Addis Ababa University, Medical Faculty

School of public Health

Fertility intention and Family Planning utilization among People living with HIV/AIDS in Felege Hiwot Hospital Bahir Dar.

By: Tiguaded Fentahun

Advisor: Derege Habte (MD, MPH)

A thesis submitted to the school of public health of Addis Ababa University in partial fulfilment of the requirements for the degree of Master of Public Health.

July, 2008

Addis Ababa

Ethiopia

Acknowledgment

First and for most, I am grateful to my advisor Dr.Dereje Habte for assisting me with devotion and concern in each and every step of the study. Special thanks go to Dr. Alemayhu Worku in helping me in data analyses. And I would like to extend my deep gratitude to CORHA for funding this study.

My acknowledgment also goes to my beloved families for their support and encourage through out the years of my study. I am also grateful to the supervisor and data collectors who committed themselves through out the study period. Finally, I would like to express my gratitude to all participants who volunteered to participate in the study.

Table of content

List of Tables

List of Figures

List of annexes

List of Abbreviations

AAU	Addis Ababa University
AIDS	Acquired Immune Deficiency Syndrome
AOR	Adjusted Odds ratio
ART	Anti Retroviral Treatment
CI	Confidence Interval
FHAPCO	Federal HIV/AIDS Prevention and Control Office
FP	Family Planning
HAART	Highly Active Anti Retroviral Therapy
HIV	Human Immune Deficiency Virus
MOH	Ministry of health
MTCT	Mother to Child Transmission
OCP	Oral contraceptive pill
PLWHA	People Living With HIV/ AIDS
PMTCT	Prevention of Mother to Child HIV Transmission
RH	Reproductive Health
SD	Standard Deviation
SPSS	Statistical package for social sciences
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing

Abstract

Background: HIV positive individuals may or may not have intention to have children. They could also have different degrees of utilization and demand for family planning. The extent of the intention and how it varies by individual, social, health and demographic characteristics is not well understood. The desire of HIV infected persons to have children in the future has significant implication for the transmission of HIV to sexual partners or newborns.

Objective: The aim of the study is to assess fertility intention and family planning Utilization of people living with HIV/AIDS who are at ART follow up care in Bahir Dar.

Method: The study was undertaken from March 11 to 26, 2008, using quantitative cross-sectional study supplemented by qualitative in-depth interview on a sample of 366 PLWHA on follow up care. The study subjects were selected using quota sampling technique. The pre-tested questionnaire was used to collect the data and analysed using EPI info window 2000 and SPSS 11.0 statistical packages.

Result: Nearly one fifth of respondents (21.6%), male 42 (53.2%) and female 37 (46.8%) had an intention of child. In general PLWHAs who were intended to have children are those on ART follow up care more than a year (AOR:4.33 ,95% CI: 1.35-13.90) and not having any children (AOR: 13.9 ,95% CI: 3.6-54.27) than those who did not desire children. Fifty five (33.7%) male and 46 (22.7%), overall 101(27.6%) were using family planning during the study period. The respondents who were using family planning were marriage/living together (AOR 3.67, 95%CI: 1.48-9.08), divorce/ widow (AOR: 0.30, 95%CI: 0.10_0.90) and who can read and write (AOR: 3.76 95%CI:1.26-11.22) showed significant association with current family planning use. Thirty nine (51.3%) married women/live together had unmet need.

Conclusion: A high proportion of HIV positive individuals who received medical care expressed a wish for parenthood and wants to use family planning. The extent of fertility intention and family planning needs of these people has implication for vertical, heterosexual transmission and the need for counselling.

1. Introduction

Since the onset of HIV/AIDS all region of the world had experienced the pandemic (1). Considering regional variations it has been found that Sub Saharan Africa remains by far the worst affected region hit by the HIV/AIDS epidemic. This means it has had a heavy toll of human life and adversely affects many activities in the world (2, 3). Ethiopia is currently one of the countries most seriously affected by HIV/AIDS with adult HIV prevalence of 2.1%, 7.7 in urban and 0.9 in rural and Amhara region has 2.7 % adult prevalence (5). Heterosexual HIV transmissions followed by mother to child transmission are responsible for most infection in Ethiopia (3, 4, 5).

There has been a remarkable increase in the incidence of HIV infection in women and children ,that has resulted in a major public health effort directed in preventing the prenatal transmission .With out intervention HIV has a 25-50 % risk of infecting her baby and use of combination of anti retroviral therapy during pregnancy and labour ,delivery by Caesarean section and avoidance of breast feeding are proved measures which have reduced the risk of vertical transmission to less than 2%.This makes positive parenting a viable option at least in countries where Anti-retroviral treatment is widely available. In these countries HIV positive or affected individuals are exercising their reproductive choice in a way that poses new medical, ethical and legal challenges (7, 8, 9).

Engender health has found family planning to have been grossly underutilized as vehicle for addressing the spread of HIV/AIDS. The ABC approach to HIV/AIDS has justifiably received wide spread attention.

But it is known that this approach is not enough and delayed sexual activity(D), treatment of opportunistic infections and increase access to ART (T) and family planning(F) are included as ABC and DTF approach. Women who are HIV infected are always vulnerable to unintended pregnancy and also any women who are with unmet need for family planning are either infected or at risk for HIV infection which contribute to the incidence of maternal to child transmission . More over preventing unintended pregnancy is vital to meeting HIV positive people sexual and reproductive health needs. Although it is one corner stone implementers have not prioritized family planning. Thus HIV infected women who wish to avoid or delay pregnancy must have ready access to family planning as an important method of reducing this transmission (10).

The desire of HIV-infected persons to have children in the future has significant implications for the transmission of HIV to sexual partners and newborns. This risk of HIV transmission among individual couples is likely to increase as more infected individuals choose to have children with their HIV-negative partners. Despite the growing importance of fertility issues for HIV-infected men and women, little is known about their actual fertility intentions and family planning utilization (11). Therefore the study will help in providing information that is helpful in programming and implementing PMTCT programmes.

2. Literature review

2.1 Global and national context of HIV/AIDS

Sub-Saharan Africa has just over 10% of the world's population, but is home to more than 60% of all people living with HIV (25.8 million). In 2005, an estimated 3.2 million people in the region became newly infected, while 2.4 million adults and children died of AIDS. Among young people aged 15–24 years, an estimated 4.6% of women and 1.7% of men were living with HIV in 2005. (2, 3) Ethiopia national adult prevalence rate is 2.1% of which 7.7 % are urban and 0.9% rural according to the (5). The prevailing mode of HIV transmission remains heterosexual, accounting for about 87% of all infections in the country and about 10% new infections occur as a result of mother-to-child transmission. The highest infection rate concentrated in urban females aged 15-24 years that is 15 % prevalence. (3,6).

2.2 Fertility intention of people living with HIV

As more than 80% of all women living with HIV and their partners are in their reproductive years, man will continue to want children after learning their positive status, whether to start a family or to have more children. Others may wish to regulate their fertility, so that they can decide whether to try for a pregnancy and when. Fertility-related needs of women and men living with HIV and of discordant couples may differ substantially from those who are HIV negative. HIV infection may affect sexuality because of fear of infecting the sexual partner(s), feelings of guilt and shame aggravated by stigma related to HIV, or emotional or psychological distress, reducing desire for or interest in sexual relations (7).

With the increasing availability of antiretroviral treatment and improvement in health status, there may be a renewed interest in sexual relations and the desire to have children for women and men living with HIV. When it comes to family planning choices, when only one partner is HIV positive, the potential risk of transmitting HIV to the uninfected partner as well as the possibility of infection with other STIs should be taken into account. And When both partners are living with HIV, possible re-infection with HIV has to be considered, although there is still uncertainty regarding the risk and consequences of re-infection. These issues may be perceived differently depending on factors such as living in a resource-poor country with limited access to both antiretroviral therapy and STI treatment(7).

For women, the desire for children is determined by social and personal expectations. Another most important demographic attribute is the availability of information on the number of living children, which has manifold implications for almost everybody especially for women. As per the study conducted in Mumbai, the desire for children was indicated that about 13 percent of respondents did want to have a child in spite of the regular counselling. Some of them expressed a desperate need to have a child especially if they had no live children. Various reasons told by them include old age security, lineage, free from the charge of being Infertile and leave something of themselves behind after their death. The main reasons for not desiring to have children by HIV positives from qualitative study include we both are having a hard time because of infection then why to invite an innocent for suffering, my wife and the child both will be infected and the money for our treatment is not sufficient. Among those respondents who were having children, 11 percent of them had HIV positive children. And it was observed that 13 percent of the respondents had their last child after diagnosis (8).

Women who desired children were more likely either to be married or to have a partner (84%) than those who did not (64%). Men who desired children were no more likely to have had an opposite sex partner than were men who did not desire children. The percentage of men who identified themselves as bisexual was somewhat greater among those who desired more children (23%) than among those who did not (18%). Women who desired children were more likely to have a partner of unknown HIV status (32%) than were women who did not desire children (14%). Among HIV-positive men and women who desired children, the percentage of those younger than 40 who actually expected to have children was almost always greater than the percentage that did not (8).

A study in US revealed found that 45 percent of HIV- positive women and 38 percent of HIV-positive men expressed the desire for children. Another study conducted in the United States concluded that overall, 28-29 percent of HIV-infected men and women receiving medical care desire children in the future. Among those desiring children, 69 percent of women and 59 percent of men actually expect to have one or more children in the future. Further, it was observed in multivariate analyses that HIV-positive women who already had children were significantly less likely than others both to desire and to expect more births, partner's HIV status has mixed effects: Women whose partner's HIV status was known were significantly less likely to desire children but were significantly more likely to expect children in the future than are women whose partner's HIV status was unknown (11,12).

The study at Zurice infectious clinic at US demonstrates 20% of HIV-positive women aged between 20 and 40 and 22% of HIV positive men aged between 20 and 50 reported a current desire for children during the study period. An even larger proportion (47.5%) of

HIV-positive women stated they would like to have children in the future. Individuals who experienced improved health while on HAART were significantly more likely to express a desire for parenthood, while CD4+ count had no effect on the desire for children. Among HIV-discordant partnerships, inconsistent condom use was independent of the current desire to conceive 22% with strong versus 32% with no fertility desire (12).

The study from Demographic health survey in Lesotho were explained the desire for children among HIV-positive women age 15-49 to be 37.8% for those last tested in the past 12 months and learned their status; 32.5% for those last tested prior to the past 12 months and learned their status; and 39.4% for those who have never learned their status. Furthermore, a sizable proportion of infected women 38.7% intend to have a child. Women who learn that they are HIV-infected may have a strong desire to avoid bearing additional children who may be born HIV-infected and will become orphaned at an early age . Thus there is considerable potential for mother-to-child transmission in Lesotho (13).

The study in Addis Ababa found out that 44.7% of the female and 35.2% of the male respondents expressed the desire for children, giving a total of 40.2% of all respondents. Out of those desiring children 42.2% desired to have one child while, 57.8% desire to have two or more children. Eighty one 43.8%of the respondents planed to have a child with in two years while, 56.2% after two years. Women were significantly more likely to desire children compared to men. Men are less likely to desire any children (14).

2.3 Determinants of fertility intention of people living with HIV

The study from demographic health survey in Lesotho showed a higher proportion of married HIV-positive women want a child in future than women who are never married or formerly married. Other variables, including knowledge of MTCT, household wealth

quintile, and education, have no significant bivariate relationship with the desire for children for HIV positive women. Factors associated with wanting to give birth in the future have a similar relationship for HIV-positive and HIV-negative women in Lesotho. Marital status and the number of children still living are the strongest determinants of whether a woman wants to give birth in future. There is a strong inverse relationship between future childbearing desires and the number of children still living among HIV-positive women age 35 and over are significantly less likely to want a child in future compared with those age 15-19 (13).

The study in Addis Ababa indicated that population in age group 18-29 or 30-39, being female, being married/ in relation ship, having secondary education and above, having no children or 1-2 children and partner desire for fertility were positively and significantly associated with desire for children (p 0.05) On the other hand disclosure of sero status to partner/spouse has association with lower desire for children (14).

The respondents in age group 18-29, those who were married or in relationship and who had no children were more likely to desire children. Moreover, those whose partners desired children were more likely to desire children than those whose partners did not desire children (14).

A study in kenya reflected that Being infected with HIV is associated with lower recent fertility (0.168 fewer births). The mean number of births in the past three years was 0.431, meaning that HIV infection is associated with 39% lower fertility; this is quite consistent with previous literature on individual-level effects. However, living in an area where HIV prevalence is a percentage point higher is associated with recent fertility that is 0.019 births higher (27).

2.4 Family planning utilization status and unmet need

Although preventing primary infection in women is the first step towards preventing infection in infants. In Africa current level of contraceptive use is as low as they are already preventing 22% of HIV positive births. Here unintended pregnancy is high and its major cause is limited access to family planning with unmet need of 36% in some countries with high prevalence (15).

Regarding demand for contraception, some studies have pointed out that in the absence of HIV-related symptoms, the impact of having HIV on people's decisions regarding childbearing and contraceptive use is generally weak.(4). Most respondents from the qualitative study of Zimbabwe believed that HIV is the cause for the increase in demand as couples seek contraception to limit childbearing, avoid pregnancy, avoid infection, or possibly gain weight if they have lost weight from HIV (16).

HIV-infected persons need to know that, aside from abstinence, condoms offer the best protection against STIs. Male or female condoms should be used every time intercourse occurs. This is to avoid HIV transmission to partners and to protect themselves from other STIs. In a study by Panozzo indicated that about three-fourth of the HIV-positive respondents with sero-discordant partner reported consistent use of condoms. There is concern that sexual partners of HIV-positive women using more effective contraception may not use condoms as consistently as partners of women using less effective contraception (8, 12).

From qualitative study in Mumbai reasons of not using condom while doing sex with spouse were to bear child and lack of awareness about transmission. It was observed that about three-fourths of the respondents were still continuing sexual relationship with their regular partner after diagnosis. However, a significant change was observed as far as use of contraception is concerned. It was found that a majority of them started using condoms regularly to avoid any kind of infection, which in turn restricts them from conception. Recent data from people accessing services for antiretroviral treatment and PMTCT in Ghana, Ethiopia, Kenya, Rwanda and South Africa shows that male condom are the contraceptive methods most frequently used however it is lower when the degree of intimacy increases (7, 8).

In Lesotho unmet need for contraception is lower among HIV-positive women who were last tested in the past 12 months and learned their status (21.6%) than among those who were last tested prior to the past 12 months and learned their status 29.2% and those who have never learned their status 32.5%. The unmet need was lower among women who have spoken to family staff, irrespective of HIV status (13). There is significantly greater unmet need among HIV-positive women who live in rural areas, are currently married, live in poorer households, have less education, are older, have heard of family planning in the media, and approve of contraception and HIV-positive women with knowledge of MTCT have higher unmet need (13).

Contraceptive use has increased substantially in many low- and middle-income countries. However, despite these increases, many women who desire to postpone, space or limit pregnancies still have an unmet need for safe and effective contraception, especially in sub-Saharan Africa, where only 27% of women of reproductive age who are married or cohabiting use contraception compared with a world average of 61%. When motivation to regulate fertility is strong but effective contraception is inaccessible, many unintended pregnancies occur. Unmet need for family planning is highest in sub-Saharan Africa (as high as 36 percent in some countries), where the HIV/AIDS epidemic is most prevalent (26).

2.5 Contraceptive method choices

Making available safe and effective contraception and high-quality reproductive health counselling can help a woman practice safer sex, determine her future childbearing patterns on a more responsible and informed basis, and potentially reduce the numbers of HIV infected births. Among both HIV-positive and HIV-negative women, injection and the pill are the most popular contraceptive methods and only 6.3% of HIV-positive women age 15-49 in Lesotho use a condom (13).

The study in Addis Ababa reported 48.9% and 43.3% of the respondents ever used at list one method of contraceptive before and after HIV diagnosis respectively. Oral contraceptive pill and indictable were most commonly used before HIV diagnosis 45.8% and 29.3% respectively. Condom and abstinence were most practiced after HIV diagnosis 65.8% and 21.1% respectively. During the survey period 53.5% of the respondents were using different forms of family planning. Out of these people 61% used condom, while 33.7% practiced abstinence. The most common reason for current method choice was health professional's advice 30 %. Out of those who were not using family planning

method during the survey period 39.7% wants to use family planning in the future. The most preferred method of contraceptive was condom and injectables 72.9% and 21.2 % respectively (14).

Contraception use and compliance is related to the range of methods available, patient choice, prevalent health and religious beliefs, perceptions of method effectiveness, and side effects (for example, women may have less tolerance for heavy and prolonged vaginal bleeding than amenorrhea). Correct use of most user dependent methods requires a basic knowledge of reproduction and literacy skills to follow written instructions. Oral, injectable, and implantable hormonal contraceptive methods and the intrauterine system are all suitable choices for HIV-Caution may be appropriate when providing hormonal contraception for women taking enzyme inducing drugs including some HAART (Highly Active Antiretroviral Therapy) drugs and the anti-tuberculosis agent rifampicin (28, 29).

2.7. Mother to child transmission and prevention

Each year, around half a million children aged under 15 become infected with HIV. Almost all of these infections occur in developing countries, and more than 90% are the result of mother-to-child transmission (30). In developed countries, MTCT rates have fallen to as low as two percent of births among HIV-infected mothers in recent years with the introduction of HIV counselling and testing, short-course zidovudine prophylaxis, elective Caesarean delivery, and the safe use of infant formula instead of breastfeeding (9,16, 31).

In Africa, however, about 25–35 percent of HIV-infected mothers pass on HIV to their infants. The risk of infection is now thought to be 5 to 10 percent during pregnancy; 10 to 20 percent during labour and delivery; and 10 to 20 percent during breast feeding. Although there are some indications that HIV *incidence* may finally be stabilizing in some sub-Saharan African countries, those perhaps most *directly* affected are children who acquire HIV/AIDS through MTCT. The severity of the MTCT problem in sub-Saharan Africa is due to high rates of HIV infection in women of reproductive age, a large total population of women of reproductive age, high birth rates, and the lack of effective MTCT prevention interventions (31,32).

Mother-to-child transmission (MTCT) rates are very variable, with reported figures typically in the range 12%-45%. breastfeeding, without PMTCT intervention: 30%; breastfeeding, with PMTCT intervention: 20%; without breastfeeding, without PMTCT intervention: 20%; without breastfeeding, with PMTCT intervention: 10%.When HIV-positive women are treated in late pregnancy and during labor with a short course of zidovudine, their child's likelihood of later becoming infected with HIV is significantly reduced, even when that child has been breastfed. Overall, about two years after being born, children of HIV-infected mothers who had been treated with zidovudine around the time of delivery were about 25% less likely to be HIV-positive (32).

2.8 Place of Family planning in PMTCT

The terms “PMTCT” or “PMTCT programmes” are almost exclusively used to refer to programmes that provide antiretroviral prophylaxis for HIV-infected pregnant women. This is the case despite the 2002 WHO and United Nations’ recommendation of the following comprehensive approach for PMTCT programmes: 1) Primary prevention of HIV infection

2) Preventing unintended pregnancies among HIV-infected women 3) Preventing HIV transmission from HIV-infected women to their children and 4) Providing care for HIV-infected mothers and their infants. Most PMTCT guidelines and programmes focus almost solely on the third approach (33).

A study using cost–effectiveness modelling based on data from actual field implementation in eight African countries demonstrated the potential importance of family planning services in reducing HIV infection among infants (33). Reducing unintended pregnancies among women living with HIV/AIDS by 16% would be estimated to have the equivalent impact in averting HIV infection among infants as antiretroviral prophylaxis using single dose maternal and infant nevirapine (34).

A USAID-funded analysis found that family planning services can enhance the cost-effectiveness of PMTCT interventions by Integrating FP and PMTCT services could double the effectiveness of PMTCT programs in decreasing the numbers of child infections, child deaths, and, ultimately, children orphaned. (). The findings suggest that adding family planning to PMTCT sites can save the lives of thousands of women and children and significantly reduce the number of orphans. A recent USAID-funded analysis examined the costs and benefits of adding family planning services to programs for the prevention of mother to child transmission of HIV (PMTCT). And adding family planning service cost effectiveness analysis estimates cost per infection averted are $ 660 and per child death $ 360 and per pregnancy $ 130 (34).

Money spent on avoiding unintended pregnancies could prevent more HIV positive births than spending the same amount on ARTs. Strengthening FP in PMTCT prevents unwanted pregnancies and doubles the number of HIV positive births averted. And integration model need to strengthen between FP-VCT, FP-ART, and FP-PMTCT. Family planning can help HIV/AIDS efforts by providing HIV+ couples with an opportunity to prevent unintended pregnancies and to prevent future children from becoming HIV-infected or orphaned (35).

2.9 Reproductive options for sero-discordant couple

Options for HIV-affected couples to realize the wish for parenthood theoretically vary from unprotected intercourse to several techniques of assisted reproduction, donor insemination or adoption (36). Consistent use of condoms can decrease HIV transmission risk in heterosexual relationships by 85% and abstinence from condom use restricted to the time of ovulation has been proposed as an option for discordant couples. However available data can not support this option as a safe option for discordant couples (36).

To minimize the risk of HIV transmission the following options are recommended.

1- Self – insemination or assisted reproduction in case of infection in the female Partner.

2- Assisted reproduction with processed sperm in case of infection in male Partner.

Since HIV could theoretically remain undetected sperm washing is currently regarded as a very effective risk reduction, but not risk free method (36). Donor insemination is an alternative safe option for a small number of couples, but due to legal restriction it is only offered in small countries. In addition most couples wish for a child that is the biological offspring of both parents, adoption in many countries is merely a theoretical option (36).

3. Objectives

3.1. General objective:

- To assess the fertility intention and family planning utilization of people living with HIV/AIDS (reproductive choice) who are at ART follow up care, at Felege Hiwot Hospital in Bahir Dar.

3.2. Specific objectives:

- To describe fertility intention of people living with HIV/AIDS.
- To describe the extent of family planning method utilization by PLWHA.
- To determine the factors affecting their fertility intention among PLWHA.
- To determine the factors that influences their family planning utilization among PLWHA.
- To assess the unmet need of family planning among PLWHA.

4. Methodology

4.1 Study area and period

The study was conducted in Felege Hiwot Hospital, Bahir Dar, Amhara regional state from March 11 to 26, 2008. Bahir Dar is located 560 Kilometres away from Addis Ababa. Town has a total population 210,836 with sex ratio of 1.1.It has also one referral hospital, three health center and three private higher clinics. ART service is provided mainly at Felege Hiwot Hospital and Bahir Dar health center also started to provide the service.

4.2 Study design

A cross sectional institution based study design was employed. It was supplemented by qualitative in-depth interview among people living with HIV/AIDS who were not included in the quantitative part and health care providers working at ART clinic.

4.3 Source and study population

4.3.1 Source population

At the time of data collection, 3356 PLWHA were followed for more than one visit and 125 were newly enrolled. From those who had more than one times follow up the proportion of male and female were 44.5% and 55.5% respectively.

4.3.2 Study population

The study population was all PLWHA with at least one visit during the study period in the selected health facility.

Inclusion criteria's

- PLWHAs who were in the reproductive age group and who are on ART.

Exclusion criteria

- § PLWHAs no taking ART.
- § PLWHAs on ART but out of reproductive age group.
- § People who were seriously ill, unable to speak and hear.

4.4 Sample size Determination

Quantitative method

The sample size calculated using proportion of 40.2 % fertility intention which is obtained from a study in Addis Ababa (11).The proportion used is 40.2 % to get the maximum sample size at 5% marginal error with 95% confidence.

Then using these assumptions the sample size is calculated by applying the formula of single population proportion.

i.e. $n = \frac{(zá/2)2\ p\ (1-p}{d2}$

$= \frac{(1.96)2 \times 0.4 \times 0.6}{(0.05)2}$

$= 366$

n = The required sample size

P = assumed proportion of fertility intention

Z= standard score corresponding to 95% confidence interval

d = allowable marginal error

Qualitative method

The qualitative study sample depended on the level of saturation of information and 12 individuals were interviewed.

4.5 Sampling procedures

Quantitative method

Eligible persons were included in the study consecutively when they come for ART follow up. The study participants were included until reaching the required sample size. The sample size was proportionately allocated to each sex 44.5% male and 55.5%. The study subjects who met the inclusion criteria included until the required sample size was satisfied.

Qualitative method

For the qualitative study, purposive sampling was applied to select study subjects. The interviewee were included for in depth selected purposively based on their sex, age , number of children, marital status and education.

4.6 Data collection Instrument

A structured questionnaire was used to collect the data. The questionnaire was prepared in English then translated to Amharic and again back to English. The questionnaire was contain mainly close ended questions with few open ended questions that addressed information about socio- demography, period of follow up, fertility intention, reasons for fertility intention, preparedness to prevent mother to child transmission and their family planning utilization. For in-depth interview semi-structured questionnaire interview guide was used for the clients as well as service providers.

4.7 Pre-testing the questionnaire

The structured questionnaire was pre-tested on selected ART treatment site on a total of 37 subjects which is 10% of the sample size. During pre-testing the questionnaire was checked for its clarity, simplicity, understandability and coherency. Correction was done made based on the feed back. For confusing words and phrases, locally known and comparable terms were used. The skip order of questions was also revised after pre-test.

4.8 Data collection

The questionnaire was filled by the nurses who are working at ART clinic. Two days training was given to the data collectors and supervisors about confidentiality, responders' right, informed consent, objective of the study, on techniques of the interview and filling the questionnaire. One supervisor who has first degree in public health was assigned and supervises the data collection through out the process. Each questionnaire was checked and corrected with data collectors.

The in-depth interview was carried out by the principal investigator with one assistant. It uses tape recorder, check list and field notes were used to record the relevant information. The interview was undertaken after quantitative part was completed. The interview took 15-20 minutes for each respondent.

4.9 Variables

The independent variables

- Socio demographic characteristics
- No of alive children he/she has
- HIV status of partner
- Discussion between partners about sero-status
- Duration of HIV screening and ART follow Up
- Current perceived health condition
- CD4 count
- counselling on Family planning and RH

The dependent variables

- Fertility intention
- Family planning use

4.10 Operational definitions

Fertility intention- who have desire of child and intended to have at least one child in the future.

Family planning utilization- practice of using contraception

PLWHA on follow up care- people who had at least one visit to the selected ARV treatment care for receiving ARV treatment.

Unmet need of family planning- The number or percent of women currently married or in union are fecund who desire either terminate or postpone (at least two year) child bearing, but who are not using contraceptive currently.

Unintended pregnancy- pregnancy that is mistimed or unwanted.

4.11 Data quality management

The data quality was assured by close follow up done by supervisor and principal investigator. The questionnaire was also checked for its completeness and errors were corrected accordingly.

4.12 Data analyses

The data errors related to inconsistency were checked and corrected during data cleaning. The uni-variate analyses (proportions, percentages, ratios), bi-variate analyses (odds ratio, chi2) and multivariate analysis using logistic regressions with simple enter method were used to obtain the findings of the study. The variables for multi-variate analysis were those variables which have significant association during bi-variant analyses. The analyses were done using SPSS11.0 and EPI info 2000 window version statistical package soft wares.

In qualitative data all the audio tape record interview were transcribed and translated. The translated transcript reviewed and examined thoroughly and categorized in to primary themes. Then the data reviewed and combined in to broader concepts. Finally the concepts were refined in to major themes.

4.13 Ethical consideration

The ethical clearance was obtained from the ethical review committee of school of public health and faculty IRB of Addis Ababa University Medical Faculty. A formal letter was provided to the Regional health bureau from the school of public health and the region to the hospital. More over informed consent was obtained from each respondent. Purpose of the study were informed for the respondents, the information given by each respondent was kept confidential. The dissemination of the finding was not referring specific respondent but to the general source population.

4.14 Dissemination of results

The study outcome will be submitted to Regional and zonal health bureau and HAPCO. It will also be presented at school of public health, Addis Ababa University Medical Faculty. Besides to these the copy of the report will be given to the responsible body and publication will also be considered as one means of dissemination.

5. Results

5.1 Quantitative Result

5.1. 1 Socio-demographic Characteristics of the respondents

A total of 366 participants were included for the study. Of these 203(55.5%) male and 163(44.5) were female with sex ratio of 0.8. The mean (SD) of the respondents age was 32.9 (6.4) respectively, ranging from 18-49 and median of 33 years. Nearly one third (29.0) of the respondents were in the age group of 30-34 years. One hundred fourty seven (40.2%) of respondents were attended secondary school. Majority of the respondents 356(97.3%) were Amhara and the remaining were Oromo and tigray by ethnicity. With regard to occupation 95 (26.0%), 81(22.1%) and 74(20.2%) of the respondents were government employee, daily labourer and merchants respectively, while 17(4.6%) were jobless. Three hundred seventy (86.6%) were Orthdox followed by Musilim 32(8.7%) and the others 17(4.6%) were protestant or Catholic.

Table1. Socio-demographic characteristics of PLWHA respondents at Felege Hiw0t Hospital, Bahir Dar, 2008.

Characteristics		Number	%
Sex of respondents	Male	163	44
	Female	203	55.5
Respondents age	15-19	3	0.8
	20-24	24	6.6
	25-29	75	20.5
	30-34	106	29
	35-40	93	25.4
	41-44	48	13.1
	45+	17	4.6
Respondents education	Do not read and write	84	23
	can read and write	46	12.6
	Elementary	53	14.5
	Secondary	147	40.2
	post secondary	36	9.8
Ethnicity	Amhara	356	97.3
	Other	10	2.7
Current marital status	Single	54	14.8
	Married/co-partners	177	48.3
	divorce/widowed	135	36.9
Religion	Christian	334	90.2
	Muslim	32	8.3
Current occupation	Merchant	74	20.2
	Farmer	14	3.8
	House wife	62	16.9
	Daily Labourer	81	22.1
	Private Employee	15	4.1
	Government Employee	95	26
	Jobless	17	4.6
	Other	8	2.2

5.1.2 Sexuality and condom use

One hundred fifty (41.1%) respondents were sexually active during the past nine months preceding the survey of which 81 (54%) respondents used condom while they did sex. Almost majority 76 (93.8%) of users applied it consistently. Those who did not use condom cited their reason as their partner did not want it 38 (55.1%), my partner were positive 10 (14.5%) and I need to have children 9 (13.1%). Among condom users as the main reason were to prevent cross transmission in 45(32.8%) of responses and to prevent pregnancy in 38(27.7%) responses were reported. Majority of cases 338(92.3%) had discussed about sexuality with the provider. Four fifth (79.6%) of them felt that the discussion touches every thing about sexuality and 42(12.4%) did not recognize its extent. Among those who discussed majority, 11(61.1%) respondents will want additional discussion on issues of sexuality.

Table 2. Percentage distribution of sexuality and condom use characteristics among PLWHA who were Receiving ART at Felege Hiwot Hospital , Bahir Dar 2008.

Characteristics		Number	%
Discussion about sexuality with the provider N= 336	Yes	338	92.3
	No	28	7.7
The provider touches everything about sexuality N= 338	Yes	269	79.6
	No	18	5.3
	I do not know	42	12.4
	Partially	8	2.4
	Other	1	0.3
Need of discussion with the provider N=18	Yes	11	61.1
	I do not want	4	22.2
	I do not know	3	16.7
Condom use during sexuality N= 150	Yes	81	54
	No	69	46
How often they use condom N=81	Always	76	93.8
	Some times	5	6.2
Reasons not to use condom N= 69	I need to have child	9	13.1
	My partner is positive	10	14.5
	My partner did not want	38	55.1
	Other	12	17.4
Reasons to use condom N= 81	To prevent pregnancy	38	27.7
	To prevent other STDs	32	23.4
	My partner status is negative	10	7.3
	Health professionals told me to use	12	8.8
	To prevent cross infection	45	32.8

5.1.3 Fertility intention

Nearly one fifth of respondents (21.6%), male 42 (53.2%) and female 37 (46.8%) had an intention of child. The number of children intended to have in the future were reported as one, two and more than two 18 (22.8%),48 (60.8%) and 13 (16.5%) respectively. And the mean number of births in intended was two. Fertility intention among PLWHAS was compared between different background characteristics. Sex , knowing HIV can be transmit from mother to child, the sero status of partner, recent CD4 count and the age of respondents showed no association with fertility intention ($p>0.05$). Where as, future family planning intention, period of ART follow up current marital status and education showed significant association with fertility intention($p< 0.05$). (Table 3) If in case pregnancy happens the possible measures reported by the respondent were giving birth by consulting health personnel, simply giving birth and abortion in 243 (66.4%),49(13.4%) and 30 (8.2%) respectively and few (7.9%) insisted on not case happens to them by any means.

Table 3. Fertility intention of PLWHA with background characteristics at Felege Hiwot Hospital, Bahir Dar, 2008.

Characteristics		Has fertility intention		No fertility intention		Chi square
		Number	%	Number	%	P value
Sex	Male	42	25.8	121	74.2	0.11
	Female	37	18.2	166	81.8	
RH discussion	yes	67	23.3	221	76.7	0.18
	No	12	16.4	66	84.6	
Know HIV can transmit from MTC	yes	78	22.6	267	77.4	0.08
	No/ do not know	1	12.5	20	87.5	
Out come of partner	Positive	35	27.1	94	72.9	0.31
	Negative	7	17.9	32	82.1	
	I do not know	0	0	3	100	
Education	Literate	61	25.8	175	74.2	0.02
	Can read and write	4	8.7	42	91.3	
	Illiterate	14	16.7	70	83.3	
CD4 count	Not known	19	17.9	87	82.1	0.11
	<200	36	28.6	90	71.4	
	200-500	7	23.3	23	76.7	
	>500	17	16.3	87	83.7	
Current marital status	Single	24	32	51	68	P<0.00
	married/live together	42	26.9	114	73.1	
	divorce/widowed	13	9.6	122	90.4	
Period of ART follow up	<= the median time	40	17.5	189	82.5	0.02
	> median time	39	28.5	98	71.5	
Respondents age	<= 33 year	48	24	152	76	0.27
	> 33 years old	31	18.7	135	81.3	
Future family planning intention	yes	48	30	112	70	P<0.00
	No	29	15.5	158	84.5	
	I do not know	2	10.5	17	89.5	

**has association p< 0.05

In bi-variate analysis age of respondent below 40 years, those who can read and write, divorce/widow, have no any children and period of ART follow up more than a year had significant association with fertility intentions ($p< 0.05$). Where as, partner status Sex and RH counselling had no association ($p> 0.05$).

In multi-variate analysis having no any children and period of ART follow up more than a year have an association ($p< 0.05$) with adjusted OR 13.9 (95CI: 3.6-54.27) and 4.33 (95% CI: 1.35-13.90) respectively.

Table 4. Associated factors of fertility intention among PLWHAs on ART in Felege Hiwot Hospital Bahir Dar, 2008.

Variables		Has Fertility intention Number (%)	Has no Fertility intention Number (%)	Crude OR (95% CI)	Adjusted OR (95% CI)
Sex	Male	42 (25.8)	121(72.2)	1	1
	Female	37 (18.2)	166(81.8)	0.64 (0.39-1.06)	0.69(0.20-2.33)
Education	Literate	61 (25.8)	175(74.2)	1	1
	Can read and write	4 (8.7)	42 (91.3)	0.24(0.09-0.78)	0.56(0.09-3.32)
	Can not read and write	14 (16.7)	70(83.1)	0.57(0.30-1.09)	0.71(0.17-2.88)
Period of Art follow up	Less than 12 month	40 (17.5)	189(82.5)	1	
	>= 12 month	39 (28.5)	98(71.5)	0.53 (0.32-0.88)	4.33(1.35-13.9)**
Marital status	Single	24 (32.0)	51(68.0)	1	1
	married/live together	42 (26.9)	114(73.1)	1.3 (0.7-0-2.33)	5.24(0.76-35.70)
	Divorce/widow	13 (9.6)	122(90.4)	4.4 (2.09-9.35)	2.19(0.2122.47)
No No of children	has no child	26 (23.2)	88(76.8)	3.93 (1.85-8.35)	13.9(3.6-54.27)**
	Has at least one	11(7.1)	143(92.9)	1	1
Partner status	positive	35 (27.1)	94 (72.9)	1	1
	Negative	7 (16.7)	35 (83.3)	0.53(0.22-1.32)	0.69(0.20-2.33)
Age of respondent	18-29	26 (25.5)	76 (74.5)	0.35 (0.14-0.87)	1.38(0.19-9.63)
	30=39	46 (23.1)	153(76.9)	0.4 (0.17-0.94)	0.99(0.20-4.95)
	>=40	7 (10.8)	58 (89.2)	1	1
RH discussion	Yes	67(23.3)	221(76.7)	1	1
	No	12(15.4)	66(84.6)	0.6(0.31-1.17)	0.93(0.16-5.42)
CD4 count	Not Known	19(17.9)	87(82.1)	1	1
	<200	36(28.6)	90(71.4)	1.83(0.97-3.44)	1.99(0.53-7.43)
	>=200	24(17.9)	110(82.1)	0.99(0.51-1.94)	0.65(0.13,3.04)

** Significant p< 0.05

5.1.3. Family Planning Use

One hundred seventy five (47.8%) of the study participants had ever used contraception before they learn their HIV status and 99(27.2%) were continuing to use the contraception after test. Currently 101(27.6%) of cases were using contraception during the study period. The method choice for the majority, before they had been tested, Were injection which were followed by pills. But after they learn their status most were using condom 60(50.0%) followed by injection 38(31.7%). The reason to the choice between the method were based on their perception to suitness to health 77(76.2%) and health providers choice 16(15.5%). Two third of the respondents (76.0) were not get family planning method from ART clinic i.e. condom. And from those only one fourth 48(17.3%) were referred to family planning service.

Table 5. Shows distribution of family planning use and method choices before and after they did a test among people who are at ART follow up of Felege Hiwot Hospital, Bahir Dare,2008.

Contraceptive use	Before HIV test	After HIV test
	No (%)	No (%)
Yes	175 (47.8)	101 (27.6)
No	191 (62.1)	265 (72.4)
Method used		
Abstinence	0	5 (4.2)
Condom	24 (11.9)	60 (50.0)
Injection	106 (52.5)	38 (31.7)
Pills	59 (29.2)	10 (1.7)
Norplant	8 (4.0)	3 (8.3)
Surgical	2 (1.0)	2 (1.7)
Others	3 (1.5)	2 (1.7)

Regarding to reasons for not using family planning methods were the majority as they have no partner at the survey time 146(55.5%), they did not commit sex 60(22.8) and few 9 (3.4) were reported partner disagreement as their main reason. (fig1)

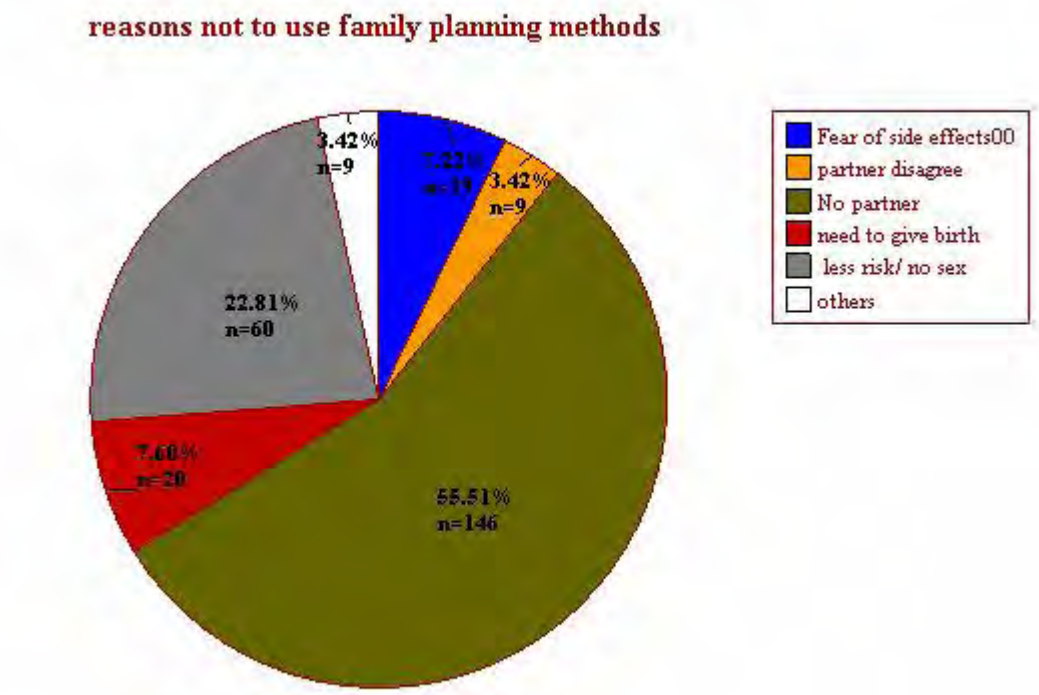

Fig 1 Reasons for not using Family planning method among PLWHAs on ART, Felege Hiwot Hospital, Bahir Dar, 2008.

Among 366 study participants 160 (44%) were had an intention to use family planning and 0f which 107 (66.9%) were planned to start with in a year of the study period. However 22(14%) did not clearly state the time when they will be starting. Among those of 160 respondents with the intention to use family planning methods Seventy (44%) were prefer to use dual protection followed by condom 38 (24%) and few were in favour of long term methods 3(1.8%).(fig 2) The Major reason behind intention to use family planning method was to limit/stop pregnancy 121(79%); 101(63%) would prefer to get the service at FP unit and 55 (54%) want it to be delivered at ART follow up clinic.(Table 6)

Table 6. Percentage distribution of future desire of using FP among different characteristics of PLWHA who are at ART of Felege Hiwot Hospital Bahir Dar,2008.

Characteristics		Number	%
Future desire of FP(N=366)			
	Yes	160	44
	No	187	51
	I do not know	19	5.2
Time to start (N= 160)	with in a year	107	66.9
	After year	21	13.1
	I do not know	21	13.4
	Other	11	6.9
Reasons for intention to use (N=160)	To space birth	33	20.7
	To limit/stop birth	121	75.6
	Others	6	3.7
Site preference to get FP (N= 160)	ART room	55	34
	At FP unit	101	63
	At private clinic	3	1.9
	Others	1	0.6

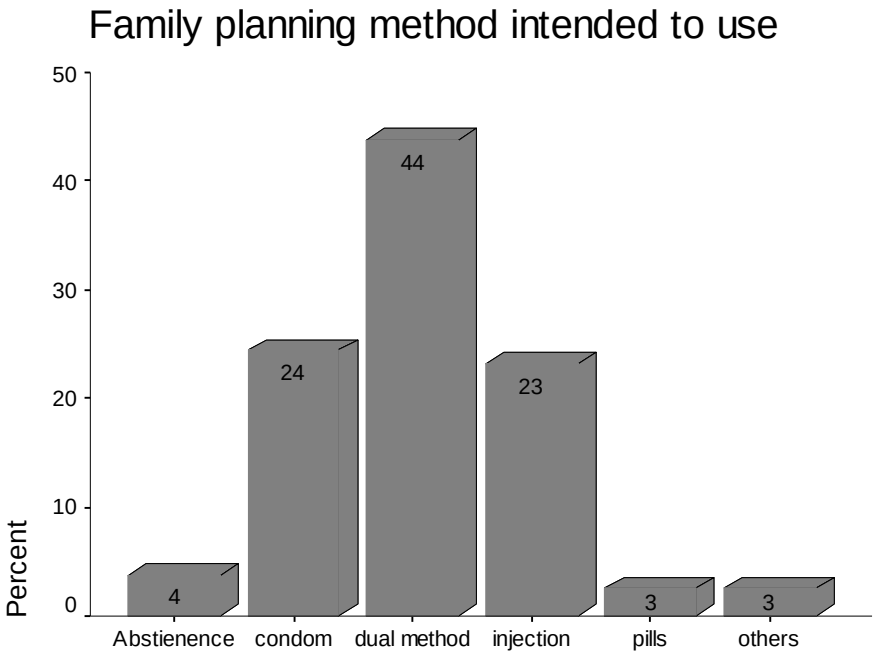

fig 2. family planning methods intended to use

Fig 2 family planning methods intended to use among PLWHAs on ART, Felege Hiwot Hospital, Bahir Dar, 2008.

5.1.4 Knowledge on mother to child transmission

A total of 345 (94.3%) of the study participants said that HIV can be transmitted from mother to child of which 291(37.2) indicated the transmission to be during breast feeding, 237(30.2%) during delivery while 14 (1.8) could not say any thing in this regard. Nearly half of them 167 (48.4%) perceived that half of Children who were borne from affected parents would acquire the virus. (Table 7)

Two hundred ninety four (85.2%) listed the method that can prevent MTCT. From these 263 (65.1) Said medication and 124 (30.7%) stop breast feeding. The great majority 282 (95.9%) believed that there are methods that can prevent the risk of transmission. The main source of information about MTCT were from health professionals 302(53.9%), mass media 179(32%) and PLWHA 38(6.8). (Table 7)

Table 7. Percentage distribution of MTCT and PMTCT related characteristics of PLWHA, Felege Hiwot Hospital, Bahir Dar 2008.

Characteristics		Number	%
HIV can transmit from mother to child (N=366)	Yes	345	94.3
	No/I do not know	21	5.8
ways of passing the virus from mother to child (N=345)	During pregnancy	237	30.2
	At time of delivery	243	31
	During breast feeding	291	37.1
	I do not know	14	1.8
Extent of transmission (N=345)	All child infected	90	26.2
	Half of the child infected	167	48.4
	I do not Know	88	25.4
Now the method of PMTCT (N=345)	Yes	294	85.2
	No	19	5.8
	I do not know	31	9.0
PMTCT methods known (N=294)	Medication	261	65.1
	Stop breast feeding	122	30.7
	surgical delivery	9	2.2
	Others	6	2
believe in preventing risk of transmission (N=294)	Yes	282	95.9
	I do not know	12	4.1
Source of Information (N= 345)	Mass media	179	32
	Health professionals	302	53.9
	Friends	10	1.8
	PLWHA	38	6.8
	House to house volunteers	24	4.3
	Others	7	1.3

Thirty nine (22.0%) married women/live together had unmet need i.e. 33(84.6) for limiting and 6(15.4) for spacing.(fig 3) current family planning use among married women/living together were 38(21.4%) which provide 77(43.4%) potential demand of family planning.(Table 8)

Table 8. frequency distribution of unmet need, met need and no need of contraceptions PLWHA on ART at Felege Hiwot Hospital Bahir Dar.

	Unmet need (N=39)		No need (N=24)		met need (N=36)	
Characteristics	Number	%	Number	%	Number	%
Age						
18-29	15	(38.5)	9	37.5	14	38.9
30-39	23	59	14	58.3	19	52.8
>=40	1	2.6	1	4.2	3	8.3
Education						
Literate	23	59	17	70.8	21	58.3
Can read and write	2	5.1	1	4.2	6	16.7
Can not read and write	14	35.9	6	25	9	25
Know HIV can be HIV transmitted from mother to child						
Yes	39	82.1	24	100	35	97.2
No	1	17.9			1	2.8
Partner status						
Concordant	26	81.3	11	45.8	26	72.2
Discordant	6	18.8	13	54.2	10	27.8
Fertility intention						
Yes	29	74.4	18	75	11	30.6
No	10	25.6	6	25	25	69.4
Family planning Discussion						
Yes	32	82.1	19	79.2	33	91.7
No	7	17.9	5	20.8	3	8.3

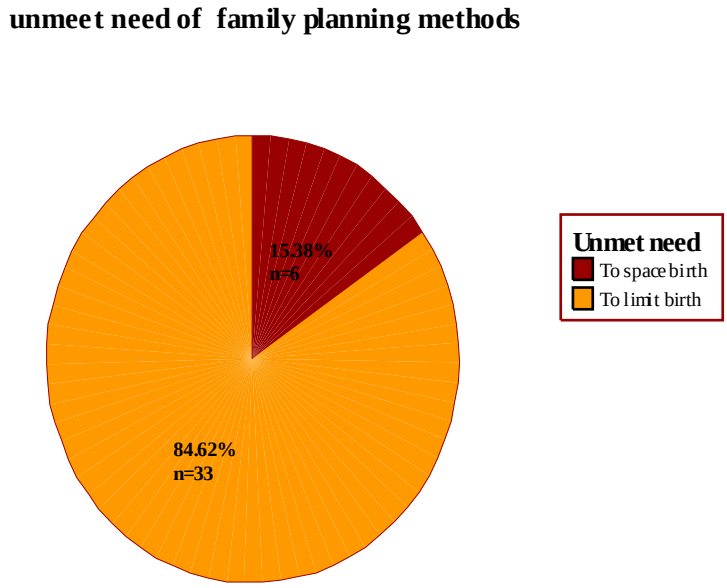

Fig 3. Show unmet need of married/live together women's for spacing and limiting birth among PLWHAs on ART, Felege Hiwot Hospital, Bahir Dar, 2008.

In bi-variant analyses of current family planning use sex, marital status, education and family planning discussion with the provider showed significant association with current family planning use ($p<0.05$). Where as number of children one had and period of ART follow up has no association ($p> 0.05$). But in multivariate analyses marriage/living together, divorce/ widow and who can read and write showed significant association with current family planning use($P<0.05$) with Adjusted OR 3.67 (95%CI:1.48-9.08) , 0.30 (95%CI: 0.10_0.90) and 3.76 (95%CI:1.26-11.22) respectively.

Table 9. Associated factors for current family planning use among PLWHA at Felege Hiwot Hospital, Bahir Dar, 2008.

Variables		current family planning user			
		Yes Number (%)	No Number (%)	Crude OR(95%CI)	Adjusted OR(95%CI)
Sex	Male	55 (33.7)	108 (66.3)	1	1
	Female	46 (22.7)	157 (77.3)	o.57(0.36-0.91)	0.75(0.40-1.41)
Education	Literate	65 (25.5)	171(72.5)	1.49(0.82-2.74)	1.12(0.53-2.40)
	Can read and write	19 (41.3)	27(58.79.9)	2.77(1.26-6.13)	3.76(1.26-11.22)**
	Illiterate	17 (20.2)	67 (79.8)	1	1
Marital status	Single	11 (14.7)	64 (85.3)	1	1
	Married/live together	79 (50.6)	77 (49.4)	5.97(2.93-12.17)	3.67(1.48-9.08)**
	Divorce/widow	11(8.1)	124 (91.9)	0.52(0.21-1.26)	0.30(0.10_0.90)**
FP discussion	Yes	91(29.8)	214 (70.2)	2.1(1.06-4.46)	2.05(0.81-5.17)
	No	10 (16.4)	51 (83.6)	1	1
NO of Child	no child				
	Has child >=1	32 (28.6)	80 (71.4)	1	1
		54 (35.1)	100 (64.9)	1.35(0.76-2.29)	1.37(0.73-2.56)
Period of ART follow up	< 12 month	69 (30.1)	160 (69.9)	1	1
	>= 12 month	32(23.4)	105(76.6)	0.7(0.44-1.15)	0 0.54(0.28-1.04)

** significant P< 0.05

5.2 Qualitative study result

Total of 12 respondents were interviewed 6 male and 6 female. Their age ranges from 25 to 40. Six of the respondents attend at least elementary education and the rest are illiterate. And six of the respondents were married.

5.2.1 Fertility intention

Most of the respondents had no an intention of child and few had an intention for at least one child. Those with intention of child have it because they want to replace their heredity, to care of them during illness and old age, to hand over their property, their partner wants and simply love of child. Even if they have the intention still they have fear for their health and possibility of giving birth HIV free child. A woman explained:

yes I have desire, if possible I will be happy if I have 2 child and if I do it now and the ART drug does not affect my health. I like to give birth because like the others, I want to see the copy of my self. It may not be good for the disease that I have now. When I give birth there might be bleeding which followed by death. Despite of that I am a carrier, giving birth has no use because I may live or die. I think probability of living is less. If I get cured we will give birth and my partner wants. Now he is abstained.

Married, 25 years old 10th grade and with no child

Another woman also explained:

I have great desire to give birth because I am young and have only one child. When I married I give birth. So replacing one self is good. I want 2 more child I love child not for other reason.

Divorced 26 years old, 10thgrade and have one child

Despite they perceive as birth has problem, they have an intention. A man told:

I want to give birth, my wife wants when she sees her friends. She has the desire to give birth at least 1child. Giving birth has no use. I do not know as to me I guess that we could not give birth and the majority of the community but I do not know the exact thing.

35 years old, married and has no child

Majority who do not have an intention to have child put their reason as they want to keep their health, their low income no chance of bearing and fear of leaving the child with out parent. A man explained:

I have no any desire. It does not go with my economy and illness. I do not want now onwards rather I should support my children to learn. But if I get comfortable time, giving birth has no any problem.

Married 40 years old,7th grade and with 4 child

Another man also explained:

I don not want because it is ugly. It is exposing the child for HIV. It has problem the child may left with out parents. If the God heard me and my child is free, I want to bear only this child by caring his health.

Married 28yrs old and illiterate who has one child.

5.2.2 Family planning use and demand

Majority of the respondents who were married / live together were using family planning methods. The method choices for most of respondents were shifted to condom from other contraceptive methods, mainly injection and pills. A man explained:

Yes, I am using. Before test we had been using injection and pills. But after diagnose we use condom. Pills do not suit to her health so we use condom.

Another woman also claimed:

Before I test I used to take pills and injections but after that I was abstained most of the time. When I did sex I use condom. I use condom to prevent pregnancy and to avoid cross infection. I do not want to use other contraception in the future.

30 yrs old, married, illiterate and has four child

The others who have no partners were abstained from sex and were not using contraception. A woman said:

I am not using now and I have no any intention in my mind to use it. Unless it is a mistake of the day, I convince my self not to marry.

Widowed 25 years old and has one child

A few who were not using contraception have a plan to use after they get married. A man said:

I have intention to get married and using family planning. The method of contraception is her choice.

single 4th grade and with one child

5.2.3 Counselling on family planning

The counselling with ART provider focuses on condom utilization, this mainly done for those who had partner. A woman explained:

Yes, I was counselled. They were advising me to use family planning method which suits to my health. And they told me that it was good to use condom but your partner is not willing, it is better to use injection.

30 yrs old married and has four child

A few were counselled to use condom together with other contraception, namely injection and pills. A woman claimed:

They said me to use additional methods but I do not want to use it. Because I do sex sometimes and it does not go with my illness.

Married, 28years old and with 2 child

A woman with no partner said:

Up to now there is no counselling about family planning because when I tested I have no partner. When I want to start, I have to consult them.

Female, divorce, 10th and has 1 child

5.2.3 Coping pregnancy

A number of respondents were insisted on pregnancy not happen to them. The others if in case they get pregnancy they will give birth. They put medication as an option to use to prevent mother to child transmission. A man explained:

If pregnancy happens, we simply receive what the God offer us. We have no option. But I tried my best to have follow up for family planning to avoid pregnancy. The medication also prevents transmission as I witnessed from my friend and neighbours experience.

28yrs old married, illiterate and has one child

5.2.4 Knowledge about mother to child transmission and prevention

Majority of the respondents know that as HIV can transmit from mother to child. The time of passage which was listed by the respondents was during pregnancy, breast feeding and delivery in order of their frequency. A few were list sharp materials and blood

contacts which is universal. By most of respondents' medication was emphasised as means of prevention and stop breast feeding also reported. The drug was not uniformly

understood by respondents some say vaccine during pregnancy and the other called drug during pregnancy or delivery. A woman Reported:

Yes, it passes by breast feeding. Apart from this following the treatment and consulting a doctor before pregnancy if there is a thing necessary for it. To my side the medication is good up to now. I am confident with the treatment as it can reduce the transmission.

Divorced ,10th grade and has 1 child

Another woman also explained stop breast feeding as means of prevention.

Yes, it transmits. I think it is during pregnancy and breast feeding. If she gave additional food, it affects the child gut and cause wound so the child will get infected. I do not know prevention methods but I had the information only breast feed up to 6 month, follow up and care during delivery can reduce the transmission.

28yrs old married women with 2 children

The others also reported as HIV passes from mother to child, with out specifying the prevention method they have perception that consulting doctors can reduce the transmission. A woman said:

Yes, it passes during pregnancy, delivery and breast feeding. To prevent transmission consulting a doctor is good. It can decrease transmission to some extent.

Married illiterate, and has no child

5.2.4 Attitudes towards child bearing

Most of respondents told as child bearing has no use rather as the disadvantage outweighs. They list its disadvantage which could not be replaced soon, the child suffer with psychological trauma once he/she loss their family with HIV as there is bleeding during, the child may get infected if the drug not taken properly and HIV positives stop birth HIV also decreases. A man explained:

If the parents are healthy it is good otherwise the illness affects their health severely. Some females may not use drug properly so the child may get infected. Even if they get free child with out parent, it is nonsense. So that giving birth is impossible and not good.

28 yrs old, married, illiterate and has 1 child

Another man also told:

The child will suffer when he/she losses their parents love. It has great psychological trauma once they loss their parent with HIV.I prefer to avoid birth except for their psychology of replacing them self, only to care their health.

They can give birth if they have no any.

Married, 40 yrs old and has 4 children.

6. Discussion

The study tried to assess fertility intention and family planning use in HIV positive people who are in follow up care. Twenty two percent of positive individuals (25.8% male and 18.2 % women) within the reproductive age have an intention to have child. And 27.6 were using contraception, 44% want to use family planning in the future and 22.0 % married women has unmet need.

The study in US found 45 % of positive women and 36 % of men expressed the desire for children. This figure is higher than our findings. This may be due to awareness about PMTCT and availability of technology in developed countries. The study in Lesotho also shows 38.7 % of women have intention of children but in ours 18.2 % of female had an intention of children. This might be the study subjects for our case were those who are at ART follow up where they could get information about PMTCT and other information. The study in Addis also shows 40.2% of PLWHA had desire for child which was higher than this finding. This probably due to trend change in awareness of peoples about mother to child transmission of HIV/AIDS (13). Even if the figure is low when compared with other studies HIV with out intervention has 25-50 % risk of transmission from mother to child and in combination of PMTCT method it can be reduced to 2%. But the less availability of facility for caesarean section, ARV treatment and safe breast substituting foods and the literacy to follow the instructions will keep high figure of vertical transmission.

PLWHA whose CD4 count< 200 had intention to child were 28.6%. This is a range recommended to start ART treatment and the viral load at this time is high, that would increase rate of vertical and heterosexual transmission. Few 17.9% people who had discordant partners had an intention of child. This also contributes for vertical and heterosexual transmission of HIV.

The important predictor associated with fertility intention identified in this study is number of children. Those who have no children 13.9 (95%CI: 3.6-54.27) times more likely to intend children than those who have at least one children, similar to a study in Addis Ababa, Lesotho and US having no children had positive association with child desire. This is attributed to the socio culture norm that reflects as they need to replace their heredity and it is natural to have their own biological child. This is also shown in qualitative findings that those who want child to replace their heredity ,to hand over their heredity , love of child and who will take care of them during when they are weak and ill. Besides 17.6% discordant has an intention to have child and 46% of PLWHA who did sex before nine month of the study period, did not use condom. This findings increase probability of HIV positive births. More over the inherent tragedy of maternal death, maternal death due to the virus can seriously compromise the survival of the child and HIV related ill health and death among mothers is likely to undermine gaining in child survival achieved by ART prophylaxis for preventing mother to child transmission and other efforts to attain the MDG goals regarding to child survival.

Other predicting factor associated with fertility is period of ART follow up. This is similar to studies done in Zurich where ART is positively associated with fertility desire (11). Those on ART more than the median time (a year) 4.33(95%CI: 1.35-13.9) times more likely to intend children than those who are at ART less than a year. But the CD4 count and health condition has no association with fertility intention it is the same to the case of Zuric. This implies those who stay more on ART they believe that with medication birth is possible which is supported by qualitative finding. This implies those who stay long period on ART may have at good state of health and emotion besides their sexuality and social demand will be restored so that they have an intention of child.

The PLWHA even if they are on ART they are still with less life expectancy than HIV negatives. This will result in a number of orphaned children who are going to be a victim socially, economically, psychologically and academically like being street and less access to education and the like. So they will be burden rather than being productive nation for the country. Moreover, Even if the treatment reduces the viral load and vertical transmission, still there is an implication for the vertical and heterosexual transmission of HIV.

Reason for their fertility intention in 91.1% is to replace their heredity and 5.1 % is because of their partner's desire. This agrees with the qualitative finding. It is the socio cultural norm of Ethiopians that appreciates replacing oneself before their death. In addition an immediate effort of providing ART to the general population increases HIV prevalence by reducing mortality. This includes woman of reproductive age and the fertility of those HIV positive women increases which in turn increases the number of children born to HIV

positive mother and an intention to have children. However another effect of providing ART to mother is to reduce rate of mother to child transmission.

In this study family planning use and future need to use was assessed together with fertility desire. Family planning has paramount importance for HIV positive individuals to space or limit births and to avoid unintended pregnancy irrespective of fertility desire. Avoiding unintended pregnancy among HIV positive women helps to optimize their required family size and support to exercise their reproductive right. On top of these, it is one way of reducing vertical transmission.

The study shows current contraceptive prevalence of 21.4 %. According to EDHS 2005 Amhara region and national current contraceptive prevalence are 16.1 and 14.7 which are slightly lower than this. This implies People who learn their HIV status as being positive are likely to regulate their fertility. The study also found 27.6% contraception use during the study period among all respondents but the study in Addis Ababa among PLWHAs doubles it (53.7%). Half of the respondents ever used at least one method of family planning and a sizable proportion of persons had been using injection followed by pills 29.2% while few 11.9 % condom before they had HIV testing. But after testing the number of users were declined by half 27.6 %. These probably due to emotional instability immediately after HIV test and these people need more help especially after knowing their HIV status. The study in Addis Ababa shown ever used of family planning before test were 48.9% and after test 43.3 % It indicates the continuity of family planning is far better than this study. This might be the availability good quality counselling and integration of VCT and ART services with RH services.

The method choice after test for a majority were condom 50.0% followed by injection 31.7% and before test majority who use family planning were taking injection 52.5% followed by pills 29.2%. More over, 44% of those who were not using family planning method have an intention to use it. And their major choices were dual method (44%) and condom (24 %). It also reflects the presence of method switch from others to condom. Significant proportion respondents reported that they used condom to prevent cross infection. Even if condom is one method of family planning it is better if complemented with other family planning methods to boast its effectiveness in preventing unintended pregnancy.

Over 90 % of PLWHA responded that HIV can be transmitted from mother to child and the majority listed at least one method of transmission except 1.8% of respondents who could not list any. Twenty nine percent 0f respondents were not using family planning but intended to use to space birth. And 65.1% of respondents reported as medication can prevent mother to child transmission. The same response was echoed in qualitative finding as HIV positives can give healthy baby by taking drugs properly during pregnancy and delivery. This also has an implication for vertical, heterosexual and cross infection of HIV. Although PLWHA has right of reproductive choice like others, medication should be coupled with other PMTCT methods, even if children of HIV-infected mothers who had been treated with zidovudine around the time of delivery were about 25% less likely to be HIV-positive, it demands availability and affordability of drugs and breast substituting foods as well as accessibility of C/S facilities. This all adds requirement for additional resource and costs which are limited in low income settings like Ethiopia.

Marriage/ live together is an important factor which has an association with family planning use. Those married/ live together were 3.67(95%CI: 1.48-9.08) times more likely to use family planning than their counterparts. Those with out regular partner might do sex rarely or abstained and they perceive less risk of getting pregnancy.

The other important factor which associated with family planning use is widow/divorce. Those widow/divorce has 0.30 (95%CI: 0.10-0.90) times less likely to use family planning method than singles. This probably due to stigma and discrimination which affects their sexuality and those who loss their partner may be affected emotionally and it has effect on their sexuality and might be on use of contraception. In addition another predictor is identified were those who can read and write 3.76 (95%CI: 1.26-11.22) times more in using family planning method than their counterparts. These peoples might have information about family planning and want to optimize their number of child.

Meeting the unmet need of family planning helps to satisfy the reproductive right and health of PLWHAs. Women who are HIV infected are always vulnerable to unintended pregnancy and also any women who are with unmet need for family planning are either infected or at risk for HIV infection which contribute to the incidence of maternal to child transmission .

The current study shown 22.0% of unmet need among married/ live together. In Lesotho DHS it is 29.2% for those who learn their HIV status was positive, it is with little difference. In Lesotho respondents with less education, have Knowledge on MTCT and older have higher unmet need. Women Knowing MTCT of HIV similarly have to the case of Lesotho

had high unmet need but to the opposite of Lesotho age between 30 to 39 years old and being literate have higher unmet need in this study. This probably implies education, being young induce motivation to regulate fertility but might be less accessibility of contraception or misconception in using of contraception together with ART treatment. This has an implication to have high number of unintended birth from HIV infected mother and probably HIV positive births which increase the cost of health for the country. Persons who were discussing about family planning with ART provider and person who has concordant partner had 81.3 % and 82.1 % of unmet need respectively. This indicates a risk of unintended pregnancy for those who want to limit or space births. The discussion about family planning opens a road for family planning demand and a place for family planning use. If the partners are both positive there might be disclosure that easies family planning use.

In EDHS shows 33 % unmet need of family planning and as high as 36% in high HIV prevalent areas of Africa which are higher than this study. In this case the respondents all are HIV positives and most of them may abstained give more attention to their health than regulating their fertility. Future efforts in linking FP with HIV/AIDS interventions should aim at filling this gap through evidence based information to explore what family planning options are demanded by PLWHAs and nationally not only the demand of methods by PLWHAs but also the practical issue in administering Family planning options. Other variables like education and knowing HIV can be transmitted has an undermined contribution in creating the demand. Those with intention to give birth also have significant proportion of unmet need which might help them to avoid unintended pregnancy and to space their child.

7. Strength and limitation of the study

Strengths

- The study is complimented by qualitative studies which help to explore information further.
- It is one of the studies exploring the fertility intention and family planning demand among HIV positive individuals under ART treatment. It gives insight and helps to identify intervention areas to prevent HIV transmission.

Limitations

- Sample bias- study participants were recruited at ART treatment unit using quota sampling. Thus the result lacks reprsentativness and external validity can not be achieved.
- Selection bias- even if the sampling method is non random, the data collectors may select persons who can communicate with them easily.
- Social desirability bias- even though the data collectors trained on confidentiality and respondents right and to read the consent form before they start an interview. The respondents might have given a desired answer by the counsellor or health provider.

8. Conclusion and Recommendation

8.1. Conclusion

- The present study showed that a high number of HIV positive men and women have an intention for child.
- A sizeable proportion of PLWHAs were actively involved in recent sexual activity.
- Reproductive decisions in HIV positive individuals are not only affected by their HIV status but depend on different factors especially absence of child and longer duration on ART.
- In general those who intended children are those who have no children and follow ART more than a year.
- Large numbers of HIV positive individuals have unmet need which showed broad demand.
- The choice of family planning method changed from hormonal ones before HIV testing to condom after knowing HIV sero-status.
- The most prevalent family planning method among HIV positive individuals were condom and those who intended to use planned dual method.
- In general those who use family planning were married /live together and can read and write.
- There is significant proportion of drop out in using contraception after learning their status.

8.2 Recommendation

- The counselling services should emphasize on the meaning of the fertility desire within the particular context of being sero positive and the need to take in to account not only the risk of transmission to the child but also of the difficulty of combining being a parent with the constraint of their illness. However considering the high value put on child bearing by Ethiopian society, it may be wise to apply systematic advise against pregnancy, but in addition to laying emphasis on the risk, provide adequate information on practicable reproductive options for individuals affected by HIV. This would assist them in making an informed reproductive choice rather than risk taking.
- The counselling service should emphasize on couples counselling to promote family planning use and responsible reproductive decision among partners.
- The family planning counselling should promote on consistent and proper utilization of condom and dual method should be emphasized to reduce condom failure, to prevent cross infection and to avoid unwanted pregnancy. Other contraceptive methods should also come in to discussion to provide varied options for PLWHA.
- The issue of linking Reproductive Health with HIV/AIDS interventions deserves attention and ART clinics can best be integrated with RH counselling and service provision in safeguarding the health and welfare of PLWHAs and the potential child.
- There is a need to device family planning counselling mechanism at VCT and ART rooms
- Further studies should be conducted in the hospital and out side the hospital set up and in different parts of the country to come up with more representative findings. In addition the issue should also need to be assessed from different community group's perspectives.

Reference

1. WHO, USAID. AIDS Epidemic update: especial report on HIV Prevention. WHO/ USAID, 2005.
2. WHO.HIV/AIDS Epidemiological Surveillance for WHO African region 2005 Update. Zimbabwe, 2005
3. Disease prevention and control department. AIDS in Ethiopia 6th report. MOH, Addis Ababa, 2005.
4. HAPCO. Report on progress towards implementation of the Declaration of Commitment on HIV/AIDS. Federal Democratic republic of Ethiopia; Ethiopia, 2006.
5. MOH, FHAPCO. Single Point HIV Prevalence Estimate. Ethiopia 2007. Available at http:// www.etharc.org/aidsineth/publications accessed on June 2008.
6. Central Statistics Agency. Ethiopian Demographic and Health survey 2005. Addis Ababa, 2005.
7. Theree D. Reproductive choice for women and men living with HIV. Reproductive Health Matters 2007; 15(29): 46-66
8. Ranjan S. Fertility and Desire for Children among HIV infected persons with especial reference to Mumbai. Available at http:// www.infoforhealth.org Accessed on September 2007.
9. Elizabeth A, Ellen G. prevention of mother to child transmission of HIV in Africa: Apractical Guid line for programmes .SARA,USAID, 2001.
10. Engender health preventing HIV/AIDS through Family planning in gender Health improving women's Health world wide. Available at http://www. HIV aids clearing house.unesco.org. Accessed on September 2007.
11. Chen J.Kanouse D, Cllins R and Maul A. Fertility desire and intention of HIV Positive men and Women. Family planning perspective2001; 33(4):144-165.

12. Laure P, Mannual B, Andre F etal. High Risk sexual behaviour and two Challenging issue. SWISS MED WKLY 2003;133:124-127

13. Tim Adir. Desire for children and unmet need for Contraception among HIV Positive Women. DHS working paper Demography and Health Research,no2, Lesetho, 2007.

14. Temam W .Fertility desire and Family planning demand among HIV positive men and women in ART follow up care in Addis Ababa. Master thesis Addis Ababa University, 2006.

15. Population action International. Family planning: crucial information for HIV Positive Women, Fact sheet;35 series.

16. UNAIDS, WHO, AIDS Epidemic update special report on HIV, Family planning needs in the context of HIV/ AIDS epidemic: country assessment. Zimbabwe, 2004.

17. Reproductive health matters. Reproducing mother to infant HIV transmission in developing countries. Reproductive health matters 1998, 6(12):178-178.

18. Back C., Naomi R., Kaais, Geibels etal. Addressing the Family planning need of HIV Positive PMTCT clients: Baseline findings from an operation research study. Hoirzon research update, population council 2005.

19. Alice C. Frank R, Jana D .Reproductive choice making for couples affected by HIV: review of literature. View reproductive decision making 2004;12(issue 2).

20. MOH and HAPCO.HIV care and ART monthly update. MOH and NHAPCO Ethiopia, 2007.

21. Amhara regional HIV/AIDS prevention and secretariat and ART. http://www.etharc/amhara/.org

22. Ronald F. Do family planning programme affect fertility preference: Literature Review. Study in Family Planning 997; 28(1):1-13.

23. Eborah S., victor D. Anew perspective on the definition and measurement of unmet need for contraception. International family planning perspective1999;22(4): 140-147.

24. Stan B, Measuring unmet need: wife's, husbands or couples. International family planning perspective1999;25 (4):172-180.

25. Andrew D,Thomas J.,Olga A,Etal.HIV infection and Pregnancy status Among adults attending voluntary counselling and testing in two developing Countries .American Journal of Public Health 2002;92(11):1795-1800.

26. UN, United Nations Department of Economic and Social Affairs Population Division. World contraceptive use. USAID, 2004. Available at http://www.un.org/esa/population/publications/contraceptive2003/wcu2003. htm, accessed 31 March 2008.

27. Sonneberg-schwan U, Gilling- smith C, Weigel M. HIV and wish for parenthood. HIV medicine 2005.

28. Laurie F. Higher Community HIV Prevalence Predicts Higher Recent Marital Fertility in Kenya. University of Maryland, 2005.

29. Family Health International (FHI). Contraception for women and couples with HIV. Research Triangle Park, 2005.

30. USAID. Methods and assumptions for estimates of children in need of treatment for HIV, Report of a meeting of the UNAIDS Reference Group for Estimates, Modelling and Projections, March 2nd 2005.

31. Remez L. Perinatal HIV Infection is Reduced by Drug Therapy and Planned Cesarean. Family Planning Perspectives 1998;30(6): 296-297.

32. Klitsch M .Treatment of HIV-Positive Pregnant Women Lowers Infection Risk of Infants. International Family Planning Perspectives 2002; 28(3): 180-181.

33. Stringer E, Chi B, Chintu N, Creek TL, Ekouevi DK, Coetzee D et al. Monitoring effectiveness of programmes to prevent mother-to-child HIV transmission in lower-income countries. *Bull World Health Organ* 2008; 86(1): 57-62.

34. USAID. Family Planning/HIV Integration Technical Guidance for USAID-Supported Field Programs, FP/HIV AIDS technical guidlined 2003.

35. Charlotte W. Strengthening Family Planning Services through Operations Research, USAID, April 2008.

36. Sonneberg-schwan U, Gilling- smith C, Weigel M. HIV and wish for parenthood. HIV medicine 2005.

Annexe I Quantitative Questionnaire (English)

Addis Ababa University- Faculty of Medicine,

School of Public Health Individual consent form

A study on fertility intention and family planning utilization in HIV positive people on ART follow up care in Bahir Dar, Amhara National regional state.

My name is ---------- I am a part of research work team of Addis Ababa University at hospital and health centres on HIV positive people who are on ART Follow up care. The research will assess the fertility intention and family planning utilization of people living with HIV/AIDS. The study does not cause any harm other than expensing you a few minute for interview. I would also like to assure you about the confidentiality of information and the information will only be used for this research. You have full right to reject, to participate or to interrupt the interview at any time.

The information that you will give us is very important to meet the objective of study to bring changes on fertility and family planning service provision and, program implementation and policy formulation for people living with HIV/AIDS.

Are you willing now to participate in the study?

If you are willing, we can continue.

Thank you

If they are not willing, do not force people to participate in the survey.

Thank you

Interviewer name---------- signature ----------

Date of interview ---------- Supervisors name ---------- signature----------

Checked on date----------

The out come is (thick one)

Complete_____

Incomplete_____

Other, specify_____

I. Socio-demographic characteristics

Ser.No	question	Responses	skip
Q101	How old are you	----------	
Q102	Sex of respondents	Male Female	
Q103	religion	1. Orthodox 2. Catholic 3. Muslim 4. Protestant 89. Others , specify ----------	
Q104	Educational level	1.grade completed---- 2. Able to read and write 3. Un able to read and write 99. No response 89.Other,specifty----	
Q105	ethnicity	1. Oromo 2. Amhara 3. Gurage 4. Tigray 89. other specify ----------	
Q106	Marital status	1. Married 2. Single 3. Widowed 4. Divorced 5. Non married partner 99. No response	

Q107	Occupation	1. student 2. merchant 3.house wife 4. daily labourer 5. farmer 6. commercial sex Worker 7. Government employee 8. private employee 89. other ,specify----------	

Part II. Information on Fertility intention

Q108	Have you ever give birth?	1.yes 2. no----------	115
Q109	How many live births have you had?	1. ----- no of children 2. I do not have any live birth 89. Other, specify ----------	
Q110	How many children do you have now?	1. give the number ---------- 2. do not have Children at all 3. do not have alive births 99. no response 89. other specify ----------	
Q 111	Did you give birth after you learn your HIV status?	1.yes 2. no 89. if other specify ----------	
Q112	What is the age of your last child?	----------	
Q 113	Did you use family planning during your last pregnancy?	1 yes 2. No	
Q 114	Was your last pregnancy wanted/timed?	1 yes 2. No 3. no response 89.other specify ----------	
Q115	Do you/your partner pregnant now?	1. yes 2. no 3. I do not know	

Q116	Do you have an desire children in the future?	1. yes 2. no---------- 3. do not know 99. no response 89. other, specify ____	120
Q117	If the answer is yes for Q 116,How many childrens do you intended to have in the future	1. write the number ----------	
Q118	If the answer is yes for Q116,why you need to give birth?	1. to hide from people 2. to avoid stigma and discrimination 3. to replace my heredity 4. to hide from my partner 5. my partner wants 89. other specify, ----------	
Q119	The answer for question no 116 is yes, when do you prefer to have children	1. before ayear 2. with in two year 3. after two year 4. when I feel healthy 5. when CD4 corrected 6.As it happens 7.DO not know 89. other specify ----------	
Q120.	what will you do if in case you are pregnant?	1. I give birth by consulting health providers 2. simply I give birth 3. abort 89. other specify ----------	

PART III Information on family planning utilization

Q121	Have you ever used family planning method before HIV diagnosis?	1. yes 2. no . 3.I can not remember 4. no response 89. other, specify ---	
Q122	If for question no 121 answer is yes, what type of contraceptive have you were using?	1. abstinence 2. condom 3. pills 4. injectable 5. implant 6.tubaligation/vasectomy 89. other, specify---	

Q123	Have you ever used family planning method after you know HIV status?	1. yes 2. no 99. no response 89. other, specify_____	
Q 124	Have you discussed about RH topics with your Counsellor?	1 yes 2. No 89. other specify ----------	
Q 125	If yes, What RH topics discussed during counselling?	1. clients fertility intention 2. current contraceptive use 3. mother to child 4. dual method 5. condom utilization 89. other specify ----------	
Q126	Have you discussed about family planning with your provider?	1. yes 2. no 89. if other specify ----------	
Q 127	If yes, what type of method have you been Counselled?	1. abstinence 2. condom 3. pills 4. injectable 5. implant 6.tubaligation/vasectomy 89. other, specify---	
Q 128	Have you been given any family planning service at ART clinic?	1. yes 2. no 3. no response	
Q 129	If yes what family planning method have you been offered?	1. abstinence 2. condom 3. pills 4. inject able 5. implant 6. tubaligation/vasectomy 89. other, specify---	
Q 130	If no have you been refered to use family planning methods?	1.yes 2. no	
Q 131	If yes where have you been referred?	1.family planning clinic in the same facility 2. family planning clinic in another service 3. FGA/FP clinic 3. others specify	

Q132	Are You/your partner using family planning method currently?	1 yes 2. No---------- 3. no response 4. I do not know	132
Q133	If the answer for question number 132 is yes, what type of method you have used?	1. abstinence 2. condom 3. pills 4. injectables 5. implant 6.tubaligation/vasectomy 89. other, specify---	
Q134	If the answer for Q 132 is yes, why you choose the current contraceptive?	1. health professionals Preference 2. because it suits to my health 3. from my friends experience 89. other, specify------	
Q135	If you are using family planning method did you disclose your status for the provider?	1. yes 2. no 89. other, specify----------	
Q 136	If the answer for Q 135 is no , why do not you disclose?	1. I have no trust on the provide 2. I fear stigma and discrimination 3. I do not want the help of provider 99. no response 89. other, specify ----------	
Q137	If the answer for Q 214 is no, why do not you use family planning method?	1. fear of side effects 2. my partner is not agree 3. I have no partner 4. I want to give birth 5. I am using condom 89. other ,specify	
Q138	If the answer for Q 213 is no, do you/your partner intended to use family planning method in the future?	1. yes 2. no ---------- 3. I do not know ---------- 89.other,specify	Part IV Part IV
Q139	If it is yes, when do you want to start using the method?	1.now 2. with in six month 3. with in a year 4. after a year 5. I do not know	

Q140	If the answer for Q 217 is yes, What type of method you intended to use?	1. abstinence 2. condom 3. pills 4. injectables 5. implant 6. tubaligation/vasectomy 89. other, specify---	
Q141	Why you want to use family planning method?	1. to space birth 2. to limit the number of child 3. to stop birth 4 to avoid birth 89. other specify ----------	
Q142	Where do you prefer to get the service?	1. At ART treatment unit 2. In government facility FP unit 3. government facility in other place 4. private clinic 5. FGA/clinic Other specify 89. other, specify----------	

Part IV: Information on PMTCT

Q143	Can HIV transmit from mother to child?	1. yes 2. no ---------- 3. do not know 99. no response 89. other, specify ----------	Skip part V
Q144	If the answer is yes for Q 303, when it occurs?	1. during pregnancy 2. during labour 3. through breast feeding 4. I Do not know 89. other, specify------	
Q145	How much do you think the risk of HIV transmission from mother to Child?	1. All children will infected 2. half of children Infected 3. I do not know 4. no response 89. other, specify------	
Q146	Do you know any method that prevent mother to child transmission?	1. yes 2. no 3. I do not know 89. other specify --------	

Q147	If the answer for Q 305 is yes, what is the method?	1. using medication 2. Stop breast feeding 3. C/s delivery 89. Other specify------	
Q148	If your answer for Q 305 is yes, do you think it actually reduce the transmission?	1. yes 2. no 3. I do not know 89. other specify--------	

Q149	Where do you get the information about mother to child transmission?	1. mass media 2. health provider 3. friends 4. PLWHA association 5. Home care providers 89. other, specify -----	

Part v: Information on VCT and ART

Q150	How long since you did HIV diagnosis?	1. write the time------- 2. do not remember 89. other, specify	
Q151	How long have you been receiving ART treatment?	1. write the time------ 2. I do not remember 99. No response	
Q152	How was your perceived health condition after you start receiving ART?	1. improved 2. no change 3. deteriorated 99 no response 89. other, specify--------	
Q153	How much is your recent CD4 count?	----------	
Q154	Did your partner get tested?	1. yes 2. no 3. I do not know	
Q155	If the answer for Q 149 is yes, what was the result?	1. Positive 2. negative 3. no response	
Q156	The answer for Q 148 is no, what is the reason?	1. because I tested 2. I did not disclose 89. other ,specify ---------	

PART VI: Information on sexuality and Condom use

Q157	Did counsellor Art provider discuss about sexuality, child bearing and family planning?	1. yes 2. no 89. other specify ----------	

Q158	If the answer is yes for Q 147, did the provider adequately cover the issues?	1. yes 2. no 3. I do not know 89. other, specify----	
Q159	If the answer for Q 146 is no ,would you like to discuss with the provider?	1. yes 2. no 3. I do not know 99. no response	
160	Have you had sexual intercourse in the past nine months after diagnosis?	1. yes 2. no ---------- 3. I did not remember-----------	Skip to 165 Skip to 165
161	If yes have you used condom?	1. yes 2. no ---------- 3. I do not remember 89. other specify---	Skip to 164 Skip to 164
Q162	IF yes for Q 149, How often you use?	1. Always 2. Some times 89. other specify-------	
Q163	If the answer for question no 153 is yes, why you use condom?	1. To prevent pregnancy 2. to prevent other STD 3. my partner HIV status is negative 4. healthcare provider advice me to use condom 5. to prevent cross transmission 89. other, specify--------	
Q164	The answer for Q154 is no, why did not use condom?	1. I want to have children 2. my partner status is positive 3. my partner does not like it. 89. other, specify--------	
Q165	did you practice multi partner sex?	1 yes 2. No 3. no response	
Q166	How often you have used condom with all the sex partners?	1. Always 2. sometimes 3. I never use 4. Other specify ----------	
Q167	Do you have any history of abortion in your life?	1 yes 2. No 3. no response	

Q168	If yes for Q 167, when was the time?	Write the time ----------	
Q169	Do you/your partner have/has any history of STI ?	1 yes 2. No 3. no response	
Q170	Do you know about emergency contraceptive?	1. yes 2. no	
Q171	Do you use if you given emergency contraception?	1. yes 2. no	

Annex II. Quantitative questionnaire (Amharic)

			/

!

:

/ ? ? ----------

HIV

à

?

☐ ☐

[

---------- ----------

---------- ----------

( )

_____

_ ___

1.

101	°ÉT@	----------	

102	ï	1. 2.	
103	NÃT•ƒ	1. *`„Êie 2. "„K=¡ 3. S<eK=U 4. –a,e ”ƒ 89. K?L "K ÃÖke ----------	
104	¾ƒUl`ƒ Å[Í	1. ÁÖ“k ¡ ---------- ----- 2. T”uw“ Síõ ¾T>‹M 3. T”uw“ Síõ ¾TÃ‹M 99. SMe ¾KU 89. K?L "K ÃÖke ---------- -	
105	wN?`	1. *aV 2. ›T^ 3. Ñ<^Ñ@ 4. ƒÓ_ 5. K?L "K ÃÖke ----------	
106	¾Òw‰ G<’@	1. ÁÑv/ 2. ¾ð /‹3. Á Ñv/ 4. ¾ / 5. ›w[¨< ¾T>•\ 89.	

107	/ ¾Y^ É`h	1. ’ÒÈ 2. Ñu_ 3. ¾u?ƒ Su?ƒ 4. }T] 5. ¾k” W^}— 6. Y^}k×] 7. ¾S”Óeƒ W^}— 89. K?L "K ÃÖke ----------	
		----------	

2 ¾S¨<KÉ õLÑAƒ ¾}SKŸ

108	MÐ ;	1. 2. -------- --------	**115**
109	ulÃ¨ƒ ¾ e”ƒ ;	1. lØ^†¨< ÃÖke -- ------- 2. uQÃ¨ƒ ¾}¨KÅ ¾K˜U 89. K?L "K ÃÖke ----------	
110		1. ¾MÐƒ w³ƒ Öke ------- 3. ulÃ¨ƒ ÁK MÏ ¾K˜U 4. SMe ¾KU 5. K?L "K ÃÖke ----------	

111	à =	1. 2. 3. ----------	
112	¾SÚ h MÏ °ÉT@ e”ƒ ’¨< ;	----------	
113	h	!. › 2.	
114	h	!. › 2. 3. 89. ----------	
115	/ /	1. 2. 3.	
116	K? MÏ/ ”Å•` ÃðMÒ	1. › 2. ›MðMÓU---------- 3. ›L¨<pU 89. ----------	**120**
117	116	----------	
118	. 116	1. 2. 3. 4. 5.	

		89.	
119	. 115 › ¾ J	1. 2. 3. = 4. 5. CD4 4. 5. 89. ---------- -------	
120	/	1. 2. 3. 89. _____	

3 ¾ }SKŸ

121	. . ª uòƒ ¾ } Á¨<nK<;	1. › 2. ¾KU 3. ›L¨<pU 4. S ¾KU 89. K?L "K ÃÖke ---------- ---------	
122	K lØ 121 S › ŸJ' U" ¯Ã'ƒ ¾ `Ó´"	1. S kw	

	SŸLŸÁ c=ÖkS< ; ( )	2. ¢”ÊU 3. ¾¨K=É Sq×Ö]Á 4. ”¡wM 5. S`ô 6. ¾T>ku` 7. 89. K?L "K ÃÖke ----------	
123	. . SJ ” "¨k u L ¾ ÖpS¨< Á¨<nK<;	1. › 2. KU 89. K?L "K ÃÖke ----------	
124	/	1. › 2. KU 89. K?L "K ÃÖke ---------- --	
125	( )	1. 2. ¾ 3. 4. 5. 5. ---------- ---------- -	
126	/	.1. › 2. KU 3. K?L "K ÃÖke ----------	

127	. 126 › ¾ ( )	129	
128		1. › 2. KU	
129	. 128	1. S kw 2. ¢”ÊU 3. ¾¨K=É Sq×Ö]Á ”¡wM 5. S`ô 6. ¡’>” 7. ¾T>ku` 8. 89. ----------	
130	(referred)	1. › 2. KU	
131	. 130	1. 2. ¾	

		3. ¾ 89. ----------	
132	/	1. 2. -------- ---------- ----- 3. 4.	**137**
133	U” ( )	1. S kw 2. ¢”ÊU 3. ¾¨K=É Sq×Ö]Á 4. ”¡wM 5. S`ô 6. ¡’>” 7. ¾T>ku` 8. ukÊ ØÑ“ / TesÖ` 89. K?L "K ÃÖke ----------	
134	¾¨K=É Sq×Ö]Á S[Ö<ƒ;	1. Ö?“ TKTÁ¨</ eKS[Ö¨</ 2. KÖ?“ eKT>cTT˜ 3. ŸÕÅ™ MUÉ 89. K?L "K ÃÖke ----------	
135	uÅU . . S•\” ›ÑMÓKA~ KT>cØ c¨< }“Ó[ªM;	1. › 2. ¾KU 89. K?L "K ÃÖke ----------	
136	K} E l 135 SMe ¾KU ŸJ’ KU” M}“Ñ\ ;	1. ›LU’¨<U / ›LU“ƒU 2. ›ÉKA“ SÑKM eKUð^	

		3. ¾›ÑMÓKAƒ cß¨<” `Ç eKTMðMÓ 99. S ¾KU 89. K?L "K ÃÖke ----------	
137	. 132 KU ›M}ÖkS<U;	1. uSõ^ƒ 2. ÕÅ—Â eKTÃeTT / eKTƒeTT 3. ÕÅ— ¾K˜U 4. S¨<KÉ eKUðMÓ 5. 89. K?L "K ÃÖke ----------	
138	/ ¨Åòƒ ¾SÖkU / ›K;	1. › 2. KU ---------- ---------- 3. ›L¨<pU 89. K?L "K ÃÖke ----------	**3**
139	SMe K} l 138 › ŸJ’ / / SŠ ’¨<;	1. 1. u 6 ¨` ¨< Ø 2. u›Sƒ ¨<eØ 3. = 4. ›L¨<pU 89. -	

140	u}^ 138 SMe › ŸJ’ U” ›Ã’ƒ ¾¨K=É Sq×Ö]Á ’¨< KSÖkU /ÁkÆƒ;	1. S kw 2. ¢”ÊU 3. 3. S`ô 4. ¡’>” 5. ¾T>ku` 6. TesÖ` 89. K?L "K ÃÖke --- ---	
141		1. 2. 3. = 4.] 89. --- ---	
142	/ ¾¨K=É Sq×Ö]Á ›ÑMÓKA~ ;	1. l¡U“ ›ÑMÓKAƒ ¡õM 2.	

		3. ŸS”Óeƒ 4. ŸÓ ¡K=’>¡ 5. 89. ---------- ---------- -	

3 . . Ã ¾

143	. . Ÿ “ƒ ¨Å MÏ Ã}LKóM;	1. › 2. ¾KU---------- 3. ›L¨<pU 99. S ¾KU 89. K?L "K ÃÖke ----------	**4**
144	l 142 › ŸJ’ ¾T>}LKð¨< ;	1. u `Ó´“ Ñ>²? 2. u¨K=É Ñ>²? 3. uÖ<ƒ TØvƒ Ñ>²? 4. ›L¨<pU 89. K?L "K ÃÖke ----------	
145	. . ;	1. 2. [3. 89. ---------- -	
146	Ÿ “ƒ ¨Å MÏ ”ÇÃ}LKõ ¾T>[Ç ²È ¾T>Á¨<lƒ ›K;	1. › 2. ¾KU 3. ›L¨<pU 89. K?L "K ÃÖke ----------	

147	KØÁo l 146 SMe › ŸJ' ²È¨< U"É '¨<;	1. SÉN'>ƒ SÖkU 2. Ö<ƒ TØvƒ TqU 3. ukÊ ØÑ" S¨<KÉ 89. K?L "K ÃÖke ----------	
148	K}^ 146 SMc<U › ŸJ' ¾S}LKõ ÉK<" Ãk"d wK¨< Á <;	1. › 2. ¾KU 3. ›L¨<pU 89. K?L "K ÃÖke ----------	
149	. . Ÿ "ƒ ¨Å MÏ S[Í ÁÑ–<ƒ Ÿ¾ƒ '¨<; ( )	1. ŸI´w SÑ"— 2. ŸÖ?" TKS<Á 3. ŸÕÅ— 4. HIV Ò` ¾T>• \ c ‹ Tlu` 5. Ÿu?ƒ Ku?ƒ ›ÑMÓKAƒ Wß ‹ 89. K?L "K ÃÖke ----------	

4.

}SKŸ

150	HIV Ÿ}S[S\ U" ÁIM Ñ>²? ;	1. Ñ>²?¨<" Ãíó ----------	
151	¾ ÉT@ T^²T>Á SÉG'>~" U" ÁIM Ñ>²? ¨eÅª ;	1. Ñ>²?¨< Ã ke ---------- 2. ›Le ¨<eU 99. S ¾KU	

152	°ÉT@ T^²T>Á ËS\ u L u `e¨ Ã ¾Ö?"'ƒ G<'@ "Èƒ '¨<;	1. }hiLDM 2. K¨<Ø ¾KU 3. k"dDM 4. S ¾KU 89. K?L "K ÃÖke ----------	
153	¾p`w Ñ>²? CD 4 lØ` e"ƒ Å`dDM;	----------	

154	ÕÅ— }S`UbM/ ;	1. › 2. ¾KU 3. ›L¨<pU	
155	K}^. l 154 S › ŸJ' ¨<Ö?~ U" 'u`;	1. þ²+y 2. '@Ñ@+y 3. ›L¨<pU 99. S ¾KU	
156	K}^ l 154 SMe ¾KU ŸJ' U¡"Á~ U"É" '¨<;	1. '@ eK}S[S`G< 2. ¾^c?" eLM}"Ñ`G< 89. K?L "K ÃÖke ----------	

4 eKÓw[eÒ Ó"–<'ƒ " eK }ªMÊ S

157	cÜ¨ eKÓw[eÒ Ó" 'ƒ ;	1. › 2. ¾KU 89. K?L "K ÃÖke ----------	
158	157 ;	1. › 2. ¾KU 3. ›L¨<pU 89. ÃÖke ----------	

159	K}^ l 158 SMe ŸJ' Ÿ›ÑMÓKA*f* cß¨< Ò` S¨Á¾*f* ÃðMÒK<;	1. › 2. 3. ›L¨<pU 4. S ¾KU	
160	;	1. 2. ---------- ------- 3.	**165**
161	K}^ l 160 SMe › ŸJ' ? }ÖpSªM;	1. › 2. ¾KU ---------- 89. K?L "K ÃÖke ----------	**164**
162	K}^ l 161 SMe › ŸJ' U" ÁIM Ñ>²? }ÖpSªM;	1. G<K< Ñ>²? 2. ›"Ç"È 89. K?L "K ÃÖke ----------	
163	¢"ÊU KU" }Ök ;	1. `Ó´"" KSŸLŸM 2. uÓw[ YÒ Ó"–<*f* ¾T>}LKõ ui ‹" KSŸLKŸM 3. ¾ÕÅ—Â ¾ÅU U`S^ ¨<Ö?~ '@Ñ@+y eKJ' 4. ¾Ö?" vKS<Á " ÖkU eK'Ñ ˜ 5. / 6. K?L "K ÃÖke -------	
164	SMe K}^ l 161 ¾KU ŸJ' KU" ¢"ÊU ›M}ÖkS<U;	1. MÏ "Ç=•[˜ eKUðMÓ 2.ÕÅ—ÂU þ²+y eKJ' 3.ÕÅ—Â eKTÃðMÑ¨ 4. K?L "K ÃÖke ----------	

165		1. 2.	
166		1. 2. 3. 4. ----------	
167	/ ?	1. 2.	
168		----------	
169	/]	1. 2.	
170		1. 2.	
171		1. 2. 3.	

Annex III. In-depth interview guide (English)

Addis Ababa University Faculty of Medicine

School of Public Health

Individual consent form

Study on fertility intention and family planning utilization in HIV positive people on ART follow up care in Bahir Dar, Amhara region.

My name is ---------- I am a part of research work team of Addis Ababa University at hospital and health centres on HIV positive people who are on ART Follow up care. The research will assess the fertility intention and family planning utilization of people living with HIV/AIDS. The study does not cause any harm other than expensing you a few minute for interview. I would also like to assure you about the confidentiality of information and the information will only be used for this research. You have full right to reject, to participate or to interrupt the interview at any time.

The information that you will give us is very important to meet the objective of study to bring changes on fertility and family planning service provision and, program implementation and policy formulation for people living with HIV/AIDS.

I will record all your comments using tape recorder so that we could not miss any of your ideas while trying to take notes. And I assure you that all your comments are confidential, used for research purpose only.

At any moment if you decide not to discuss, it is your right and I will respect your decision.

Now please tell me if you agree to continue the discussion.

Yes_____ No _____

If you are willing, we can continue.

Thank you!

Questions for in depth interview

How old area you?
What is your marital status?
What is your current occupation?
What is your ethnicity?
What is your religion?
What is your total monthly income?
What is your education level?
Where you live?

Fertility intention

How many current alive children do you have? (Including their HIV status.)
Do you have a child born after you learn your HIV status?
Do you want to have a child in the future?
Why you want to have a child?
How many more children do you want to have?
How is it important to have children?
Family planning use

How are yours/ your partner's family planning use before and after you? (Including the method choice.)
How and why do you chose the method you want to use /you are using?
If you are using or want to use what are the reasons after the test?

How is important for you / your partner to use/not to use family planning?

What things affect your family planning use and choice?

Have you ever discussed your sero status to your family planning provider? Why? Why not?

Have you ever discussed about your sero status to your partner/family? If yes, why ?

If not, not?

What do you know about MTCT?

What services do you know about PMTCT?

Are you using the services? If yes, how?

Are you using the services? if yes, how?

Do you think medication used to prevent PMTCT prevent chance of transmission

Annex IV. In-depth interview guide (Amharic)

---------- HIV

?

---------- ----------

? -

?

?

?

/ ?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?

?