
4.10	Do you currently have any longstanding (chronic) illness apart from HIV infection?	<p>Yes 1</p> <p><i>If yes, mention</i> _____</p> <p>No 0</p>	
4.11	Have you ever experienced segregation or been denied any	<p>Yes 1</p> <p>No 0</p>	

	services (medical or social) because of your HIV serostatus?		
4.12	Have you lost your job because of your HIV serostatus?	Yes 1 No 0 I do not have a job/self employment 99	
4.13	Do you know your current CD4 count?	Yes 1 <i>Record_____ (confirm on respondent's card)</i> No 0 <i>Record_____ (check on respondent's card)</i> o CD4 results available 99	

Reproductive history, desires and intentions

5.1	Are you currently having sex with your partner or any other persons?	Yes 1 No 0	>5.3
5.2	If yes, the last time you had sex with this person, was a condom used?	Yes 1 No 0	
5.3	If you currently have a sex partner, has he/she tested for HIV? <i>Ask only those with partners, otherwise >5.5</i>	Yes 1 No 0 If No, why _____ Don't know 99	>5.5 >5.5
5.4	If your partner has tested, what is his/her HIV status?	Positive 1 Negative 0 Do not know 99	
5.5	Since you were diagnosed with HIV, have you or your partner become pregnant?	Yes/partner became pregnant 1 <i>Mention number of pregnancies</i> _____ No/partner never became pregnant 0 Not applicable (male without partner)99	>5.12 >5.12

5.6	If yes/partner became pregnant, were any of these pregnancies unintended?	Yes 1 <i>If yes, mention no.r of unintended pregnancies</i> No 0	
5.7	Of these unintended pregnancies, did you or your partner abort any?	Yes 1 <i>If yes mention number of abortions ____</i> No 0	
5.8	Are you or your partner currently pregnant?	Yes/Partner pregnant 1 No/Partner not pregnant 0 Not sure/Don't know 99	>5.12 >5.12
5.9	If Yes/Partner pregnant, how many months pregnant are you or your partner is?	_____ <i>months (best estimate)</i>	
5.10	When you or your partner became pregnant, did you want to become pregnant then, did you want to wait until later or did you not want to have any (more) children at all?	Then 1 Later 2 Not at all 3	
5.11	After the birth of the child, would you like to have another child or would you prefer not to have any more children at all?	Have another child 1 Undecided/don't know 2	>5.13 >5.13
5.12	Would you like to have a child or would you prefer not to have any more children at all in the future?	Have another child 1 No more since partner is sterilized 2 Undecided/don't know 3	
5.13	Do you have any children of your own who are alive and live with you?	Yes 1 No 0	>5.15
5.14	If yes, how many are sons and how	Number of sons ____, Number of	

	many are daughters?	daughters ____, Total____	
5.15	Do you have any sons or daughters who are alive but do not live with you?	<p style="text-align: right;">Yes 1</p> <p style="text-align: center;"><i>If yes, number of sons____, number of daughters____</i></p> <p style="text-align: right;">No 0</p>	
5.16	Did you have any sons and/or daughters of your own who were born alive but died?	<p style="text-align: right;">Yes 1</p> <p style="text-align: right;">No 0</p>	
5.17	If you could go back to the time you did not have children and could choose exactly the number of children to have in your whole life, how many would that be?	<p><i>Ask those who have children, otherwise</i></p> <p style="text-align: right;">None 1</p> <p style="text-align: right;">Ideal Number 2</p> <p>Mention number _____</p> <p style="text-align: right;">Others 3</p> <p>If Others, specify_____</p>	<p>>5.18</p> <p>>5.20</p> <p>>5.20</p> <p>>5.20</p>
5.18	If you could choose exactly the number of children to have in your whole life, how many would that be?	<p><i>Ask those who do not have children, otherwise</i></p> <p>1. None</p> <p>2. Number _____</p> <p>3. Others</p> <p><i>If others, specify_____</i></p>	>5.20
5.19	How many of these children would you like them to be boys, how many would you like to be girls and how many would the sex not matter?	<p style="text-align: right;">Boys _____</p> <p style="text-align: right;">Girls _____</p> <p style="text-align: right;">Either sex _____</p>	>5.23
5.20	If you have children, do you have any children with current partner?	<p><i>Ask those in a relationship only, otherwise</i></p> <p style="text-align: right;">Yes 1</p> <p><i>If yes, mention number of children with</i></p>	>5.21

		<i>current partner</i> _____ No 0	
5.21	If you have children, were any of these children born after you were diagnosed of HIV/AIDS?	Yes 1 <i>If yes, mention number of children born after diagnosis</i> _____ No 0	>5.23
5.22	If yes, did you receive any treatment for prevention of mother to child transmission?	Yes 1 No 0 Do not know 99	
5.23	Since HIV/AIDS diagnosis, have you discussed with your partner whether or not you should have children (or more) and the number of children (or more) you should have?	<i>Ask those in a relationship only, otherwise >5.26</i> Yes 1 No 0 <i>If no, why</i> _____	
5.24	Does your partner want children (or more) in the future?	Yes 1 <i>If yes, why</i> _____ No 0 <i>If no, why</i> _____ Don't know 99	
5.25	If yes, how many children does your partner want to have in the future?	Number desired _____	
5.26	Since you or your partner started antiretroviral treatment, has your desire to have children changed?	Yes 1 <i>Ask only those on ART, otherwise >5.28</i> <i>If yes, why</i> _____ No 0	
5.27	Since you or your partner started antiretroviral treatment, has your ideal number of children you had	Yes 1 <i>If yes, why</i> _____ No 0	

	wanted to have in your whole life changed?		
5.28	Following the diagnosis of HIV/AIDS, did any one advise you or discuss with you regarding your reproductive and sexuality rights?	Yes 1 No 0	>6.1
5.29	If yes, who is this or these persons who discussed or advised you? (<i>tick all that apply</i>) <i>Circle all that apply</i>	VCT counselors 1 Antenatal clinic (ANC) 2 ART counselors 3 Partner 4 Friend/relative/neighbor 5 Religious leaders 6 Others 7 <i>If others, specify</i> _____	
5.30	What specific information or advice did you receive from them? <i>Circle all that apply</i>	Can have children like others 1 Should not conceive because child will also be infected and will die 2 Can have sexual intercourse with a condom to avoid infecting partner 3 Should not have intercourse to avoid new infections and infecting partner 4 Don't have a child because if start falling sick you wont take care of him/her and may be orphaned 5 Others 6 <i>If others, specify</i> _____	

Information on Family Planning practices			
6.1	Did you or your partner receive information/counseling about delaying or avoiding pregnancy using contraceptive methods since you were diagnosed of HIV/AIDS?	<p>Yes/partner received 1</p> <p>No 0 >6.3</p> <p>Don't know 99 >6.3</p>	
6.2	<p>If yes/partner using, where from?</p> <p><i>Circle all that apply</i></p>	<p>VCT counselors 1</p> <p>Antenatal clinic (ANC) 2</p> <p>ART counselors 3</p> <p>Partner 4</p> <p>Friend/relative 5</p> <p>Others 6</p> <p><i>If others, specify _____</i></p>	
6.3	Have you ever used anything or tried in any way to delay or avoid getting or making your partner pregnant?	<p>Yes 1</p> <p>No 0 >6.16</p>	
6.4	Were you or your partner using any family planning method before you were diagnosed of HIV?	<p>Yes/partner was using 1</p> <p>No/ partner was not using 0 >6.8</p> <p>Don't if partner was using 99 >6.8</p>	
6.5	<p>If yes, which types of family planning methods?</p> <p><i>Circle all that apply</i></p>	<p>Condom 1</p> <p>Pills 2</p> <p>Injectables 3</p> <p>Implants 4</p> <p>Intrauterine device 5</p> <p>Sterilization 6</p> <p>Periodic abstinence 7</p> <p>Lactation amenorrhoea 8</p> <p>Withdrawal 9</p> <p>Foam/jelly 10</p> <p>Other methods 11</p> <p><i>If others, specify _____</i></p>	

6.6	Did you or your partner change the family planning method after you were diagnosed of HIV?	<p style="text-align: right;">Yes/partner changed 1</p> <p><i>Why changed?</i> _____</p> <p style="text-align: right;">No 0</p> <p style="text-align: right;">Don't know if partner changed 99</p>	
6.7	Have you or your partner changed the family planning method since you started taking antiretroviral drugs?	<p style="text-align: right;">Yes/partner changed 1</p> <p><i>Why changed?</i> _____</p> <p style="text-align: right;">No 0</p> <p style="text-align: right;">Don't know if partner changed 99</p>	
6.8	Are you or your partner currently using any method to avoid pregnancy or getting your partner pregnant?	<p style="text-align: right;">Yes/partner is using 1</p> <p style="text-align: right;">No/Partner not using 0</p> <p style="text-align: right;">Don't know if partner is using 99</p>	>6.16 >6.16
6.9	If yes, which types of family planning methods?	<p style="text-align: right;">Condom 1</p> <p style="text-align: right;">Pills 2</p> <p style="text-align: right;">Injectables 3</p> <p style="text-align: right;">Implants 4</p> <p style="text-align: right;">Intrauterine device 5</p> <p style="text-align: right;">Sterilization 6</p> <p style="text-align: right;">Periodic abstinence 7</p> <p style="text-align: right;">Lactation amenorrhoea 8</p> <p style="text-align: right;">Withdrawal 9</p> <p style="text-align: right;">Foam/jelly 10</p> <p style="text-align: right;">Other methods 11</p> <p><i>Circle all that apply and verify change, if any</i></p> <p><i>If others, specify</i> _____</p>	>6.10, 6.11, 6.19 >6.19 >6.19 >6.19
6.10	Does your partner know that you are currently using some family planning method?	<p style="text-align: right;">Yes 1</p> <p style="text-align: right;">No 0</p> <p style="text-align: right;">Not in a relation 99</p>	>6.12 >6.12
6.11	If yes, did you involve him/her in deciding the type of method to use?	<p style="text-align: right;">Yes 1</p> <p style="text-align: right;">No 0</p> <p><i>If no, why</i> _____</p>	

6.12	Where did you obtain supplies of the current method the last time?	Government/parastatal organization 1 Religious/voluntary center 2 Private hospital 3 Others 4 <i>If others, mention _____</i>	
6.13	Do you have regular access to the family method you are currently using?	Yes 1 No 0	
6.14	Are there any costs associated with the current method you are using?	Yes 1 No 0	>6.19
6.15	If yes, can you always afford to pay for these costs?	Yes, always 1 Yes, sometimes 2 No 0	>6.19 >6.19 >6.19
6.16	If you would like to use family planning methods, what reason(s) are stopping you from doing so? <i>Circle all that apply</i>	My sexual partner is against it 1 Availability of family planning methods is difficult 2 I am concern the family planning drugs may interact with ARVs 3 Family planning methods can not prevent HIV infection 4 Others 5 If others, specify_____	
6.17	If not using contraceptives, do you think you could use a contraceptive method in the future to delay or avoid pregnancy in the future?	Yes 1 No 0	>6.19

6.18	<p>If yes, which contraceptive method(s) would you prefer to use?</p> <p style="text-align: center;"><i>Circle all that apply</i></p>	<p style="text-align: right;">Condom 1</p> <p style="text-align: right;">Pills 2</p> <p style="text-align: right;">Injectables 3</p> <p style="text-align: right;">Implants 4</p> <p style="text-align: right;">Intrauterine device 5</p> <p style="text-align: right;">Sterilization 6</p> <p style="text-align: right;">Periodic abstinence 7</p> <p style="text-align: right;">Lactation amenorrhoea 8</p> <p style="text-align: right;">Withdrawal 9</p> <p style="text-align: right;">Foam/jelly 10</p> <p style="text-align: right;">Other methods 11</p> <p><i>If others, specify</i> _____</p>	
6.19	<p>In the next few weeks, if you or your partner discovers that you/she were pregnant, would that be a major problem, a minor problem or no problem for you?</p>	<p style="text-align: right;">Major problem 1</p> <p><i>Why major problem?</i> _____</p> <p style="text-align: right;">Minor problem 2</p> <p style="text-align: right;">No problem 3</p> <p style="text-align: center;">Explain why it isn't a problem or is a minor problem to you _____</p> <p style="text-align: center;">Not applicable (male single/female pregnant) 99</p>	<p style="text-align: center;">End</p> <p style="text-align: center;">End</p> <p style="text-align: center;">End</p>

Thank you for your time and participation

Appendix IV: Questionnaire, Swahili version

**REPRODUCTIVE HEALTH NEEDS AMONG PEOPLE LIVING WITH
HIV/AIDS IN COAST REGION, TANZANIA**

Utangulizi				
1.1	Nambari ya Mshiriki			

1.2	Vifupisho vya majina ya Mhojaji		
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1.3	Jina la Kituo	
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1.4	Tarehe ya Mahojiano	<table border="1"> <tr> <td></td> <td></td> </tr> </table>			<table border="1"> <tr> <td></td> <td></td> </tr> </table> Mwezi			<table border="1"> <tr> <td>2</td> <td>0</td> <td>1</td> <td>4</td> </tr> </table> Mwaka	2	0	1	4
2	0	1	4									
		Siku										

Taarifa binafsi					
2.1	Umri wako ni miaka mingapi?	<table border="1"> <tr> <td></td> <td></td> </tr> </table>			
2.2	Jinsia ya Mshiriki	Me 1 Ke 2			
2.3	Nini kiwango chako cha juu cha elimu?	Sijasoma 1 Nimeishia shule msingi 2 Nimeishia kidato 1-4 3 Nimeishia kidato 5-6 4 Chuo baada ya shule msingi 5 Muda wa masomo, miaka ____ Chuo baada ya kidato 1-4 6			

		<p>Muda wa masomo, miaka____</p> <p>Chuo baada ya kidato 5-6 7</p> <p>Muda wa masomo, miaka____</p> <p>Mengineyo 8</p> <p>Kama mengineyo, eleza na taja muda wa masomo</p> <p>_____</p> <p>Muda wote wa masomo, miaka</p> <p>_____</p>	
2.4	Unafanya kazi gani kwa sasa?	<p>Mkulima 1</p> <p>Nimeajiriwa 2</p> <p>Biashara kubwa/kati 3</p> <p>Biashara ndogondogo 4</p> <p>Sina kazi yoyote 5</p> <p>Nyingine 6</p> <p>Kama ni nyingine, eleza_____</p>	
2.5	Makazi yako yapo	<p>Kijijini 1</p> <p>Mjini 2</p>	
2.6	Dini yako ni	<p>Mkristu 1</p> <p>Muislamu 2</p> <p>Dini ya kimila 3</p> <p>Nyingine 4</p> <p>Kama ni nyingine, eleza_____</p>	
2.7	Nini hali yako ya kindoa/mahusiano kwa sasa?	<p>Sijawahi kuoja/kuolewa 1</p> <p>Nimeoa/nimeolewa 2</p> <p>Tumewekana unyumba/nina mpenzi 3</p> <p>Tumeachana/tumetengana 4</p>	>3.1

		Mjane/Mgani	5	>2.10 kisha 2.12
2.8	Endapo uko kwenye mahusiano (ndoa/unyumba/mpenzi wa kudumu), je unaishi na mwenzi wako kwa wakati huu?	Ndiyo	1	
		Hapana	0	
2.9	Endapo uko kwenye mahusiano (ndoa/unyumba/mpenzi wa kudumu), mmekuwa kwenye uhusiano huu kwa muda gani?	<i>Futa isiyohusika</i> _____ (<i>miezi/miaka</i>)		
2.10	Mara ya kwanza ulipooa/olewa au kuishi kiunyumba ulikuwa na umri gani?	Miaka _____		
2.11	Endapo uko kwenye mahusiano (ndoa/unyumba/mpenzi wa kudumu), je mlianza uhusiano huu baada ya kubainika kuwa una (au mwenzi wako) maambuki ya VVU?	Ndiyo	1	
		Hapana	0	
		Sijui	99	
2.12	Endapo mmeachana, kutengana, au ni mjane/mgani ni muda gani sasa tangu haya yatokee?	_____ (<i>miezi/miaka</i>)		

Uelewa wa maambukizi ya VVU kwa watu waishio na VVU/UKIMWI

3.1	Je mtu aishiye na virusi visababishavyo UKIMWI na anayeonekana na afya nje anaweza kuambukiza wengine VVU?	Ndiyo	1	
		Hapana	0	
		Sijui	99	
3.2	Je mtu anayetumia dawa za kupunguza makali ya VVU/UKIMWI anaweza	Ndiyo	1	
		Hapana	0	

	kumwambukiza mtu mwingine wakati wa kufanya ngono?	Sijui 99	
3.3	Je mtu aishiye na virusi visababishavyo UKIMWI anaweza kuambukizwa aina nyingine ya virusi kwa kufanya ngono na mtu wengine mwenye maambukizi?	Ndiyo 1 Hapana 0 Sijui 99	
3.4	Je mama aishiye na virusi visababishavyo UKIMWI anaweza kumwambukiza mtoto wake wakati wa: <i>1=Ndiyo, 0=Hapana, 99= Sijui</i>	Ujauzito? 1 0 99 Kujifungua? 1 0 99 Kunyonyesha? 1 0 99	
3.5	Je mama anayetumia dawa za kupunguza makali ya VVU/UKIMWI anaweza kumwambukiza mtoto wake?	Ndiyo 1 Hapana 0 Sijui 99	
3.6	Je kuna dawa maalum ambazo daktari au muuguzi anaweza kumpa mama aliye na VVU ili kupunguza uwezekano wa kumwambukiza mtoto?	Ndiyo 1 Hapana 0 Sijui 99	

Taarifa ya maambukizi ya VVU/UKIMWI na hali ya afya kwa ujumla		
4.1	Ni lini ulibainika kuwa na maambukizi ya VVU?	<i>Futa isivohusika</i> _____ (<i>miaka/miezi/wiki</i>) iliyopita
4.2	Ni sababu gani ilikusukuma kwenda kupima? <i>Zungushia yote atakayotaja mshiriki</i>	Kupimwa wakati wa ujauzito ambayo ni kawaida 1 Niliugua ugonjwa unaohusishwa na VVU/UKIMWI 2 Upimaji wa kawaida katika vituo vya ushauri nasaha 3

		Mwenzi wangu alibainika kuwa na maambukizi ya VVU 4 Nyingine 5 Kama nyingine, elezea_____	
4.3	Majibu yako umemshirikisha nani? <i>Zungushia yote atakayotaja mshiriki</i>	Mwenzi wangu 1 Mwanafamilia 2 Rafiki/jirani 3 Hakuna 4	
4.4	Kwa umri ulionao, unaweza ukasema afya yako kwa ujumla ni:	Nzuri sana 1 Nzuri 2 Wastani 3 Imezorota 4 Mbaya 5	
4.5	Je kwa sasa unatumia dawa za kupunguza makali ya VVU/UKIMWI?	Ndiyo 1 Hapana 0	>4.10
4.6	Endapo unatumia dawa za kupunguza makali, umekuwa ukizitumia kwa muda gani sasa?	<i>Futa isiyohusika</i> _____ (miezi/miaka/wiki)	
4.7	Tangu umeanza kutumia dawa za kupunguza makali, unaweza ukasemaje kuhusu afya yako kwa ujumla?	Imeimarika sana 1 Imeimarika kidogo 2 Hakuna mabadiliko 3 Inazorota 4	
4.8	Tangu umeanza kutumia dawa za kupunguza makali, je kuna mabadiliko yoyote katika uwezo na mahitaji yako ya kufanya ngono?	Ndiyo 1 Kama ndiyo, eleza_____ Hapana 2	
4.9	Umepata madhara yoyote kutokana na dawa za kupunguza makali unazotumia?	Ndiyo 1 Kama ndiyo, eleza_____ Hapana 0	

4.1 0	Je una magonjwa yoyote ya kusendeka mbali na maambukizi ya VVU?	Ndiyo 1 Hapana 0	
4.1 1	Je umewahi kutengwa au kubaguliwa au kunyimwa huduma za kijamii au kimatibabu kwa sababu ya kuwa na maambukizi ya VVU?	Ndiyo 1 Hapana 0	
4.1 2	Umepoteza kazi yako kwa sababu ya hali yako ya maambukizi ya VVU?	Ndiyo 1 Hapana 0 Sina kazi/nimejiajiri mwenyewe 99	
4.1 3	Unafahamu idadi ya CD4 zako?	Ndiyo 1 Taja _____ (<i>hakikisha kwenye kadi ya mshiriki</i>) Hapana 0 _____ (<i>angalia kwenye kadi ya mshiriki na jaza</i>) Majibu ya CD4 hayapo 99	

Taarifa kuhusu uzazi, matamaniao ya kupata watoto na idadi ya watoto			
5.1	Kwa sasa, je unafanya ngono na mwenzi wako au watu wengine?	Ndiyo 1 Hapana 0	>5.3
5.2	Kama ni ndiyo, mara ya mwisho ulipofanya naye ngono mlitumia kondom?	Ndiyo 1 Hapana 0	
5.3	Endapo uko kwenye mahusiano kwa sasa, je mwenzi wako amepima?	Waulizwe walio na wenzi tu, vinginevyo Ndiyo 1 Hapana 0 Sijui 99 Kama Hapana, eleza kwa nini _____	>5.5 >5.5 >5.5

5.4	Endapo mwenzi wako amepima, nini majibu yake?	Ana maambukizi 1 Hana maambukizi 0 Sijui 99	
5.5	Tangu ubainike kuwa na maambukizi, je wewe au mwenzi wako amewahi kushika ujauzito?	Ndiyo/Mwenzi amewahi 1 Kama ndiyo, taja idadi ya mimba _____ Hapana/Mwenzi hajawahi 0 Haihusiki (mwanaume asiye na mwenzi) 99	>5.12 >5.12
5.6	Kama ndiyo, kati ya mimba hizi kuna mimba ambazo hazikutarajiwa?	Ndiyo 1 Kama ndiyo, taja idadi ya mimba ambazo hazikutarajiwa ____ Hapana 0	
5.7	Katika mimba ambazo hazikutarajiwa, kuna zozote zilizotolewa	Ndiyo 1 Kama ndiyo, taja idadi ya mimba zilizotolewa ____ Hapana 0	
5.8	Je kwa sasa wewe au mwenzi wako ana ujauzito?	Ndiyo/Mwenzi ni mjamzito 1 Hapana/Mwenzi si mjamzito 0 Sina uhakika/Sijui 99	>5.12 >5.12
5.9	Endapo una/mwenzi ni mjamzito, mimba ina miezi mingapi?	Miezi_____ (<i>Kama mshiriki hana uhakika, msaidie kufanya makadirio yaliyo sahihi zaidi</i>)	
5.10	Ulipopata mimba, ulikuwa umepanga kupata wakati huo , au ulipanga kusubiri hadi baadaye , au hukutaka kabisa kupata au kuongeza watoto zaidi?	Nilitaka wakati huo 1 Nilitaka kusubiri hadi baadaye 2 Sikutaka kabisa 3	

5.11	Utakapojifungua, utataka au mwenzi wako atataka kupata mtoto mwingine au hutapenda kupata mtoto mwingine?	Nataka/anataka mtoto mwingine 1 Sijaamua/Sijui 2	>5.13 >5.13
5.12	Utapendelea kupata mtoto au hutapendelea kupata watoto zaidi siku za usoni?	Nataka mtoto mwingine 1 Sihitaji mtoto 2 Mimi/mwenzi anatumia njia ya uzazi ya kudumu 3 Sijaamua/Sijui 4	
5.13	Una watoto wako mwenyewe walio hai unaoishi nao?	Ndiyo 1 Kama ndiyo, taja idadi ya watoto____ Hapana 0	>5.15
5.14	Kama ndiyo, wangapi wa wangapi kiume na wangapi wa kike?	Idadi wa kiume ____, Idadi wa kike __	
5.15	Je una watoto wa kiume au wa kike wangapi walio hai lakini huishi nao?	Ndiyo 1 Kama ndiyo, Idadi wa kiume ____, Idadi wa kike _____ Hapana 0	
5.16	Je umewahi kupata watoto wa kiume na/au wa kike waliozaliwa hai lakini wakafariki dunia?	Ndiyo 1 Hapana 0	
5.17	Kama ungeweza kurudi nyuma kipindi kile ulikuwa hujapa mtoto yeyote na ukaweza kupanga idadi kamili ya watoto ambao ungependa kupata katika maisha yako yote, idadi yao ingekuwa wangapi?	<i>Waulizwe walio na watoto tu, vinginevyo >5.18</i> Hakuna 1 Idadi kamili 2 Taja idadi _____ Mengineyo 3 Kama ni mengine, elezea_____	>5.20 >5.20 >5.20

5.18	Kama ungeweza kupanga idadi kamili ya watoto ambao ungependa kupata katika maisha yako yote, idadi yao ingekuwa wangapi?	<p><i>Waulizwe wasio na watoto tu, vinginevyo >5.20</i></p> <p>Hakuna Idadi, taja _____ Mengineyo, elezea_____</p>	
5.19	Katika watoto hawa, wangapi ungependa wawe wavulana, wangapi wasichana na wangapi usingejali jinsia yao?	<p>Wavulana _____ Wasichana _____ Jinsia yoyote _____</p>	>5.23
5.20	Kama una watoto, kuna watoto uliozaa na mwenzi wako wa sasa?	<p><i>Waulizwe walio kwenye mahusiano tu, vinginevyo, >5.21</i></p> <p style="text-align: right;">Ndiyo 1 Kama ndiyo, taja idadi ya watoto ulionao na mwenzi wa sasa _____</p> <p style="text-align: right;">Hapana 0</p>	
5.21	Miongoni mwa watoto hawa, kuna waliozaliwa baada ya kubainika kuwa na VVU/UKIMWI?	<p style="text-align: right;">Ndiyo 1</p> <p>Kama ndiyo, taja idadi ya watoto waliozaliwa baada ya kupima_____</p> <p style="text-align: right;">Hapana 0</p>	>5.23
5.22	Kama ndiyo, je ulipata matibabu yoyote yanayopunguza uwezekano wa kumwambukize mtoto?	<p style="text-align: right;">Ndiyo 1 Hapana 0 Sijui 99</p>	
5.23	Tangu ubainike kuwa na maambukizi ya VVU, je umezungumza na mwenzi wako kuhusu nia yenu kutaka watoto na idadi yako?	<p style="text-align: right;">Ndiyo 1 Hapana 0</p> <p>Kama hapana, eleza kwa nini hujazungumza naye _____</p>	

	<i>(kwa walio kwenye mahusiano tu, vinginevyo >5.26)</i>		
5.24	Je mwenzi wako anataka watoto siku za usoni??	Ndiyo 1 <i>Kama ndiyo, kwa nini</i> _____ Hapana 0 <i>Kama hapana, kwa nini</i> _____ Sijui 99	
5.25	Kama ndiyo, anataka watoto wangap?	Idadi anayotaka _____	
5.26	Tangu uanze (au mwenzi wako) kutumia dawa za kupunguza makali, je nia yako ya kupata watoto imebadilika? <i>Waulizwe wanaotumia dawa za kupunguza makali. vinginevvo >5.28</i>	Ndiyo <i>Kama ndiyo, kwa nini</i> _____ Hapana 0	
5.27	Tangu uanze (au mwenzi wako) kutumia dawa za kupunguza makali, idadi ya watoto uliokuwa umepanga kupata maishani mwako imebadilika?	Ndiyo 1 <i>Kama ndiyo, kwa nini</i> _____ Hapana 0	
5.28	Baada ya kugundulika na maambukizi ya VVU/UKIMWI, je kuna mtu au watu waliojadili na wewe na kukupa ushauri kuhusiana na haki yako ya kupata watoto na unyumba?	Ndiyo 1 Hapana 0	>6.1

5.29	<p>Kama ndiyo, ni nani au kina nani waliokushauri?</p> <p><i>Zungushia wote waliotajwa na mshiriki</i></p>	<p>Washauri nasaha vituo vya kupima 1</p> <p>Washauri nasaha kliniki za wajawazito 2</p> <p>Washauri nasaha vituo vya matibabu ya kupunguza makali 3</p> <p>Mwenzi wangu 4</p> <p>Rafiki/jamaa/jirani 5</p> <p>Viongozi wa dini 6</p> <p>Wengineo 7</p> <p><i>Kama wengineo, eleaza_____</i></p>	
5.30	<p>Kama ndiyo, ulishauriwa nini hasa?</p> <p><i>Zungushia yote yaliyotajwa na mshiriki</i></p>	<p>Unaweza kupata watoto sawa na watu wengine 1</p> <p>Usibebe mimba kwa sababu mtoto naye ataambukizwa na kufa 2</p> <p>Fanya ngono kwa kutumia kondom ili usiambukizwe tena na usiwaambukize wengine 3</p> <p>Usifanye ngono ili kuzuia maambukizi mapya na usimwambukize mwenzi wako 4</p> <p>Usipate mtoto kwa sababu ukianza kuugua mtoto atapata shida na hata kuwa yatima 5</p> <p>Mengineyo 6</p> <p><i>Kama wengineo, eleza_____</i></p>	

Taarifa kuhusu matumizi ya njia za uzazi wa mpango			
6.1	Je wewe au mwenzi wako amepewa taarifa au ushauri wowote wa namna ya kuchelewesha au kuzuia kabisa ujauzito kwa kutumia njia za uzazi wa mpango?	Ndiyo/Mwenzi alipewa 1 Hapana 2	>6.3
6.2	Ndiyo/Mwenzi alipewa, ulipata/alipata kutoka wapi? <i>Zungushia zote zilizotajwa na mshiriki</i>	Washauri nasaha vituo vya kupima 1 Washauri nasaha kliniki za wajawazito 2 Washauri nasaha vituo vya matibabu ya kupunguza makali 3 Mwenzi wangu 4 Rafiki/jamaa/jirani 5 Wengineo 6 <i>Kama wengineo, eleza _____</i>	
6.3	Umewahi kutumia chochote au kujaribu njia yoyote ya kuchelewesha au kuzuia mimba au kutompa mimba mwenzi wako?	Ndiyo 1 Hapana 0	>6.16
6.4	Wewe/mwenzi wako alikuwa akitumia njia za uzazi wa mpango kabla ya kubainika na maambukizi ya VVU?	Ndiyo/Mwenzi alikuwa akitumia 1 Hapana/Mwezi alikuwa hatumii 0 Sijui 99	>6.8 >6.8

6.5	Endapo wewe au wako alikuwa akitumia njia za uzazi wa mpango kabla ya kubainika na maambukizi ya VVU, ni njia gani hizo?	<p><i>Zungushia zote zilizotajwa na mshiriki</i></p> <p>Kondom 1 Vidonge 2 Sindano 3 Vipandikizi 4 Kitanzi 5</p> <p>Njia ya kudumu (wanaume/wanawake) 6</p> <p>Kusubiri kwa vipindi 7</p> <p>Siku za mwanzo za kunyonyesha baada ya kujifungua 8</p> <p>Kuchomoa uume na kumwaga manii nje 9</p> <p>Mafuta ya jeli 10</p> <p>Nyinginezo 11</p> <p>Kama nyingine, eleza _____</p>	
6.6	Je wewe au mwenzi wako alibadili njia za uzazi wa mpango alizokuwa akitumia baada ya kubainika na maambukizi ya VVU?	<p>Ndiyo/Mwenzi alibadili 1</p> <p><i>Kwa nini ulibadili/alibadili?</i></p> <p>_____</p> <p>Hapana 0</p> <p>Sijui kama mwenzi wangu alibadili 99</p>	
6.7	Je wewe au mwenzi wako alibadili njia za uzazi wa mpango alizokuwa akitumia baada ya kuanza kuatumia dawa za kupunguza makali ya VVU/UKIMWI?	<p>Ndiyo/Mwenzi alibadili 1</p> <p><i>Kwa nini ulibadili/alibadili?</i> _____</p> <p>Hapana 0</p> <p>Sijui kama mwenzi wangu alibadili 99</p>	
6.8	Je wewe au mwenzi wako anatumia njia za uzazi wa mpango wa uzazi kwa sasa?	<p>Ndiyo/Mwenzi anatumia 1</p> <p>Hapana/Mwenzi hatumii 0</p> <p>Sijui kama mwenzi wangu anatumia 99</p>	<p>>6.16</p> <p>>6.16</p>

6.9	<p>Endapo wewe au mwenzi wako anatumia njia za uzazi wa mpango kwa sasa, ni njia gani hizo?</p> <p><i>Zungushia zote zilizotajwa na mshiriki</i></p>	<p>Kondom 1</p> <p>Vidonge 2</p> <p>Sindano 3</p> <p>Vipandikizi 4</p> <p>Kitanzi 5</p> <p>Njia ya kudumu (wanaume/wanawake) 6</p> <p>Kusubiri kwa vipindi 7</p> <p>Siku za mwanzo za kunyonyesha baada ya kujifungua 8</p> <p>Kuchomoa uume na kumwaga manii nje 9</p> <p>Mafuta ya jeli 10</p> <p>Nyinginezo 11</p> <p>Kama nyingine, eleza _____</p>	<p>>6.10,</p> <p>6.11,</p> <p>6.19</p> <p>>6.19</p> <p>>6.19</p>
6.10	<p>Je mwenzi wako anajua kama unatumia njia za uzazi wa mpango wa uzazi kwa sasa?</p>	<p>Ndiyo 1</p> <p>Hapana 0</p> <p>Sina mwenzi 99</p>	<p>>6.12</p> <p>>6.12</p>
6.11	<p>Endapo mwenzi wako anajua kuwa unatumia njia za uzazi wa mpango kwa sasa, je ulimshirikisha katika kuamua njia ya kutumia?</p>	<p>Ndiyo 1</p> <p>Hapana 0</p> <p><i>Kama hapana, kwa nini? _____</i></p>	
6.12	<p>Mara ya mwisho ulipata wapi njia za mpango unazotumia?</p>	<p>Vituo vya afya na mashirika ya serikali 1</p> <p>Vituo vya kidini/kujitolea 2</p> <p>Hospitali binafsi 3</p> <p>Nyinginezo 4</p> <p>Kama nyingine, taja _____</p>	
6.13	<p>Je mara zote unapata njia ya mpango unayotumia kwa sasa?</p>	<p>Ndiyo 1</p> <p>Hapana 0</p>	

6.14	Kuna gharama zozote zinazombatana na njia ya uzazi wa mpango unayotumia kwa sasa?	Ndiyo 1 Hapana 0	>6.19
6.15	Kama ndiyo, unaweza kuamuda kulipia gharama hizi?	Ndiyo, mara zote 1 Ndiyo, siyo mara zote 2 Hapana 0	>6.19 >6.19 >6.19
6.16	Endapo unapenda kutumia njia za uzazi wa mpango, ni mambo gani yanakufanya usitumie sasa? <i>Zungushia yote yaliyotajwa</i>	Mwenzi wangu hataki 1 Upatikanaji wa hizo njia ni mgumu 2 Naogopa kuchanganya na dawa za kupunguza makali 3 Baadhi ya njia hizo haziwezi kuzuia maambukizi 4 Nyingine 5 Kama Nyingine, elezea _____	
6.17	Kama hutumii njia za uzazi wa mpango, uanadhani unaweza ukatumia njia hizi siku za usoni ili kuchelewesha au kuzuia mimba?	Yes 1 No 0	>6.19
6.18	Kama ndiyo, ungependelea kutumia njia gani? <i>Zungushia zote alizotaja mshiriki</i>	Kondom 1 Vidonge 2 Sindano 3 Vipandikizi 4 Kitanzi 5 Njia ya kudumu (wanaume/wanawake) 6 Kusubiri kwa vipindi 7 Siku za mwanzo za kunyonyesha baada ya kujifungua 8 Kuchomoa uume na kumwaga manii nje 9 Mafuta ya jeli 10 Nyinginezo 11 Kama nyingine, eleza _____	

6.19	Katika wiki chache zijazo, ikitokea wewe (au mwenzi wako) ukagundua kuwa una au ana ujauzito, hilo litakuwa tatizo kubwa sana kwako, tatizo dogo au halitakuwa tatizo kwako?	<p style="text-align: right;">Tatizo kubwa 1</p> <p><i>Kwa nini tatizo kubwa? _____</i></p> <p>Tatizo dogo 2</p> <p>Sio tatizo 3</p> <p>Eleza kwa nini siyo tatizo au ni tatizo dogo kwako _____</p> <p>Haihusiki (mwanaume asiye na mwenzi/ mama mjamzito) 99</p>	<p>Mwisho</p> <p>Mwisho</p> <p>Mwisho</p>
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Asante kwa muda wako na ushirikiano wako

Appendix V: Introduction Letters