Addis Ababa University, College of Health Sciences,

School of Public Health

Assessment of Fertility Desire and Family Planning Utilization among HIV positive people who are on antiretroviral treatment, Asella Hospital, Arsi Zone, Oromia Region, 2011

By

Legesse Tadesse (MD)

Thesis Submitted to the School of Graduate Studies of Addis Ababa University in partial fulfillment for the degree of Master of Public Health in Public Health

Advisor: Ayele Belachew (MD, MPH)

May 2011

Addis Ababa University
College of Health Sciences
School of Public Health

Fertility Desire and Family Planning Utilization among HIV positive people who are on antiretroviral treatment

By

Legesse Tadesse (MD)

Submitted to the School of Graduate Studies of Addis Ababa University in partial fulfillment for the degree of Master of Public Health in Reproductive Health

Advisor
Ayele Belachew (MD, MPH, Assistant Professor)

May 2011
Addis Ababa

I

ADDIS ABABA UNIVERSITY
School of Graduate Studies

Fertility Desire and Family Planning Utilization among HIV positive people who are on antiretroviral treatment

By

Legesse Tadesse (MD)
School of Public Health, College of Health Sciences
Addis Ababa University

Approval by Examining Board

Dr Getnet Meteke ___ _____
Chairman, School Graduate Committee

Dr Ayele Belachew _____
Advisor

Dr Mesfin Addisie _____
Examiner

Acknowledgments

I am grateful to my advisor Dr Ayele Belachew for his best devotion in guidance and advice at each and every step of my study. My thanks also go to AAU and Oromia Regional Health Bureau for facilitating the study and funding me.

Special thanks go to my best be loved families for the unlimited help and courage through out the study period I have gone through.

Finally my extended appreciations and great thanks go to the supervisor and the data collectors for their commitment in carrying out the study. Last but not the least, my gratitude goes to all the participants of the study for their volunteer participation in the study.

Table of contents

Figure

5

Figure

Page

Least of Annexes

List of tables

Acronyms

AAU	Addis Ababa University
ASRH	Adolescent and Sexual Reproductive Health
ART	Antiretroviral therapy
DHS	Ethiopian Demographic Health Survey
EC	Ethiopian Calendar
EFY	Ethiopian Fiscal Year
EPINFO	Epidemiological information
FMOH	Federal Ministry of Health
FP	Family Planning
HIV	Human Immune Deficiency Virus
HAART	Highly Active Anti Retroviral Therapy
PLWHA	People living with Human Immunodeficiency Virus
PMTCT	prevention of mother to child transmission
STDs	Sexual Transmitted Diseases
SPSS	Statistical package for social sciences
WHO	World Health Organization

Abstract

Back ground:- People who are living with HIV / AIDS may or may not have desire of children and want to use family planning . However, the degree of their desires and how it varies by individual social health and demographic characteristics is not well understood.

Objective:-To assess fertility desire and family planning utilization in PLWHA that were on follow up care in Asella Hospital ARV treatment unit.

Methods:-A cross-sectional health facility based study design supplemented by qualitative in-depth interview was done from November 1 to December 30 2010. The study was conducted in Asella Hospital, Asella Town, Arsi Zone, Oromia, Ethiopia. The study population was all HIV positive people who had at least one visit to the ART unit and age group 18-49 for female and 18-55 for male. The sample size taken were 384 .Pre tested questionnaire was used to collect the data which was entered using EPI info window 2000 and analyzed by SPSS 15.0 statistical packages. The qualitative study sample taken until enough information was obtained and interview included participants, a health service provider at ART, Family planning and VCT service provider at out patient department. Notes were taken and data were grouped in to thematic area words of the respondents were quoted accordingly.

Results:- Seventy-five (29.3%) of the women and 56 (43.3%) of the men, totally Hundred thirty one 131(34.1%) of HIV positive people receiving care In Aella ARV treatment unit. HIV infected women desire children than men counter parts (AOR o.o1,95% CI 0, 0.25) ; PLWHAs those who have one/ no child had more desire for children in the future than those who have two and above (AOR 115, 95% CI 3868.6); single individuals had less need than married counter parts (AOR 0.01, CI 0, 0.96). Family planning utilization of PLWHA before knowing their HIV status was 47.7% but current users were 76.5% during the study period. Current FP usage was less in those who were not in marriage than those who were in marriage at study period and those who were on ART for two years or less (AOR 0.04, 95% CI 0.02, 0.1) , 0.5(0.28, 0.89) respectively.

Conclusion:- A Significant proportion of HIV positive individuals who were on antiretroviral treatment care had desire for children. The degree of their fertility intention has implication for HIV infection between male and female partners and mother to child transmission. Significant proportions of HIV infected men and women who were on care were family planning users and still there were who planned for future utilization of family planning. Since these people wishes for family hood, counseling for informed independent decision is needed. High number of current family planning users and some others intended future family planning use showing health care providers shall address issues of demand.

Keywords: - Fertility Desire, intention, Contraceptive, utilization, PLWHA

1. INTRODUCTION

AIDS- related illnesses remain one of the leading causes of death globally. By the end of the year 2008, globally, 33.4million people were living with HIV/AIDS. The epidemic caused more than 25 million deaths since the onset of the epidemic though the number of new infections has dropped by 17% since 2001, and deaths have declined by 10% over the past five years (2).

Around 67% of people living with HIV are in sub-Saharan Africa, the Region worst affected by AIDS, of which 90% of the world children below fifteen years old live with the virus were there. The key regional dynamics shows heterosexual intercourse remains the primary mode of HIV transmission in sub-Saharan Africa, with extensive ongoing transmission to newborns and breastfed babies (1,2).

Studying Fertility desires and intentions directly is essential to focus on the subset of HIV infected men and women who are most likely to get children by choice. This is an important subpopulation whose counseling and service needs differ substantially from other people.

More over the desire of HIV-infected persons to have children in the future has significant implications for the transmission of HIV to sexual partner and newborns. Additionally the study is helpful from the angle of aiding infected individuals who desire and expect children to do so with out sacrificing the health and wellbeing of their newborns, their partners and themselves.

Some studies show that high proportion of people who live with HIV /AIDS have desire to have a child/ children. Different features like age, ethnicity, marriage and relation ship in marriage, and the desire of the partner were some of the detected factors (3, 4, 5, and 6). In a study done in USA on 1421 HIV infected men and women over all, 28-29% of HIV positive men and women receiving medical care were found desire children in the future (4). In Cape Town, South Africa a study found that 57 % of men who were living with HIV and on ARV therapy and follow up care and 45 % of women in the counter part were desired or open to the possibility of having a child (6).

In developed countries development of antiretroviral treatment drugs with cesarean section and breast milk substitution has decreased mother to child transmission of HIV to about 2 % making positive parenting a viable option at least in those countries (7, 8).

According to current available evidences HIV prevalence in East Africa has stabilized although these trends may partly be related to the roll-out of antiretroviral therapy programmes(2). A study in Addis Ababa, Ethiopia, found that among people who were living with HIV /AIDS and were under antiretroviral treatment and follow up care 44.7 % of women and 35.2% of men has desire to children in the future (3).

Ethiopia is one of the severely affected countries in sub-Saharan Region, and this study tends to measure desire for children of men and women in Asella, Arsi Zone, Oromia.

2. Literature Review

2.1 Fertility desire and family planning global regional and national overview.

Globally fertility is one of the principal components of population dynamics which significantly made the developing countries hosting large proportion of younger population (9).

The vast majority of World countries adopted voluntary family planning program during 1974-94 termed period of reproductive revolution. The period saw appearance of a new fertility determinant organized actions by whole societies to bring birth rates down to match the falling death rates, and to improve the socio economic situation of the community. Those actions give women greater control over their own child bearing, and to relieve families from the unexpected burdens of raising more surviving children than in the past. The major cause of this launching of reproductive revolution was primary health care system. In this period, a reproductive change occurred in every region of the world except Sub-Saharan Africa (10).

The average total fertility rate in Africa is 4.9 while that of Sub-Saharan Africa is 5.4 children per woman. In Sub-Saharan Africa the largest total fertility rate is in Uganda 6.7 and the smallest is in South Africa 2.9 children per woman (9, 11).

In Ethiopia, as in many cultures across the world, child bearing is considered the customary right and duty of women for which most of the time sustainability of marriage and economic possession are guaranteed. Fertility and children are regarded as natural that not doing is considered socio-culturally abnormal and universal. The roof of infertility is perceived to lie within the woman resulting to loss of respect and on other hand husband is rarely implicated in the blame (9, 12, 13, 14,).

Total fertility rate of Ethiopia declined between 1990 and 2005 from 6.4 to 5.4 children per woman while family planning utilization is low with the met need for family planning of 15% and unmet need of 34% for currently married women (9, 11).

Oromia with total population of 28,067,000 has the highest fertility, 6.2 children per woman, in the country. The use of modern family planning methods was reported in 2005 by DHS and in 2008/9 HMIS and was 13 % and 38.9% respectively which was low and in constancy with the country (9,11, 15, 16, 17).

2.2 Fertility and HIV infection

One effect of HIV/AIDS on individual women and society at large is a change in fertility levels, which is influenced in part through altered behaviors that have been largely influenced by AIDS education, such as increased condom use, delayed onset of sexual relations, older age at first union, and fewer premarital sexual relations; and lower rates of remarriage after an AIDS-related death of a partner have driven down fertility rates (18, 19)

The other effect of HIV/AIDS on fertility rates in HIV-positive women and men is through biological mechanisms compared to non infected people. HIV infected women experience reduced pregnancy rates and higher rates of both planned abortion and miscarriage. HIV/AIDS may induce sterility, increase fetal mortality, decrease production of spermatozoa, and sometimes decrease frequency of sexual intercourse, all contributing to declining fertility (18, 19).

Biomedical concerns of health care providers also impose indirect effects of HIV/AIDS on fertility in the society. Health care providers' attitudes towards HIV-infected women's fertility intentions were largely shaped by their experiences in individual patient care. Providers tended to see the issues in terms of medical concerns, particularly in terms of the potential impact of a pregnancy on HIV disease progression. Many providers felt that deciding to have a child required careful planning and consideration, with a "right time" to fall pregnant, which included an adequately high CD4 count, access to ART and PMTCT programmes, and whether the individual was physically healthy (20).

2.2.1 Family Planning utilization among HIV positive people

Contraception use and compliance is related to the range of methods available, patient choice, prevalent health and religious beliefs, perceptions of methods effectiveness, and side effects like that of women who may have less tolerance for heavy and prolonged vaginal bleeding than amenorrhea. Correct use of most user dependent methods like both male and female condom and pills requires a basic knowledge of reproduction and literacy skills to follow written institutions (21).

Family planning utilization is important to women and men with HIV/AIDS and other sexually transmitted infection who do not want to risk infecting their partners and children (22).

In studies of women with HIV infection approximately 70% are sexually active, effective contraception use is variable, and unplanned pregnancy frequently reported. In a cohort of Irish HIV positive women only 57% of the sexually active women used a reliable method of contraception. A French study of sexually active women showed 20% was using no contraception. In the African study 39% of women with HIV infection used contraceptives (21).

In many countries women are unable to make autonomous decisions about their sexual and reproductive health. Women living with HIV infection may feel unable to disclose their HIV status and negotiate condom use with new sexual partners for fear of abandonment, domestic violence, loss of economic support, and social isolation (4, 5, 24).

In India a qualitative study, in-depth interviews were held with selected 43 currently married WLHA aged 18-35 years. The study highlighted the need in fulfilling their fertility desires and for programs that both enable WLHA to exercise informed choice and sensitize healthcare providers about these needs.

In Rwanda, although a majority of HIV-positive women reported discussing family planning with a health worker during their last pregnancy (79%), modern family planning use remained low (43%). Condoms were the most commonly used method among HIV-positive women (31%), as family planning use was low among HIV-positive women, further efforts were needed to improve uptake of modern methods, including dual protection, in PMTCT settings (18, 19, 23, 24).

2.2.2 Family Planning utilization and unmet need among HIV positive people

Family planning programmes raised prevalence of Contraceptive practice from less than 10% to more than 60% in developed countries where as third world remained low prevalence with high fertility , population growth and unmet need for family planning(25).

Starting ART is associated with higher pregnancy rates in Sub-Saharan Africa nearly doubling the chances of a woman becoming pregnant. The reasons for this link are unclear. One possible explanation is behavioral. Women receiving antiretroviral therapy may feel more motivated to have children as their health and quality of life improve. However, how pregnancy desires and sexual activity of women changed while on ART and why it is linked to increased pregnancy not clear (26).

Women on ARV treatment will need to address their reproductive health needs as their health improves. Unmet need for FP averages 19.4% in sub-Saharan Africa. Assessment of a home-based HIV care (HBC) project in Kenya found that over half of the HBC clients had been sexually active in the past year, 31% had an unmet need for FP, and 20% wanted to have children. In Ethiopia also it is shown that despite ongoing service delivery efforts, the needs of women with HIV/AIDS, including PMTCT, FP and post abortion care, are not sufficiently met (27, 28, 29).

2.3 Fertility intention among HIV positive men and women.

HIV-positive men and women may have fertility desires and may intend to have children. The extent of these desires and intentions and how they may vary by individuals' social and demographic characteristics and health factors is not well understood. The fact that many HIV-infected adults desire and expect to have children has important implications for the prevention of vertical and heterosexual transmission of HIV (4, 5).

It was found that 28-29% of HIV-infected men and women receiving medical care desire children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in the future (4, 8).

In a study done on HIV positive heterosexuals in Switzerland 20% of HIV positive women and 22% of HIV positive men reported a current desire for children during the study period. A larger proportion (47.5%) of HIV positive women and 38% of HIV positive men stated they would like to have children in their future life (30).

A study in Ethiopia, AA revealed 40.02% HIV positive individuals of which 44.7% were women and 35.2% were men within the reproductive age desire children and 53.5% using and 39.7% want to use family planning in the future (3).

2.3.1 Determinants of fertility intention in PLWHA

A study in Addis Ababa showed there was positive and strong association between desire for children and factors like age group of 18-19 and 30-39, sex being female ,being married or in relation ship, having secondary level education , having no or one-two children and partner having desire for children (3)**.**

Other study in Canada examined the fertility intentions and reproductive health issues of women living with HIV in a broad-based sample between November 2003 and December 2004, and the survey showed 25.8% of women living with HIV indicated an intention to have children (5). Other study in USA was done on fertility desire and intention of HIV-positive women and men in 1998. The interview was conducted with 1421 HIV-infected adults, a nationally representative probability sample of 2864 HIV-infected adults who were receiving medical care within the contiguous United States in early 1996. Over all, 28-29% of HIV-infected men and women receiving medical care in the US desired children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in the future. As many as 20% of HIV-positive men who desire children have a partner who does not. Desire depend on factors like age, number of living children, marriage, partner's HIV status, race and physical functioning or overall health(4).

2.3.2 PMTCT and ART intervention

Important aspect of the HIV/AIDS pandemic is Increase in maternal mortality and the number of infants who become HIV positive through maternal transmission of the HIV virus. Sub-saharan Africa continues to struggle with high fertility rates and lack of adequate access to contraception. The access to family planning services can be improved by integrating it with counseling and testing where as interventions to preventing the mother to child transmission provide an opportunity to integrate

family planning services and contribute to reducing HIV among infants. Currently, Sub-Saharan African accounted for 90% of infection through MTCT. As country level estimation, 40,000 AIDS related infant death occur in Uganda and 56000 in Kenya each year (31).

With access to PMTCT and antiretroviral therapy people living with HIV/AIDS are considering childbearing and parenthood (24, 29). In Ethiopia the study on awareness and knowledge regarding the existence of antiretroviral medication to reduce the risk of mother to child transmission was low. Only 21.2% of women and 25.7% of men know that the risk of MTCT can be reduced through the use of drugs during pregnancy. Prevention of mother-to-child transmission was not part of the Ethiopian HIV /AIDS policy endorsed in 1998 due to limited scientific advances in the prevention of MTCT at the time. However; after endorsement, the service was expanding at a fast rate through out the country with the number of health facilities providing PMTCT service reaching 168 in 2006 (9).

3. Rationale of this Studying

A significant number of HIV infected people are considering child bearing and being parent hood as highly active antiretroviral treatment (HAART) drugs are appearing in to treatment programs. The development of HAART brought about improved health conditions and physical functioning of the HIV infected people and prolonged life expectancy. As the health improves and physical functioning gets better, the income of these people may get increased which improves quality of their life at least for now, or even for years.

The increasing access to prevention of mother to child transmission of HIV with drug prophylaxis (PMTCT) and formulary breast milk substitution made the people who live with HIV/AIDS to change their reproductive behavior to ward having children. The existence of provision of antiretroviral treatment in the country and continued aid on treatment as well as prophylaxis of most opportunistic infections for free might further add to positive thinking to ward fertility of HIV infected men and women.

The continued fertility of people who live with HIV/AIDS is related to decrease physical and immunological health of the mother, impose economical and social pressure on both mother and father considering additional house hold expenses. These include feeding the children and payment for treatment as their frequent ill health is continued and their income is decreasing. Hence, the difficulties which are following bearing and rearing children shall get enough attention as it may result in to shortening their life expectancy. Further more the child born to HIV positive parents will not be risk free from HIV infection.

Orphan number is rising steadily facing uncertainty future because Orphan hood is frequently accompanied by prejudice and increased poverty. These further increases children's chances of dropping their education and may lead to the adoption of survival methods that increase risk to HIV infection.

Oromia accounted for a quarter of number of people living with HIV/AIDS and orphans in Ethiopia in 2000 E.C and still has leading total fertility per woman of all regions of the country. As to the knowledge of the principal investigator there is no similar study done in the area and the Hospital is serving for over seven thousand

people who are living with HIV/AIDS. The findings can contribute a lot for program planners and can be used by any one interested.

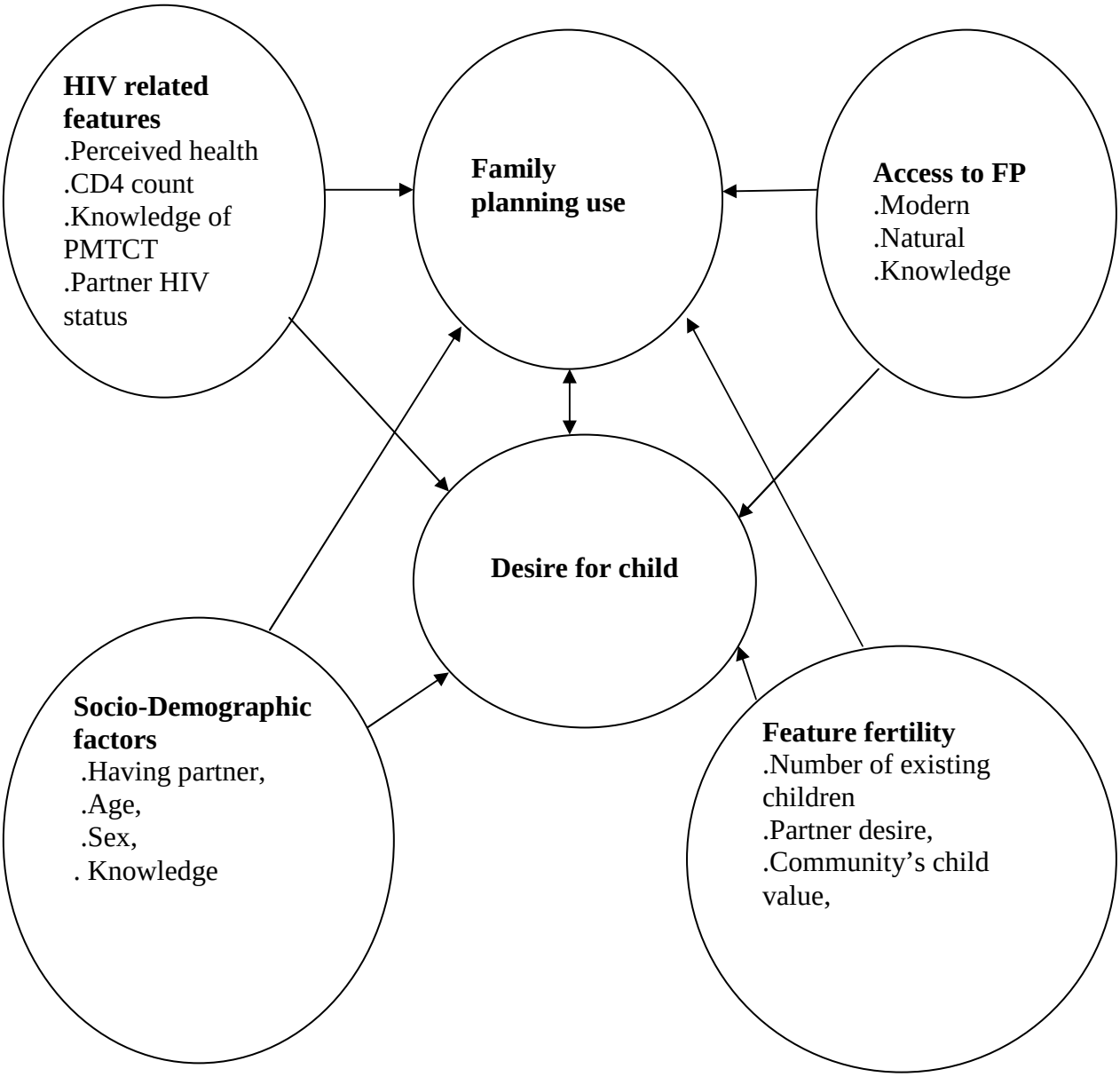

Figure 1:- Conceptual frame work on determinants of contraceptive use and fertility desire of PLWHAs

4. Objective of the study

4.1 General objective

To measure the Fertility desire and Family planning utilization among HIV positive people who are on antiretroviral treatment, Asell, Oromia, Ethiopia, 2010.

4.2. **Specific objectives**

1. To determine fertility desire among HIV people who are on antiretroviral treatment in Asella
2. To determine factors affecting the intention of fertility of people who are on antiretroviral treatment in Asella
3. To determine the magnitude of family planning utilization and factors affecting family planning utilization of people who are on antiretroviral treatment in Asella

5. Methodology

5.1. Study design: A quantitative facility based cross-sectional survey employed supplemented with qualitative in-depth interview.

5.2. Study area

The study site was Oromia Regional State, Arsi Zone, Asella Hospital ART unite. The region has the largest proportion of population of the country and at the same time has the largest total fertility rate. It has PLWHA of 323,402, the largest number next to Amhara regional state which has 430,441.

Arsi zone is located in the Middle East of Oromia Region, about 175Kms from Addis Ababa with a total population of over 2.9 million in 2010 in which 49.86% are male and 50.14% are female population. 90.2% are living in rural area while only 9.8% are living in town. Oromo makes large proportion of the population followed by Amhara and minorities are Gurage and Tigre.

Arsi has three climatic zones namely 42 % high land, 30% low land and the remaining 28 % is temperate. Majority of the population live on agricultural economy.

The zone has one Referral Hospital, Two District Hospitals, 60 Health Centers and 497 Health Posts. These make geographical health coverage of the zone 89 %. Like

other part of the Oromiya HIV/AIDS is the major health problem in Arsi zone with huge social and economic consequences which has followed the epidemic.

5.3 Source and study population

Source population: - All PLWHA who were under follow up in Asella Hospital ARV Unit during the study period.

Study population: - All PLWHA who had at least one visit to the ARV unit during the data collection period.

5.4 Inclusion and exclusion criteria

- **Inclusion criteria**

Male and female clients diagnosed to have HIV and attending the ARV therapy at the Hospital having at least one visit aged 18-49 years women, 18-55 years men were eligible for participation in the study. Those who communicate well were all included in the study i.e. well oriented and communicative were included.

- **Exclusion criteria**

.Those who cannot communicate, mentally ill, cannot hear and seriously ill

.Younger than 18 years and older than 49 and 55 years for females and males respectively

5.5 Sample size

With an assumption of 50% of PLWHA desire children with a confidence level of 95% and marginal error of 5% and using a single population proportion formula.

$n= (Z\alpha/_2)^2 p (1-P)/ d^2$

$n= (1.96)^2 \times 0.50(1-0.50)/ (0.05)^2$

n= 384

n=the required sample size

5.6. Data collection period

The data was collected from November to December of 2010.

- **Technique of data collection**

A structured questionnaire was used for quantitative study. The English version of the questionnaires from previous study in Addis Ababa was adopted and translated

to local language (Afaan Oromo) (see annexes). It was pre-tested ahead the main study for understandability and clarity.

- **Procedure to select study subjects**

The Calculated sample size was used to take the study subjects from the ARV unit of Asella Hospital. The individuals, who came to ART unit for follow up of ART and care, had exit interview when ever legible as per the criteria. The data was collected continuously all working days during the regular working hours until the sample size was achieved.

- **Data collectors**

Two Health Officers and two clinical nurses were allocated for data collection and one Health officer as a supervisor from the ART unit/Hospital and trained on the objective, benefit of the study, individual's right, informed consent and techniques of the interview for two days. The training included half day of pretest of the questionnaires.

- **Qualitative study**

To enrich the information obtained by quantitative study, in-depth interview of one to one discussion was held for the qualitative study. Purposive sampling was used to select the study subjects after quantitative data collection to have insight of the subject of research and generate more factors which might be missed or blurred by the questionnaires of the quantitative part.

The study subjects were selected based on the socio-demographic characteristics like sex, marital status and those who had and number of children they have.

The individuals for qualitative interview included three volunteer key informants; one from VCT service, one from ART provider and one family planning service provider. The objective and benefit of the study was explained and one to one discussion made after verbal consent was taken**.** The interview was carried out by the principal researcher using open ended questionnaires, and the field report was analyzed on daily base not to miss or change the meaning of the idea of the respondent.

5.7 Data Quality assurance

- Pre-testing of the questionnaires was done ahead and the involved subjects were invariably excluded from the main study. The pre-test involved ten percent of the whole sample. Then there were corrections according to the result from the participants and data collectors.
- The supervisor was following the data collection daily and checking at spot for completeness. Mistakes were being corrected timely and the filled questionnaires were being reviewed together with the group of collectors and principal researcher each evening and morning.

5.8.1 Variables in the study

Independent:- Socio demographic characteristics, number of alive children which they have, partner's HIV sero-status, duration on ART, level of CD4 count and perceived health, duration since HIV diagnosis and ever family planning utilization before and during the study period, future family planning utilization.

Dependent:-Desire of fertility and contraceptive utilization

5.8.2 Operational definition

Contraceptive utilization: - The utilization of family plans method to regulate the number and spacing of children in a family through the practice of contraceptive or other method of birth control.

PLWHA on ART: - People lives with HIV/AIDs who had at least one visit to the selected ARV treatment care for receiving ARV treatment.

Unwanted pregnancy: - Is a pregnancy that is identified by the mother as either mistimed or occurring earlier than wanted at the time of conception irrespective of the number of children the mother had.

Fertility desire: - PLWHAs who wants to have child/children in their future life.

5.9 Data analysis and management

Data was entered using Epinfo Version 3.5.1 and then transported to SPSS. Data cleaning was made and errors for inconsistency of data were checked and corrected by SPSS Version 15.0 soft ware. Descriptive data including proportion, percentages, ratios, frequency distributions were analyzed. Bivariate analysis of demographic and HIV disease factors associated with desire for future fertility and family planning utilization were used. Then logistic regression model were employed to control confounding. Qualitative data was summarized at the end from the daily field notes and analysis thematically.

5.10 Ethical consideration

Ethical approval of the research proposal was received from Ethics approval committee at AAU-SPH and letter of permission was taken from school of public health and Adama University (Asella Hospital). Individuals' verbal informed consent was taken and confidentiality with privacy was ensured for all participants.

Autonomy: The individuals were made liberal to choose their own course of action. Every one was given right to voluntarily participate or decline to participate in the interview at any step. The data collector would respect the client's ability to choose, make decision, and change in the light of his/her own beliefs, values and circumstances. The individual could refuse or interrupt at any step of the participation. Whether or not responded no harm to the individuals with regard to the service they intend to get.

Privacy: The interaction was made between one interviewer and the interviewee. The room and the environment were made conducive to make communication private and maintain confidential.

Confidentiality: The individuals were convinced that the information they give would be kept private, secret and not divulged to a third party. The data collector was making thorough explanation about the objective of the study and confidentiality ahead each interview. They were told that the information from respondents would not be used for purpose other than this research. They were confirmed that their name was not written on the questionnaires. They were

communicated that the questionnaire paper after research completion were to be discarded with care.

5.11 Dissemination and Utilization of Results

The primary objective of this paper was a partial fulfillment of the degree of masters in Public Health. It will be submitted to School of Public Health, College of Health Sciences, Addis Ababa University.

However, findings from this study would serve as baseline information as well as a reference material for researchers, experts or policy makers for intervention at National, the Region and the Zone level. Therefore, it could serve as a reference in the library. In addition, a copy of this material would be given to, Assela Hospital. It might also be published in a scientific journal.

6. Result

6.1. Socio demographic characteristics of PLWHA attending ARV treatment unit Asella Hospital, Arsi, Ethiopia, 2010

A total of 384 participants were included for the study, of these 256(66.7%) were female and 128(33.3%) were male. Forty nine percent were in the age group of 30 to 39 years. Among the respondents who attained school to primary were 168(43.8%) and secondary or above were 155(40.36%) where as 22.3% were made of those who read or write or illiterate. Concerning ethnicity, among the participants 215(56%) were Oromo, 142(37%) were Amhara while 27(7%) were Gurage and Tigre. Majority were followers of Orthodox Christianity (75.8%), where as Muslim and Other Christianity followers were 15.9% and 8.9% respectively.

The marital status distribution shows half of the study groups were currently married, 43.2% were divorced or widow and 6.8% were never married. Occupational distribution showed those with no income made 24.2% and employees and house wives made 21% each. The merchants, farmers and others made 14.1%, 15.1%, and 3.1% respectively.

Table 1.1 Socio demographic characteristics of PLWHA attending ARV treatment unit Asella Hospital, Arsi, Ethiopia, 2010 (n=384)

Characteristics	Number(n)	Percent (%)
Sex		
Female	256	66.70
Male	128	33.30
Age group		
18-29	92	24.00
30-39	188	49.00
40-49 females and 40-55 males	104	27.00
Religion		
Orthodox	291	75.80
Muslim	59	15.50
Other Christians	34	8.90
Educational status		
Illitrate	35	9.10
Read/write	26	6.80
Primary	168	43.80
Secondary	130	33.90
Post secondary	25	6.50
Ethnicity		
Oromo	215	56.00
Amhara	142	37.00
Others **(µ)**	27	7.00
Marital status		
Married/in relation ship	192	50.00
Divorced/Widowed	166	43.20
Never married	26	6.80
Occupational status		

Government/Private employee	84	21.90
House wives	83	21.60
Daily laborers	93	24.20
Farmer	58	15.10
Merchants	54	14.10
Others (**£**)	12	3.10

£= Derivers, Retired employee, dependents …
µ = Tigre & Gurage

6.1.2 Demographic characteristics of participants of qualitative study among HIV positive men and women on ART follow up care in Asella, Arsi Zone, Ethiopia, 2010

Seventeen respondents, ten females and seven males of participants were interviewed. Their age ranges 25 to 48 years while educational level ranges illiterate to diploma. Eight of them were married, three divorced, one single. The occupational status was from most categories, three farmers, two house wives, two employees, one merchant, and one driver. Ethnic group were half of them Oromo, five Amhara and One Gurage. Five of the respondents had three or more children and three had children after tested of which two were HIV positive. Two of them had no children yet eight had desire for children.

6.2 Child desire of HIV positive men and women on ART follow up care in Asella, Arsi , Ethiopia, 2010

Among the study group over all (men/women) hundred thirty one (34.10%) have desire for children in the future. Of those who intended to have children 65(49.62%), 57(43.57%) intended to have one and two respectively where as 9(6.87%) need three or more than three children to have in the future. The reason for having children were multiple; to replace one self 112(85.50%), because partner wants 31(23.66%), to avoid stigma 2(1.53%), and to hide partner 2(1.53%). The time preference was also multiple; 22(16.79%) need after two years, 5(3.82%) need in one to two years, and 80(61.07%) need when CD4 count is corrected and 35(26.72%) need when they feel healthy.

The fertility history of the men/women participants showed 327 (85.2 percent) of subjects/spouses gave to at least one birth and 14.8 percent did not experienced. Of these 327 participants 162 (42.2 percent) and 160 (41.7 percent) women or spouse of the men in the study group had live birth to one or two and three or more respectively.

Among the men and women participants 313 (81.5 percent), seventy nine (25.24 percent) had one child, eighty six (27.48 percent) had two and fifty eight (18.53 percent) had three. The remaining forty one (13.1 percent) and forty nine (15.65 percent) had four and more than four respectively.

Table 2-: Child desire of HIV positive men and women on ART follow up care in Asella, Arsi , Ethiopia, 2010

Characteristics	Number (n)	Percent (%)
You/ Spouse Ever given birth to a child?(n=384)		
Yes	327	85.20
No	57	14.80
Number of live birth you/your spouse had? (n=384)(≠)		
0	62	16.10
1-2	162	42.20
≥ 3	160	41.70
Current no of children you have?(n=313) (≠)		
One	79	25.24
Two	86	27.48
Three	58	18.53
Four	41	13.10
>Four	49	15.65
Given birth you/Spouse had after started ART?(n=384)		
Yes	55	14.32
No	302	78.65
No response	27	7.03
Are you/your partner pregnant now?(384)		
Yes	13	3.85
No	366	95.31
Do not know	5	1.30
Do you want having children in the future(n=384)		
Yes	131	34.10
No	253	65.90
No of children you want to have in future life?(n=131)		
One	65	49.62
Two	57	43.51
More than two	9	6.87
Reason for desire to have children in the future?(n=131) (¥)		
My partner wants	31	23.66
To replace my heredity/myself	112	85.50
To avoid stigma/discrimination	2	1.53
To hide partner	2	1.53
Time prefer when to have children(n=131) (¥)		
< One year	6	4.58
One to two year	5	3.82
> Two year	22	16.79
When I feel healthy	35	26.72
When CD4 corrected	80	61.07
As happens	2	1.53

Do not know	14	10.69

¥ = one person can have more than one answer hence the sum is not equal to.
≠= the deference between number of live birth and current existing children for each individual is not defined by this study.

6.3.1 Sex distribution of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

PLWHA found that 43.3 % of over all men and 29.3% of over all women desire to have child/children in the future where as forty three percent of men/women did.

Table 3:- **Sex distribution of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010**

Characteristics	Desire children		No desire for children	
Sex	Number	Percent (%)	Number	Percent (%)
Men	56	43.8	72	56.2
Women	75	29.3	181	70.7
Total	131	43.1	253	56.9

6.3.2 Result of qualitative study in-depth interview of Desire for children of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

The reasons of desire for children includes replacing one self; culture, habit and tradition, taking over property, need brother/sister for existing, test of child love, secure marriage, loneliness in the home, family pressure/interest, partner need, ensure old age care, gives esteem/hope/value were described.

The reason for those not desiring children includes having enough number of children, no adequate income to grow up, fear of deterioration of maternal health and fear of having infected child.

A man explained: *I need a child strongly. It gives me self esteem and value so, no loneliness. I proved PLWAs can get negative child that is why I desire strongly after five years. I have a five and half year old negative child which I got after tested and happy now.*

36/Male, married and has one child

A woman described*: I have a boy and a girl so I need a brother for son and a sister for my daughter when my health is improved and CD4 is better and my wealth gets improved after I counseled my providers. My husband is negative and wants more children when I am fit enough. My families and brothers are expecting me more children to have in the future.*

29/Female, merchant and husband employee, married with two children

A woman stated: *I want to give birth because my husband, negative, need children to replace our selves so I have to get pregnant soon while my health is good enough. Marriage with out children is meaningless and does not long last. We married during very young age and my husband insisted to get child from me because he loves me. He is committing him self to bare sex even though he is negative as he wanted me give birth before my health gets poor. We must test child love together as we grew up since childhood together. We can get PMTCT and ART help from hospital but I do not have any fear from child birth.*

32/Female, A married house wife with no child

A man said: *I have to get one child who takes care of me when old enough. I am taking medication for a long time and I especially need helper than other normal people. Even if I have five children younger one is seven and now it is time for me to have additional who looks after my property. I need help and support currently on my daily work and latter on care and support when I get old age.*

52/Man, married, farmer and have five live children

A man explained: *Bearing children is important as one with no children is forgotten when died. Wealth shall be transferred to children other wise it is lost. My parents and community will not respect me and my property. One with out child is not considered born.*

35/Male, Married farmer and has one untested 3 years child

An employee said: *In the peresence of treatment having children is preferable as it is to replace one self and it is natural to do so.*

37/Male, married, no child

The ART service provider health professionals responded on desire of fertility with the following reasons

The PLWHAs openly and repeatedly inquire whether or not able give birth to child replacing generation. Specially, those who have one or no child request at what level of CD4 count they can have child when to have and ask how effective PMTCT. Mostly positive women do not desire child but their partners desire force them to do so. They are eager to have negative child despite possibility of mother to child transmission of HIV and to know about breast feeding when they get child. We advice them to wait till their CD4 is above 300 cells/mm3 and health improved. They beg and push as to permit them give child but they come being pregnant. Those who have children two or more do not want more children. We counsel all the alternatives and leave decision for them selves.

A woman explained: *I have no good health. My husband divorced me when I disclosed my HIV status. I have no income and live on support relatives. I gave birth three years back and it died before tested.*

25/Female, Divorced woman who has no child

A man said: *I have had enough number of children from two wives. My first wife separated before test when our property was diminished and second is positive and on ART with our youngest baby.*

35/Male, Had two wives and one divorced, had enough children

A woman stated: *we have two children to replace our selves, 16 years and 4 years, both negative. We gave birth to the younger while on ART follow up and lucky enough.*

28/Female, married and has two children

A woman explained: *I have three children, me and the smallest are on ART but my husband is negative. Now I feel very sorry for the suffering of my baby hence I do not repeat the same sin by bearing positive child. More over my health shall be kept well by avoiding birth as my husband and ART providers advised me.*

36/Female, a house wife having three children and one on ART with mother

A woman said: *I was pregnant and my husband left me when he knows I was positive. Currently I am dependent on my family and do not want any child.*

24/Female, divorced, no child

6.4 Distributions of family planning utilization by method among HIV positive men and women before knowing their HIV status and starting ART follow up , Asella, Arsi, Ethiopia,2010.

Among the study group 182(47.40%) used contraceptive before knowing their HIV status at least once where as 202(5260%) never used. The methods they used includes 79(20.60%) injectable, 76(19.80%) Pills, 48(12.50%) condom and 6(1.60%) used implants.

Table 4: Distributions of family planning utilization by method among HIV positive men and women before knowing their HIV status and starting ART follow up, Asella, Arsi, Ethiopia, 2010.

Characteristics	Number	Percent
Contraceptive ever use before knowing HIV status and starting ART(n=384)		
Yes	182	47.40
No	202	52.60
Method (n= 182)		
Condom	48	12.50
Pills	76	19.80
Injectable	79	20.60
Implant	6	1.60

6.5.1:- FP utilization and disclosure of their HIV status of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Current family planning users of the study subjects were 295(76.5%) and non users were 89(23.2%). The method used was 186(48.4%) condom, 97(25.3%) abstinence, 31(8.11%) injectable, 23(6%) pills, and 8(2.1%) was implant. The reason of choosing current method were 225(58.6%) suits her/his health, 128(33.3%) health professionals advice, and 7(1.8%) observed friend experience. Almost all except 3(1%) of the current family planning users (295) disclosed their HIV status to the providers.

Questioners on future family planning on 89 respondents currently none family planning users of which 52(58.43%) will not/did not decided and 35(39.32%) intended to use in the future where as others 2(2.25%) no response. The time to start was not known for 24(68.57%), now for 3(8.57%), with in a year for 3(8.57%), after a year for 3(8.57%), and with in six months for 2(5.75%). Twenty five (6.50%) intended to use condom, 5(1.30%) abstinence, 5(1.30%) to use injectable, and 4(1%) to use implant. The reason to use family planning in the future were to space birth 14(41.18%), to limit number of children 11(32.35%), to stop birth 5(14.71%) and to avoid birth4(11.76%) . Thirty (8.57%) prefer to be served from ART of the same facility while 4(11.43%) prefer other Government family planning clinic/unit.

Table 5:- Distribution of current FP utilization and disclosure of their HIV status of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Are you/your partner use FP method currently	Number	Percent
Yes	295	76.5
No	89	23.2
What method you use ¥		
Abstinence	97	25.3
Condom	186	48.4
Pills	23	6
Injectable	31.	8.1
Implant	8	2.1
Why you choose the current method ¥		
Health professional advice	128	33.3
As it suits my health	225	58.6
Friend experience	7	1.8

Did you disclose your HIV status to provider		
Yes	292	98.98
No	3	1.00
Do you/your partner intended to use FP in the future(n=89)		
Yes	35	39.32
No/Don't know	52	58.43
Other #	2	2.25
When do you want to start (n=35)		
Now	3	8.57
Within six months	2	5.71
Within a year	3	8.57
After a year	3	8.57
I do not know	24	68.57
What method you intended to use (n=35) ¥		
Abstinence	5	1.3
Condom	25	6.5
Pills	4	1
Injectable	5	1.3
Why you want to use FP (n=34) ¥		
To space births	14	41.18
To limit number of children	11	32.35
To stop birth	5	14.71
To avoid birth	4	11.76
Where do you prefer to get the service(n=34)		
At ART unit	30	88.24
Government FP clinic	3	8.82
Government health facility in another place	1	2.94

¥ = One can have more than an answer

6.5.1 Family planning utilization of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Only three of the respondents (two married) used family planning before testing where as eleven of them use family planning currently. Most of the current family planning users were married and live together and their choice includes pills and condom or DEPO and condom. Their reasons include health professionals' advice, to space birth, preventing pregnancy, preventing other STDs, preventing cross transmission and protecting her/his negative partner.

some of the respondents were not using family planning after knowing their HIV status. Those who were not using family planning gave reason as need for child, divorced and abstaining from sex.

A man expressed: *I am using condom always with my wife. She is not using any family planning as I have not disclosed my HIV status yet. I use to protect her from HIV infection and also to space the child birth.*

35/M, Married and has one child of three years

A man said: *I and my wife use condom and pills to avoid pregnancy, to avoid cross transmission to avoid other STDs. The health professionals advised as to use condom and pills when we start the treatment.*

35/Male Married and has six children

A woman said: *I did not use family planning before test but DEPO after because it decreases menstrual bleeding*.

25/Female, Divorced and has no child

A man depicted: *I and my wife use were not using before test but currently use pills and condom to avoid cross transmission and pregnancy as well to space child birth. The health professionals advised as to use these always.*

36/Male, Married with one child

ART provider health professional

I advice my clients use pills and condom or DEPO and condom for preventing pregnancy and protect re-infection by other virus or cross transmission. I serve DEPO and pills as well condom but users prefer to use from local providers. They have fear of taking of pills with other antiretroviral pills. They also have fear of drug interaction and prefer condom. Others state being abstinent and present pregnant. So the unit recently started giving DEPO because some claimed conceived after unintended forceful sex by men on women like house maid, local bear sellers and husbands. Women complain their partners dislike condom use and risk to pregnancy. I advice them using DEPO and started giving here for those intended to use.

A woman said: *I abstain until my health and wealth improves. My husband, employee, is not currently living with me.*

29/F Merchant wife has husband but live apart and has two children

A woman expressed: *My spouse wants child hence I expect pregnancy soon. I used pills before test but stopped just when I new my HIV status.*

A woman stated: *I believed my husband and to have children and never used family planning. Though I had five children with my first husband who died 10 years back, the recent one wants child and finally when I tested positive he left me away. So I am currently abstinent and never go to other sexual relationship.*

45/Female, Divorced mother with five children

The responded PLWHAs present different reasons for not using family planning among which some were: want child, partner dislike, fear of side effect, fear of discrimination and decision for abstinence from sex.

ART and FP provider: *The clients complain partners dislike family planning to have child, fear of side effects, fear of drug interaction with ART drugs, fear of decreasing ART drug effect and most decide abstaining from sex and finally come up with pregnancy. Some of them have no partner to use family planning but conceive after*

causal sex with offenders of unknown HIV and personal status. Some say they use family planning from private or extension health workers in their near area but come with failure.

6.6 HIV related characteristics of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Sixty nine percent of the study subjects were tested before two years and 31% tested within the last two years. Among the group 222(57.81%) were on ART for more than two years and 162(42.19%) were started treatment two or less years back. Majority of the individuals (97.9%) had perceived that their health status during the study period has improved and 302(78.60%) had CD4 of 200 cells per cub mm or more where as 79(20.60%) had less than 200 cells per cub mm.

As to partner status of HIV 258(67.20%) were tested, 86(22.40%) were not tested and 40(10.40%) were unknown. Among tested and known half (50.50%) of the partners were positive and 63(16.40%) were negative. The reason for not testing were showing 56(65.12%) of the partners were not chance full as dead ahead. Fourteen (16.28%) of them refused and 9(10.47%) partners did not disclose to their spouse. The remaining 7(8.14%) had different reasons like divorcing, non partner or causal sexual contact.

Table 6:-HIV related characteristics of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010 (n= 384)

Characteristics	number	%
HIV diagnosis Duration **Years**		
≤2	119	31.00
>2	265	69.00
Duration on ART(Years)		
≤2	162	42.19
>2	222	57.81
Current Perceived health		
Improved	376	97.90
No change	8	2.10
Recent CD4 count(cells/mm3)		
<200	79	20.60

≥200	302	78.60
Unknown	3	0.80
Partner Screened for HIV(384)		
Yes	258	67.20
No	86	22.40
Unknown	40	10.40
Partner's HIV status(384)		
Positive for HIV	194	50.50
Tested but negative for HIV	63	16.40
Not tested for HIV	86	22.40
Partner did not know whether tested or not	40	10.40
No response	1	0.30
Why partner was not tested(n=86)		
I did not disclose	9	10.47
Died before I was tested for HIV	56	65.12
My partner refused to be screened	14	16.28
Other reasons!!	7	8.14

!!=Other includes Causal Sex, Divorce and Non partners

6.7.1 Discussion of sexuality, child bearing and family planning use with care provider of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

.

Majority of the participants 377(98.20%) discussed with the provider about sexuality, Child bearing; family planning with care provider and for those who discussed 92.57 percent perceived the discussion was adequate. Twenty five (6.63%) and 3(0.8%) of the group of study subjects perceived not adequate and do not know respectively. Most (94.14%) of those who did not discuss and who do not know adequacy were ready to discuss with the providers.

Considering the sexual activity of the subjects in the past nine months of the of study period 207(53.90%) were active of which 94.20% were used condom and 5.80% were not used condom. Among the condom users 171(87.60%) used condom always while 24(12.31%) ony-sometimes. The reason mentioned for condom use includes 102(52.30%) advised by health professionals, 178(90.30%) to prevent pregnancy, 145(74.36%) to prevent cross transmission, while for 34(17.40%) because their partner were negative.

Among sexually active in the past nine months who did not use condom , reasons for not using condom were partner dislike condom 5(45.45%), client/spouse need to have child 4(36.36%), partner positive 1(9.09%), and no partner 1(9.09%). Sixty two (16.10%) of the group had history of multiple sexual partner and 322(83.90%) where as only 7(11.30%) used condom always and 37(59.68%) never used condom. The remaining 18(29%) were used condom sometimes

Table 7:-Information on discussion of sexuality, child bearing and FP with care provider among HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Characteristics	**Number(n)**	**Percent (%)**
Discuss about sexuality, Child bearing, FP with care provider(n=384)		
Yes	377	98.20
No	7	1.80
Discuss adequately (n=377)		
Yes	349	92.57
No	25	6.63
I do not know	3	0.8
Would you discuss with them(n=35)		
Yes	34	94.14
No	1	2.94
Sexually active in past nine months(n=384)		
Yes	207	53.90
No	177	46.10
Condom used(n=207)		
Yes	195	94.20
No	11	5.80
How often(n=195)		
Always	171	87.69
Sometimes	24	12.31
Reason for condom use(n=195)		

Health professional advice	102	52.30
Have HIV Negative partner	34	17.40
To prevent pregnancy	178	90.30
To prevent cross transmission	145	74.36
Reasons for non condom use(n=11)		
Partner dislike condom	5	45.45
Need to have child	4	36.36
Partner positive	1	9.09
Non partner	1	9.09
Multiple sexual partner history		
Yes	62	16.10
No	322	83.90
How often used condom(n=62)		
Always	7	11.30
Some times	18	29.00
Never used	37	59.68

6.7.2 Discussion on sexuality, family planning and serostatus of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Majority of the participants discussed about their family planning use and serostatus openly with ART providers and partners but some did not.

I discuss with my husband, children, parents and neighbors about HIV and my medication always. My husband also agreed to abstain until my health improves and ready for pregnancy. My parents and brothers advised me follow my medication and live with my daughters who help me in the home.

A woman 29 years old, married with two children.

I am driver and have one young boy in college to whom I have not told my HIV status for the fear of disturbing his stability. I told to my brother and I use condom for causal sexual activity. I will be married in the future and have two children. I discussed this with my doctor and nurses.

32/ Male a divorced deriver with a boy

I and my wife discuss about our life and sexual activity and we use condom to prevent cross infection. She uses pills regularly to prevent pregnancy. I had two wives and the first wife refused testing and left away the home. Since our property is diminished and we currently perform the farm poorly we use family planning discussing our problem with provider nurses.

35/Male, A man married with children

There are some who do not disclose to their partners mainly males who handle all the property under their control

My wife is not educated and if I tell her that I am HIV positive then she will leave me alone with my child which I cannot support alone. I shall care for her by using condom where she is previously infected or not.

35/Male, married with a child

Some women risk economic dependence by disclosing their HIV to their spouse. Further their marriage end up which may discourage the sero-status disclosure.

My first husband died of unknown illness and I married second 10 years back. I was sick and found HIV positive which I told him. He refused testing for HIV and divorced me though I beg him to live with; hence I have no sexual intercourse and no family planning utilization.

45/ Female, Divorced mother of five children.

6.8 Reproductive health characteristics and emergency contraceptive use of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Among the respondents 61(21.71%) had abortion and of these 70.49% had more than five years earlier than the study period. Three percent experienced abortion within the past six months of the study period.

Only 103(26.89%) of the study subjects reported having sexually transmitted disease in the past. The question on knowledge about emergency contraceptive indicated that only 14.30% know about it and 70.91 percent of those who know have intention to use if wanted.

Table 8:- RH characteristics and emergency contraceptive use among HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Characteristics	Number(n)	Percent (%)
Any history of abortion(n=281)		
Yes	61	21.71
No	220	78.29
When was the time(n=61)		
< 6 months	2	3.28
6-12months	1	1.64
2-5	15	24.59
>5ys	43	70.49
Knowledge about Emergency contraceptive(n=384)		
Yes	55	14.30
No	329	85.70
Intention to use if needed(55)		
Yes	39	70.91
No	16	29.09

6.9 Association of desire for children by selected characteristics among HIV positive men and women on ART follow up care, Asella, Ethiopia, 2010

From multivariate analysis there was fertility desire of fertility by women is significantly less than men (AOR 0.01 , 95% CI 0,0.25) while more desire of fertility by those who have one or no child than those who have two or more children (AOR 115 , 95% CI 3.44,3868.6) . Those single individuals had less desire of fertility than those who were married counter parts (AOR 0.01, 95% CI 0, 0.96) those with no future intention to use family planning had more desire for fertility (AOR 8.81, 95% CI 1.17, 66.51). Similarly PLWHA of age 30 to 39 years had more fertility desire than of 40 or more (AOR 43, 95% CI 1.58, 1169.12) and merchants had more desire than Governments/Private employee (AOR 37, 95% CI 1.32, 1038.96)

Table 9: Association of desire for children by selected characteristics among HIV positive men and women on ART follow up care, Asella, Ethiopia, 2010

Characteristic(variable)	Fertility Desire of PLWHAs		COR (95% CI)	AOR(95% CI)
	Yes	No		
Sex				
Male	56(43.8%)	72(56.3%)	1.00	
Female	75(29.3%)	181(70.7%)	0.533 (, 0.343, 0.828)*	0.01(0, 0.25) **
Age group in years				
≥ 40	19(18.3%)	85(81.7%)	1.00	
30-39	68(36.2%)	120(63.8%)	2.535 (1.420, 4.526)*	43(1.58,1169.12)**
18-29	44(47.8%)	48(52.2%)	4.101 (2.154, 7.808)*	15.23(.36,649.16)
Religion				
Orthodox	91	200	1.00	
Muslim	26	33	1.732 (0.979, 3.064)	- - -
Other Christians	14	20	1.538 (0.744, 3.181)	- - -
Ethnic group				
Oromo	80	135	1.00	
Amhara	46	96	0.809 (0.517, 1.265)	- - -
Others	5	22	0.384 (0.140, 1.053)	- - -
Marital status				
Married	81(42.2%)	111(57.8%)	1.00	
Widowed/Divorced	33(19.9%)	133(80.1%)	0.34 (0.211, 0.548)*	0.06(0,2.29)
Never married	17(65.41)	9(34.6%)	2.588 (1.098, 6.100)*	0.01(0,0.96)**
Occupational				

status				
Employee	38(45.2%)	46(54.8%)	1.00	
House wife	24(28.9%)	59(71.1%)	0.492 (0.26, 0.934)*	
Daily labourer	22(23.7%)	71(76.3%)	0.375 (0.197, 0.713)*	1.18(0.08,17.28)
Farmers	20(34.5%)	38(65.5%)	0.637 (0.319, 1.272)	42.83(0.5,3689.49)
Marchants	24(44.4%)	30(55.6%)	0.968 (0.487, 1.926)	37(1.32,1038.96) **
Others	3(25%)	9(75%)	0.404 (0.102, 1.597)	
Number of alive children current have				
≥ 2	43(18.40%)	191(81.60%)	1.00	
0-1	88(58.70%)	62(41.20%)	6.305 (3.965, 10.024)*	115(3.44,3868.6)**
Future FP use				
Intended to use	15(42.90%)	20(57.10%)	1.00	
No/Don't know	3(5.80%)	49(94.20%)	0.082 (0.021, 0.313)*	8.81(1.17, 66.51) **

*Significant association to FP utilization in binary logistic regression analysis
**Significant association to FP utilization in multivirate logistic regression analysis

6.10: Associated factors of Current Family Planning Utilization of PLWHAs, Asella, 2010

From a multivariate analysis age of individuals showed no statistical association between current family planning usage or not. House wives, farmers and others like students, commercial sex workers derivers and retired had no statistical relation but merchants and daily laborers were less users.

Multivariate analysis of current family planning usage was significantly associated that widowed/divorced and single individuals were less users than married counterparts COR 0.05, 95 % CI 0.02,0.11;AOR 0.04, 95% CI 0.02, 0.10 and COR 0.07, 95% CI 0.02, 0.22; AOR 0.05, 95% CI 0.02, 0.18 respectively. Merchants were less current family planning users than Government/Private employee of the study group COR 0.34, 95% CI 0.15, 0.76; AOR 0.26, 95% CI 0.10, 0.71. Those subjects on ART longer than two years were fewer users than treated two years or less.

Table 10. Associated factors of Current Family Planning Utilization of HIV positive men and women on ART follow up care in Asella, Arsi, Ethiopia, 2010

Characteristic(variable)	Current FP use		COR (95% CI)	AOR(95% CI)
	Yes	No		
Sex				
Male	113(88.3%)	15(11.7%)	1.00	
Female	182(71.1%)	74(28.9%)	0.326(.179, 0.596) *	0.86(0.39,1.9)
Age group in years				
≥ 40	83(79.8%)	21(20.2%)	1.00	
30-39	144(73.6%)	44(23.4%)	0.828 (0.461, 1.488)	0.75(0.37, 1.52)
18-29	68(73.9%)	24(26.1%)	0.717 (0.368, 1.398)	0.76(0.33, 1.74)
Marital status				
Married	185(96.4%)	7(3.6%)	1.00	
Widowed/Divorced	93(56%)	73(44%)	0.048 (0.021, 0.109)*	0.04(0.02, 0.1) **
Never married	17(65.4%)	9(34.6%)	0.071 (0.024, 0.216)*	0.05(0.02, 0.18) **
Religion				
Orthodox	220	71	1.00	
Muslim	48	11	1.408 (0.694, 2.858)	- - -
Other Christians	27	7	1.245 (0.520, 2.981)	- - -
Occupational status				
Employee	71(84.5%)	13(15.5%)	1.00	
House wife	69(83.1%)	14(16.9%)	0.902 (0.396, 2.058)	0.39(0.14, 1.13)
Daily labourer	61(65.6%)	32(34.4%)	0.349 (0.168, 0.724)*	0.55(0.24, 1.26)
Farmers	49(84.5%)	9(15.5%)	0.997 (0.395, 2.513)	0.95(0.33,2.72)
Merchants	35(64.8%)	19(35.2%)	0.337 (0.15, 0.761)*	0.26(0.1, 0.71) **
Others	10(83.3%)	2(16.7%)	0.915 (0.180, 4.669)	1.54(0.27, 8.74)
Duration on ART				
>2 years	179(80.6%)	43(19.4%)	1.00	
≤ 2 years	116(71.6%)	46(28.4%)	0.606 (0.376, 0.976)*	0.5(0.28, 0.89)**
Ethnic group				
Oromo	174(80.9%)	41(19.1%)	1.00	
Amhara	104(73.2%)	38(26.8%)	0.645 (0.390, 1.067)	0.86(0.47, 1.58)
Others	17(63%)	10(37%)	0.401 (0.171, 0.939)*	0.75(0.37, 1.52)

*Significant association to FP utilization in binary logistic regression analysis
**Significant association to FP utilization in binary logistic regression analysis

7. Discussion

This facility based cross-sectional study assessed the fertility desire and family planning utilization of reproductive age men and women who were on antiretroviral treatment and follow up at ART unit during November to December 2010. Hundred and thirty one (34.1%) of the study individuals was found desiring children in the future. Among the study group 47.7 percent reported used family planning before the diagnosis of HIV infection at least once / ever used where as 76.5 percent found currently on use.

In USA 28-29% of HIV infected men and women receiving medication were found desire children in the future (4) and the figures reaches to 40.2% of PLWHAs on medication and follow up were having desire for (3) and 36.5% which is consistent to our study (33). A study in south Wollo, North East Ethiopia showed 36.4 percent of HIV infected men and women want a child in the future which has no significant difference from the finding in Asella (34). A cross sectional study in SNNPR showed 33.9% of HIV infected individuals expressed their desire for children inline with the current finding (35).

The current study showed that the desire for future fertility was different between the men and women. Among the women in the study group 29.3% showed desire for children where as 43.8 % of the counterpart men did. A study done in South Africa showed among HIV positive people under follow up care 45% women and 57% men open for pregnancy i. e found did not plan not to use family planning (6). There was also a study in Nigeria which showed that 68.4% HIV positive men and 53.8% of women who were on care desired children (36). These findings differ from the current finding at Asella which may be from socio-demographic deference between these countries and Ethiopia. This implies that women are more desire not to conceive or to have child in the future and it can be for fear of the health problem associated to pregnancy and delivery. It shows that the challenges face them directly than the men of the same status.

An important associated factor to fertility desire in this study was marital status. Those who never married were less likely desire fertility than those in marriage. This may be because marriage and intimate relation ship is more likely leads to ward having child. Similarly in USA, it was seen that among those who desire children eighty four percent

and among not desired sixty four percent were married so in consistence with our finding (6).

Among the PLWHA who involved in the study, more than fifty eight percent of those who have no or only one child had desire for children. This might be due to the need for replacing oneself and partner need. In USA it was found sixty percent of PLWHA those who desire children had no or only one child (4). The finding is consistent to findings in Hosaina, Ethiopia (33). A study done in Addis Ababa showed that HIV positive men and women who had less than two children had desire for future fertility in their life time than who have two or more(3).

The discussion with participant in qualitative study indicated those who had no children had strong desire to conceive even with discordant partner. Majority of the PLWHA with larger family does not want to have more children while few still need children to have some one caring for them in their future life time.

Before knowing their HIV status 47.4 percent reported used family planning at least once while 76.32% were family planning users during the study period. The finding is similar with the study done in AA which 48.9% and 53.3% reported ever used family planning before diagnosis and users during the study period respectively (3). The on going family planning users in current study was better and may be due to presently strengthened HIV service integration with family planning and extension health service workers all over (37).

Ninety eight percent of individuals admitted they discussed about sexuality, childbearing and family planning of those ninety two perceived it as adequate how ever more than half of them were sexually active of which 16.4 % were not using condom always when they did. It was 27.7% in Hosana with no much difference (33). A cross-sectional study on ART care followers at public hospitals in Addis Ababa depicted 36.9 percent had a history of unprotected sex (with out condom) in the three months before the study (38). This contributes a lot for expansion of other sexually transmitted infection on top of existing HIV infection.

Qualitative study the current study also depicted some women with HIV infection were subjected to involuntary sexual intercourse with whom they knew and did not know. The discussion with health providers showed some HIV infected women became pregnant

while they were reporting as being abstinent during their ART follow up. Those who participated in discussion reported that they had no information about emergency contraceptives but after discussion on its benefit, showed desire to use in the future. The findings indicated that there was risk for themselves to be re-infected by different HIV virus and to infect non infected peoples through unprotected sexual contact.

Half of the study group had positive partners while the rest had negative, non tested or unknown result which makes dual protection method counseling very important, using a condom for disease prevention and another, more effective method for contraception. Some discordant couples were attempting conception with bare sex. Strong family planning counseling and usage have implication in HIV prevention from either partner infection and transmission of the HIV virus from mother to child (39,40)

Most of the participants (85.7%) reported that they do not know about emergency contraceptive while high proportion of them admitted discussed on reproductive health and family planning with their providers at ART unit. After having information about it (70.91%) majority of respondents showed intention to use emergency contraceptive if provided; similar to findings in Hosana 90.65% and 66.67% respectively (33). Strengthening counseling and providing it at the service point may largely improve challenges rising from unwanted pregnancy and hence contribute to HIV expansion.

The qualitative study showed that some women who were on antiretroviral treatment and follow up care emerged to the unit after their pregnancy advanced. They responded that pregnancy happened after having unplanned sexual intercourse with men of unknown HIV status for whom they work as house maid. Their pregnancy carried double risks first to the man and second to the fetus that the woman carried. As the study showed most of those who conceived unintentionally responded that they could use emergency contraceptive if provided

8. Strength and Limitations of the study

8.1 Strength of the study

- The study is supplemented by qualitative studies to enrich the information which are not addressed by the quantitative results.
- The study help exploring the fertility intention and family planning utilization among PLWHA under treatment, hence gives knowledge and helps to see where and how to act.

8.1 Limitations of the study

- The sample size is small, taken from a hospital and hence not possible to generalize.
- Despite that the data collectors trained on participants' confidentiality and respondents' right and to read the consent before they start the interview and explained ton the participants as has no link to service given, the respondents might have given a desired answer by the counselor or health provider particularly on high risk behavior.

9. Conclusions and Recommendations

9.1 Conclusions

- Majority of people living with HIV/AIDS have no desire to have a child in the future.
- Significant proportion of PLWHA have desire to have a child/children in the future.
- PLWHA who never married, widowed or divorced have less desire for children and currently are less users of family planning.
- More HIV infected men desire future fertility than women of same status
- PLWHA in reproductive age and have one or no child was more desire to have child/children in the future.
- After knowing that they are infected with HIV more PLWHA were using family planning than before diagnosis.
- Low proportion of respondents reported having counseling and discussion on emergency contraception with ART service providers.

- A number of discordant partners continued attempting to have child with their partners.

9.2 Recommendations

- ❖ Providers of ART service need to focus on counseling PLWHAs about having alternatives of owning children.
- ❖ Health professionals at ART service point shall focus on counseling about vertical transmission of HIV the discordant couples and help on informed choice.
- ❖ ART service providers need to strengthen counseling to improve emergency contraceptive knowledge and utilization.
- ❖ Family planning demand for PLWHA need adequate attention since the utilization is high.
- ❖ Research needed to more investigate the role of continued HAART antiretroviral medication on desire of child/children.

8. Reference

1. UNAIDS. Worldwide AIDS and HIV statistics including deaths. Nove 2009.
2. WHO. Over view of HIV prevention WHO health report, Nov 24 2009
3. Wosenyelesh Tamene. Fertility desire and family planning demand among HIV positive men and women in follow up care in Addis Ababa antiretroviral treatment units. AA, Ethiopia 2006.
4. James L-chen, Kathryn A et al. Fertility desire and intention of HIV positive men and women, USA. Vol 33, Number 4, 2001.
5. O Gilivie Gina S. Fertility intention of women of reproductive age living with HIV in British Columbia, Canada, 2007 vol. 21 100p.
6. Fertility intentions and reproductive health care needs of people living with HIV in Cape Town, South Africa; Implications for integrating reproductive health and HIV care services, published online: 3 April 2009
7. Minkoff H and Santoro N. Ethical considerations in the treatment of in fertility in women with immunodeficiency virus infection. The New England Journal of medicine June 2000: 342(23):1748-1758
8. Chen J. Philps K, Kanouse D, Collins R and Maul A. Fertility desire and intentions of HIV positive men and women. Family planning perspectives 2001: 33(4):144-152 & 165
9. Central Statistical Authority. Ethiopian Demographic Health Survey. Addis Ababa 2005.
10. World Bank. The Global Family Planning Revolution: The three decades of population policies and programs. Washington, D.C. 20433. www.worldbank.org
11. Planning Department, FMOH: Health and Health related indicators. Addis Ababa, Ethiopia 2008.
12. Misganaw F. Notes on MCH/RH for MPH Students. Addis Ababa University Faculty of Medicine SPH. 2001.(unpublished)
13. Federal Democratic Republic of Ethiopia Ministry of Health. Report on safe mother hood community-based survey. Ethiopia. 2006.

14. EFMOH. National reproductive Health strategy 2006-2015, Addis Ababa, Ethiopia. March 2006.
15. Ethiopian Public Health Association. Extracts from EPHA research awards and master's theses in HIV/AIDS. Extract No. 2. Addis Ababa, Ethiopia. 2005.
16. Oromia Regional Health Bureau and Essential Services for Health in Ethiopia. House holds health survey. Addis Ababa, Ethiopia. 2004.
17. Federal Democratic Republic of Ethiopia Ministry of Health: Health and Health related indicators. Addis Ababa, Ethiopia 2008.
18. Shari Margoles. Fertility, Conception and HIV. SAN Francisco AIDS Foundation 2004.
19. Fourth meeting of the Follow-up committee on the implementation of the DND and the ICPA-PA .Impact of HIV/AIDS on fertility in Sub-Saharan Africa. Yaoundé, Cameroon 28-31 2002
20. H. Jane, C. Diane, M. Landon, B. Hillary, Z. Virginia, O. Phyllis. Policy maker and health care provider perspectives on reproductive decision-making amongst HIV-infected individuals in South Africa, BMC Public Health 2007,Vol 7, 7:282
21. H S Mitchell, E Stephens. Contraception choice for HIV Positive Women: Sexually transmitted infections 2004. BMJ, 80: 167 – 173
22. UNAIDS. Report on AIDS Epidemic Geneva 2008:214-15
23. H Smitchell, E Stephens.Contraceptive choice for HIV positive women: BMJ vol 80:167-173 Issue 3 UK. 25 February 2004
24. The info project johns Hopkins Bloomberg School of Public Health Center for communication program. Integrating family planning and HIV/AIDS Services. 111 Market place, Suit 310 Balti more, Maryland and 21202, USA
www.Info for Health.org
25. John Cleaned, Stan Bernstein, Alex Ezeh, Anibal Faundes, Anna Glasier, Jolenelnnis. Family Planning: the unfinished agenda. Lancent Nov1, 2006; 368-27. London school of Medicine, London.
26. Myer L, Carter RJ, Katyal M, Toro P, El-Sadr WM, et al. (2010) Impact of ART on Incidence of Pregnancy among HIV-Infected Women in Sub-Saharan Africa: A Cohort Study. PLoS Med 7(2): e1000229. doi:10.1371/journal.pmed.1000229

27. UNAIDS. Living in a World with HIV and AIDS: Information for employees of the UN system and their families. UNIDS-20avenue Appia-1211 Geneva 27-Switherland 2004 http://www.unaids.org
28. AIDS: Journal of the international AIDS Society Nov 2009 V-23 ISS P-S19-S26
29. NHAPCO. Annual HIV/AIDS monitoring and Evaluation report. Addis Ababa, Ethiopia –2006
30. Laura P. Manuel B. Andree F, pietrol V. High risk sexual behavior and fertility desire among heterosexual HIV positive patients with a serodiscordant partner two challenging issues.Swiss MED WKLY 2003; 133:124-127
31. Academy for Educational Development. Sexual health exchange. Breaking the cycle Of HIV/AIDS related stigma and discrimination. Connecticut Avenue NW. Washington, D.C. 2009. www.changeproject.org
32. Adir T. Desire for children and unmet need for contraception among HIV positive women. DHS working paper Demographic and Health Reaserch , Lesotho, 2007.
33. Abebe M. Fertility Desire and Family Planning Utilization among HIV positive people who are on ART, Hosanna,Ethiopia- 2010
34. EJHD. Factors affecting fertility decisions of married men and women living with HIV in South Wollo Zone, North East Ethiopia,Volume 24, Number 3, 2010
35. EPHA. Distribution of PLWHA attending ART service by fertility desire in SNNPR, Extract No 5, Addis Ababa, ETHIOPIA. 2008
36. JMNA. Oladopo, Daniel O, Odusoga, and Ayoola-Sotubo O.Fertility Desire and HIV Positive patients at a Suburban specialist center, Dece 2005, 97 (12) 1672-1681
37. MOH, Arsi Zonal Health office Activity report 2010 (Unpublished Report)
38. EPHA. Risky Sexual Practice and Related Factors among ART atteders, Addis Ababa, Ethiopia, 2010
39. WHO. Strengthening Linkages between Family and HIV: Reproductive choices and Family Planning for people living with HIV, June, 2007.
40. USID. Addressing the family planning needs of HIV-positive PMTCT clients: Baseline findings from an operations research study. Kenya, Nairobi, April 2005.

Annexe I Quantitative questionnaire (English)

Addis Ababa University – Faculty of Medicine, School of Public Health Individual Consent form.

My name is _____ I am a part of research work team of Addis Ababa University at Hospital and health centers on HIV positive People who are on ART Follow up care. The research will assess the fertility intention and family planning utilization of people leaving 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. 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?

Tick one. Agree_____ Do not agree____

Thank.

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

Interviewer name _____Signature_____

Date of interview _____Supervisors Name _____Signature_____

Checked on date_____

The out come is (thick one) Complete _____ Incomplete__

Other , Specify_____

1. 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. Read and write 3. Unable to write and read 99. No response 89. other, specify-----	
Q105	Ethnicity	1. Oromo 2. Amhara 3. Gurage 4. Tigray 89. Others, 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. Others, Specify-----	

Part II. Information on Fertility Intention

Q108	Have you/spouse ever given a birth?	1. Yes 2. No	
Q109	How many life births have you/spouse had?	1. ----no of children 2. I do not have any live births 89. Others, Specify---------	
Q110	How many live 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. . Others, Specify--------	
Q111	Did you/spouse give birth after you learn your HIV status?	1. Yes 2. No 89. Others, Specify	
Q112	What is the age of your last child?	----------	
Q113	Did you/spouse use family	1. Yes	

	planning during your last pregnancy?	2. No	
Q114	Was your/spouse last pregnancy wanted/timed?	1. Yes 2. No 99. No response 89. Others, Specify	
Q115	Are you / your partner pregnant now?	1. Yes 2. No 3. I do not now	
Q116	Do you have a desire for children?	1. Yes---- 2. No ---- 3. Do not know 99. No response 89. Other, Specify---------	If no skip to Q120
Q117	If Q116 is yes, How many children do you intended to have in the future?	1. Write the number -----	
Q118	If Q116 is yes, why you need to give birth?	1. To hide from people 2. To avoid from stigma and discrimination 3. To replace my heredity 4. To hide from my partner 5. My partner wants 89. Other, Specify----------	
Q119	If Q116 is yes, when do you prefer to have children?	1. Before a year 2. Within two years 3. After two years 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/spouse 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/spouse ever used family planning method before HIV diagnosis?	1. Yes 2. No 3. I cann't remember 99. No response 89. Other, Specify----------	If no go to 123
Q122	If 121 is yes, what type of contraceptive you/spouse were using?	1. Abstinence 2. Condom 3. Pills 4. Injectable 5. Implant 6. Tubal legation / Vasectomy 89. Other, Specify------	
Q123	Have you/spouse ever used family planning method, after you know HIV status?	1. Yes 2. No 99. No response 89. Other, Specify------	
Q124	Have you discussed about RH topics with your counselor?	1. Yes 2. No 89. Other, Specify----------	If no go to 126

Q125	If Q124 is yes, What RH topics discussed during counseling?	1. Clients fertility intentions 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. Other, Specify----------	
Q127	If Q 126 is yes, what type of method have you been counseled for?	1. Abstinence 2. Condom 3. Pills 4. Injectable 5. Implant 6. Tubaligation/Vasectomy 89. Other, Specify------	
Q128	Have you/spouse ever been given any family planning service at ART clinic?	1. Yes 2. No 3. No response	
Q129	If yes, what type of family planning method have you/spouse been offered?	1. Abstinence 2. Condom 3. Pills 4. Injectable 5. Implant 6. Tubalegation/ Vasectomy 89. Other, Specify------	
Q130	If no, have you/partner been referred to use family planning	1. Yes 2. No	

	methods?		
Q131	If yes where have you/partner been referred?	1. Family planning clinic in the same facility 2. Family planning clinic in another service 4. FGA/FP clinic 5. Others specify	
Q132	Are you /your partner using family planning method currently?	1. Yes 2. No 3. No response 4. I do not know	If no skip to Q 135
Q133	If yes, what method are you /partner using?	1. Abstinence 2. Condom 3. Pills 4. Injectable 5. Implant 6. Tubalegation/ Vasectomy 89. Other, Specify------	
Q134	If 132 is yes, why you/partner choose the current contraceptive method?	1. Health professionals preference 2. Because it suits to my health 3. From my friends experience 89. Other, Specify----------	
Q135	If you/partner are using family planning method did you disclose your status for the provider?	1. Yes 2.No 89. Other, Specify----------	
Q136	If 135 is no, why do not you disclose?	1. I have no trust on the provider	

		2. I fear stigma and discrimination 3. I do not want the help of provider 99. No response 89. other , specify----------	
Q137	If 132 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 132 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----------	
Q139	If 138 is yes, when do you want to start using the method?	1. Now 2. With in six months 3. With in a year 4. After a year 5. I do not know	
Q140	If the answer for Q 138 is yes, what method you intend to use?	7. Abstinence 8. Condom 9. Pills 10. Injectable 11. Implant 12. Tubalegation/ Vasectomy 89. Other, Specify----------	
Q141	Why you/partner want to use family planning method?	1. To space birth 2. To limit the number of	

		children 3. To stop birth 4. To avoid birth 89. Other, Specify----------	
Q142	Where do you/partner 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 89. Other specify---------	

Part V: Information on VCT and ART

Q143	How long since you did HIV diagnosis?	1. Write the time---------- 2. Do not remember 89. other , specify----------	
Q144	How long have you been receiving ART treatment?	3. Write the time---------- 4. Do not remember 99. No response	
Q145	How was your perceived health condition after you start receiving ART?	1. Improved 2. No change 3. Deteriorated 99. No response 89. other , specify----------	
Q146	How much is your recent CD4 count?	----------	
Q147	Did your partner get tested?	1. Yes 2. No	If no go to 149

		3. I do not know	
Q148	If Q 147 is yes , what was the result?	1. positive 2. Negative 3. No response	
Q149	If Q 147 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

Q150	Did counselor at ART provider discuss about sexuality, child bearing and family planning?	1. Yes 2. No 89. other , specify---------	
Q151	If Q 150 is yes, did the provider adequately cover the issues?	1. Yes 2. No 3. I do not know 89. other , specify---------	
Q152	If Q 151 is no will you like to discuss with the provider?	4. Yes 5. No 6. I do not know 89. other , specify----------	
Q153	Have you had sexual intercourse in the past nine months after diagnosis?	1. Yes 2. No---------- 3. I did not remember---	**If no Skip to Q 158**
Q154	If Q153 is yes have you used condom?	1. Yes 2. No---------- 3. I do not remember 89. other , specify----	**If no Skip to Q 157**
Q155	If yes Q 154 how often you use?	1. Always 2. Some times	

		89. other , specify---------	
Q156	If Q 154 is yes, why you use condom?	1. To prevent pregnancy 2. To prevent other STDs 3. My partner HIV status is negative 4. Health care provider advice me to use condom 5. To prevent cross transmission 89. other , specify---------	
Q157	If 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---------	
Q158	Did you practice multi-partner sex?	1. Yes 2. No 3. No response	
Q159	How often you have used condom with all the Sex partners?	1. Always 2. Sometimes 3. I never use 89. other , specify---------	
Q160	Do you have any history of abortion in your life?	1. Yes 2. No 3. No response	
Q161	If yes for Q160, when was the time?	Write the time----------	

Q162	Do you / your partner have /has any history of STI?	1. Yes 2. No 3. No response	
Q163	Do you know about emergency contraceptive?	1. Yes 2. No	
Q164	Do you use if you are given emergency contraceptive?	1. Yes 2. No	

Annexii;II Gaafilee Lakkofsaa

Yunivarsitii Finffinnee Faculitii Medisinii

M.barnoota Fayyaa Hawaasaa

Dhukaa hayyamama dhuunffaa

Qoannoo fedhii dhalafii fayyadama qusannoo maatii namoota vaayirasii HIV wajjin jiraachaa qoricha farra HIV fudhachaa hordofiirra jiranii, Asalla, Oromia.

Maqaan koo ----------jedhama, qaama garee Yunivarsitii Finffinnee kan hospitaalafii buufataalee fayyaarratti namoota HIV wajjin jiraachaa qorcha fudhataa hordofii kunuunsa irra jiran wajjin qo'annoo adeemifnu dha. Qo'annoon kun kan godhamu fedhii dhalaafii fayyadama qusannoo maatii kan namoota vaayirasii HIV/ AIDS wajjin jiranii irratti. Qo'annichi midhaa tokkooyyuu sirratti hinfidu, daqiiqotta gaafiif deebii sana fudhatuun alatti jechu dha. Odeeffannoon kun faayidaa qo'nnootiin ala hin ba'u ,na'amani, qo'annichaaf qofa oola.Isin ammoo diduufiis ta'e jiddutti dhiisuf mirga guutuu qabdu.

Odeeffannoon isin nuuf kennitan bu'aa guddan qabu kayoo jijjirama kenninsa tajaajila dhalafii qusnnoo maatii, sagantaa hojiirra olchufii, imaammata namoota HIV/AIDS wajjin jiraataniif gargaarsa kan qabu dha.

Amma qo'anicha keesst hirmaachuf fedhii qabduu?

Yoo fedhii horatan itti fufuu nidandeechan.

Galatooma.

Yoo fedhii hinqabaannee akka hirmaatan hin dirqisiisnaa.

Galatoomaa.

Maqaa Gaafataa----------Mallatoo----------

Guyyaa gaafii----------Maqaa to'ataa----------Mallatoo----------

Guyyaa laallame----------Bu'aa-------

Xumuurame----------Hinxumuuramnne----------

Kan biraa ibsii----------

Kutaa I:- Gaafilee hawaasummaa ilaallatan

Lakk.	Gaafii	Deebii	Skip
G101	Umriin keessan waggaa meeqa?	----------	
G102	Saala Gaafatamaa	Dhiira Dhalaa	
G103	Amantaa keessan?	1.Ortodoksii 2.Katolkii 3.Muslima 4.Protestantii 89. Kan braa,ibsii----------	
G104	Sadarkaa barnootaa?	1. 1ffaa__8ffaa 2. 9ffaa__10ffaa 3. 11ffaa__12ffaa 4. College and above	
G105	Saba Keessan?	1. Oromoo 2. Amaara 3. Guraagee 4. Tigree 89. Kan braa,ibsii ----------	
G106	Fuudha/Heeruma keessan?	1.Fuudhe/Heerume 2.Adda/Kophaa 3.Narraa du'e 4.Hiike 5.Namin wal fuune hinjiru 99. Debiin hijiru	
G107	Hojii keessan?	1.Barataa/uu 2.Daldala 3.Haadhamanaa 4.Hojii guyyaa	

		5.Qotebulaa 6.Manbunaatti saalqunnamtii 7.Hojataa mootummaa 8.Qaxarii dhuunffaa 89. Kan braa,ibsii ----------	

Kutaa II: Odeeffaannoo fedhii hormaataa

G108	Kana dura deettee jirtaa?	1. Eeyyen 2. Lakki	
G109	Kan lubbu qabu meeqa deeche?	1. Lakk ijoollee 2.Kan lubbuun jiru hinqabu-- 89. Kan braa,ibsii----------	
G110	Amma ijoolee meeqa qabda?	1. Lakkofsa ibsi---------- 2. Ijoollemaa hinqabu 3. Kan lubbu qabu hindhalle 99. Debiin hijiru 89 Kan braa,ibsii ----------	
G111	Erga HIV qabaachu barte booda deechertaa?	1. Eeyyen 2. Lakki 89. Kan braa,ibsii----------	
G112	Da'ima kee xiqqa umriin hangam?	----------	
G113	Ulfa darbe kanarratti qusannoo maatii fayyadamteertaa?	1. Eeyyen 2. Lakki	
G114	Ulfa darbe san fedhiidhanii/saganteeffattetii?	1. Eeyyen 2. Lakki 99. Debiin hijiru 89. Kan braa,ibsii----------	
G115	Amma ati/Haatmanaakee ulfaa?	1. Eeyyen	

		2. Lakki 3. Hinbeeku	
G116	Fedhii ujullee qabdaa?	1. Eeyyen---------- 2. Lakki---------- 3. Hinbeeku 99. Deebin hijiru 89. Kan braa,ibsii ----------	Lakki G 120 tti darb
G117	Yoo debiin G116 eyyen ta'e, of dura ijoollee meeqa barbaada?	1. Lakk barressi ----------	
G118	Yoo debiin G116 eyyen ta'e, Maaliif dhaluu/dhalchuu barbaade?	1. Namooni akka hinbeeknef 2. adda bauf fo'amuu hambbisuf 3. Sagnii koo bakka buusuf 4. Maattii kiyya dhoksuf 5. Maatin kiyyaa nibarbaadu 89. Kan braa,ibsii ----------	
G119	Yoo debiin G116 eyyen ta'e, Yoom ijoollee horatuu barbaada?	1. Oggaa tokkoo dura 2. Oggaa tokkoo duraa 3. Oggaa lam booda 4. Yoo fayyumma natti dhagahame 5. Yoo CD4 siirrate 6. Akkuma ta'etti 7. An-hinbeeku 89. Kan braa,ibsii ----------	
G120	Yoo tasauma ulfoofte maal goota?	1. Ogeessa fayyatiin mari'annen da'a. 2. Useen dhala 3. Nan baasisa 89. Kan braa,ibsii ----------	

Kutaa III :Odeeffannoo fayyadama qusanno maatii

G121	HIV qabaachu beekun dura qusannoo maatii fayyadamtee beektaa?	1. Eyyen 2. Lakki 3. Hin-yaadadhu 99. Deebin hinjiru 89. Kan braa,ibsii ----------	
G122	Yoo deebin G121Eyen ta'e,mala qusanno kamitti fayyadamte?	1. Dhiisuu 2. Condomii 3. Pillsi 4. Limmoo 5. Implantii 6. Ujumoo cufuu / Vasectomy 89. Kan braa,ibsii ----------	
G123	Erga HIV qabaachukee beekte booda qusanno maatii fayyadamtertaa?	1. Eyyen 2. Lakki 99. Deebin Hinjiru 89. Kanbraa ibsi----------	
G124	Gorsaa kee wajjin dhimma fayyaa walhormaataarratti mari'attertaa?	1. Eyyen 2. Lakki 89. Kanbraa ibsi ----------	
G125	Yoo G124 eyyen ta'e mataduree kamrratti marattan?	1. Fedhii hormaataa maamilaa 2. Mala amma itti fayyadamu 3. Hadhaa gara da'imaa 4. Mala lama 5. Condomii Fayyadamuu 89. Kanbraa ibsi ----------	
G126	Ogeessa siyyalu wajjin dhimma qusannoo maatiirratti mari'attanii?	1. Eyyen 2. Lakki 89. Kanbraa ibsi ----------	
G127	G127 eyyen yoo ta'e, Mala akkamir-	1. Dhiisuu	

	ratti mari'attan ?	2. Condomii 3. Pillsii 4. Limmoo 5. Implantii 6. Ujumoo cufuu/Vasectomy 89. Kanbraa ibsi ----------	
G128	Kilinika ART raatti tajaajilli qusannoo maatii sif kennamee beekaa?	1. Eyyen 2. Lakki 3. Deebin hijjiru	
G129	G129 eyyen yoo ta'e, Mala qusannoo maatii kamtuu sif kenname?	1. Dhiisuu 2. Condomii 3. Pillsii 4. Limmoo 5. Implantii 6. Ujumo cufuu / Vasectomy 89. Kanbraa ibsi ----------	
G130	Deebin G129 Lakki yoo ta'e, gara qusanno maatiif ergamteertaa?	1. Eyyen 2. Lakki	
G131	Deebin G130 eyyen too ta'e, garamtti ergamtee?	1. Klinika qusannoo maatii 2. Mana fayyaa 3. Klinikii Qusnno maatii tajaajila iddoo biroo 4. FGA/Klinkii wolda gursaaf qusanno maatii 5. Kan birraaibsi----------	
G132	Amma isin/maatin keessan Karoora maatii fayyadammajirtuu?	1. Eyyen 2. Lakki 3. Deebin hijiru 4. An hinbeeku	
G133	Yoo G132 eyyen ta'e,mala kattii	1. Dhiisuu	

	fayyadamtan?	2. Condomii 3. Pillsii 4. Limmoo 5. Implant 6. Ujumoo cufuu / Vasectomy 89. Kanbiraa ibsi----------	
G134	Yoo G132 eyyen ta'e,maalif isa amaa ittifayyadamtan kana filattan?	1. Oggesi fayya fleeti 2. Fayya kiyyan walta'e 3. Hiryyaa kiyyaarrattin ilaale 89. Kanbiraa ibsi ----------	
G135	Yoo qusanno maattit fayyadamaa jiraatte, HIV qabaachu kee ibsiteefii jirtaa?	1. Eyyen 2. Lakki 89. Kanbiraa ibsi ----------	
G136	Yoo G135 lakki ta'e, maaliif hin'ibsn?	1. Kan-nataajilu hin amanu(QM) 2. Adda-ba'uufi foo'amu sodadhet 3. Gargaarsa saanii hi-fedhu 99. Deebin hijiru 89. Kanbiraa ibsi ----------	
G137	Yoo G132 laki ta'e, maaliif mala qusannoo maatii itti hinfayyadamnnee?	1. Midhaa qorchaa sodaadhee 2. Maatiin kiyyaa hinfedhu 3. Abbaa/haadha warraa hinqabu 4. Da'uu barbaada 5. Condomiin fayyadma 89. Kanbiraa ibsi ----------	
G138	Yoo G 132 lakki ta'e, ati/maatiin kee mala qusannoo maatii of duraaf itti fayyadamtuu?	1. Eyyen 2. Lakki 3. Ani hinbeeku 89. Kanbiraa ibsi ----------	

G139	Yoo G138 eyyen ta'e, qusanno itti fayyadamuu yoom jalqabdu?	1. Ammuma 2. Ji'a jaha keessatti 3. Oggaa tokko keessatti 4. Oggaa tokko booda 5. Ani hinbeeku	
G140	Yoo G138 eyeen, mala kamtti fayyadamu fedhii qabda?	1. Dhiisuu 2. Condomii 3. Pillsii 4. Limmoo 5. Implant 6. Ujumoo cufuu / Vasectomy 89. Kanbiraa ibsi ----------	
G141	Mala qusannoo maatii fayyadmuu maaliif barbaadae?	1. Dhala walirraa fageechuf 2. Lakkofsa joollee murteessuf 3. Dhala dhaabuf 4. Akka hun dhallef 89. Kanbiraa ibsi ----------	
G142	Tajjajila eessa irraa arggachuu filatta?	1.Kliniki farra HIV irraa 2. Q.M.mana yaala mootumma irraa 3 .FGA/Klinkii wolda gorsaaf qusanno 89. kanbraa, ibis-----	

Kutaa V: Odeeffanoo gorsa fe'irratti hunda'efii qoranna dhigaa fii yaala farra HIV

G143	HIV qabaachuu kee erga beekte hangam ture?	1.Yeroo lakkoofsa brresi---------- 2.Ani hinyaadadhu 89. Kan braa,ibs------	
G144	Hangga qorich HIV jalqabde hanggam ture?	1.Yeroo lakkoofsa brresi ------- 2.Ani hinyaadadhu	

		99. Debin hinjiru	
G145	Erga qoricha jalqabdee booda fayyan kee maal fakkata?	1. Natti fure 2. Jijjirama hinqabu 3. Natti cime 99. Debin hijiru 89. Kan biraa, ibs----	
G146	CD4 kee inni booda kanaa meeqa?	----------	
G147	Abbaa/Haadhawarra kee dhiiga qoratamanii jiruu?	1. Eyyen 2. Lakki 3. Ani hinbeku	
G148	Yoo G147 eyyen ta'e, bu'a qorranno maali dha?	1. HIV qaba 2. HIV hinqabu 3. Debin hijru	
G149	Yoo G147 lakki ta'e, sababin isaa maali?	1. Ani wanta qoratameef 2. Kan koo itti hinhimnne 89. Kan biraa ibsi----	

Kuta VI : Odeeffanno saalqunnamttif cndomii

G150	Ogeessi gorsafi yaala HIV kennu waa'e saalqunnamttii, da'ima horachu fii QM isn mar'achiseeraa?	1. Eyyen 2. Lakki 89. Kan biraa, ibsi---	
G151	Yoo G150 eyyen ta'e, hudaa sirritti mar'achiseraa?	1. Eyyen 2. Lakki 3. Ani hinbeku 89. Kan biraa, ibsi --	
G152	Yoo G151 lakki ta'e, ogeessicha wajjin mar'achuu barbaaduu?	1. Eyyen 2. Lakki Ani hinbeku	

		89. Kan biraa, ibsi ------	
G153	Erga of beektan, ji'ota sagal darban keessatti saal-qunnamttii gotanii jirtuu?	1. Eyyen 2. Lakki 3. Ani hin yaadadhu	**Lakki** **G 158 tti darb**
Q154	Yoo G153 eyyen ta'e, condomitti fayyadamttee?	1. Eyyen 2. Lakki 3. Ani hin yaadadhu 89. Kan biraa, ibsi --	**Lakki** **G157 tti darb**
Q155	Yoo GQ 154 eyyen ta'e si'a hagamii?	1. Yeroo huddaa 2. Yeroo tokko tokko 89. Kan biraa, ibsi ---	
G156	Yoo GQ154 eyyen ta'e, maalif condomi fayyadamtan ?	1. Ulfa ittisuf 2. Dhibee saalqunnamtti ittisuf 3. Maatin kiyya HIV hinqaban 4. Ogeessi fayya nagorseet 5. Namootatti akka hindabarree 89. Kan biraa, ibsi --------	
G157	Yoo G154 lakki ta'e , maaliif condomii hinfayyadaminne?	1. Da'ima argachuun barbaade 2. Maatiinkoos HIV wnata qabaniif 3. Maatiin koo wanta hin jaalannef 89. Kan biraa,ibsi---------	
G158	Saal-qunnamtti namoota	1. Eyyen	

	hedduwaliin qabda?	2. Lakki 3. Debin hijiru	
G159	Hundduma isaani waliin, yeroohanggam condomitti fayyadamtterta?	1. Yeroo hunddaa 2. Yeroo muraasa 3. Hinfayyadamnne 89. Kanbraa,ibsi---------	
G160	Jireegn ke keessatti ulffi sirraa ba'ee beekaa?	1. Eyyen 2. Lakki 3. Debin hinjru	
G161	Yoo G160 eyyen ta'e, Yoomi dha?	Yeroo baressi----------	
G162	Isin/maatiin keessan dhukuba qamsalatin qabmtani/mani beeku/tu?	1. Eyyen 2. Lakki 3. Debin hinjru	
G163	Qorcha ulfa'uu tasaa ittisu beektaa?	1. Eyyen 2. Lakki	
G164	Qorcha ulfa'u tasaa dhorgu yoo siif kenname itti fayyadamtaa?	1. Eyyen 2. Lakki	

Annex III: In-depth interview guide (English)

Addis Ababa University Faculty of Medicine School of Public Health Individual consent form.

Study on fertility and family planning utilization in HIV positive people on ART follow up care in Arsi/Asella/ Oromia National Regional state

My name is ----------I am a part of research work team of Addis Ababa University at hospital and health centers on HIV positive 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 records so that we could not miss any of your ideas while trying to take note. 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!

Question for in depth interview

How old are 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 level of education?

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 important to have a children?

Family planning use

How are you /your partner's family planning use before and current? (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, why?

Annex IV: Gaafiif beebii gadfagoo (Afan Oromo)

Univarsiitii Finffinne Fuculity Medisinii Manbarusa Fayyaa Hawaasaa Unka hayyamammmaa dhunffaa

Qoannoo fedhii dhalafii fayyadama qusannoo maatii namoota vaayirasii HIV wajjin jiraachaa qoricha farra HIV fudhachaa hordofiirra jiranii, Asalla, Oromia.

Maqaan koo ----------jedhama, qaama garee Yunivarsitii Finffinnee kan hospitaalafii buufataalee fayyaarratti namoota HIV wajjin jiraachaa qorcha fudhataa hordofii kunuunsa irra jiran wajjin qo'annoo adeemifnu dha. Qo'annoon kun kan godhamu fedhii dhalaafii fayyadama qusannoo maatii kan namoota vaayirasii HIV/ AIDS wajjin jiranii irratti. Qo'annichi midhaa tokkooyyuu sirratti hinfidu, daqiiqotta gaafiif deebii sana fudhatuun alatti jechu dha. Odeeffannoon kun faayidaa qo'nnootiin ala hin ba'u ,na'amani, qo'annichaaf qofa oola.Isin ammoo diduufiis ta'e jiddutti dhiisuf mirga guutuu qabdu.

Odeeffannoon isin nuuf kennitan bu'aa guddan qabu kayoo jijjirama kenninsa tajaajila dhalafii qusnnoo maatii, sagantaa hojiirra olchufii, imaammata namoota HIV/AIDS wajjin jiraataniif gargaarsa kan qabu dha.

Yaada ati naaf kennitu hundda teepiidhan waraabnna. Kunmoo akka yaaadicha qabachu mirkaneeffannuf gargaara. Odeeffannoo isn irraa arggadhu hunddaa iccitiidha akka eggamu siifin nan mirkkaneessa. Ammas yoo barbaade addaan kuta yoo jette murttin kee kabajamaa dha.

Amma qo'anicha keessat hirmaachuf fedhii qabduu?

Yoo fedhii horatan itti fufuu nidandeechan.

Galatooma.

Gaafilee Marii gadi fagoo.

Umriin keessan waggaa meeqa?

Maatii horattanii?

Amma hojiin keessan maali dha?

Sabummaan keessan maal?

Amanttaan keessan maal?

Galiin keessan kan jaa meeqa?

Sadarkkaan baruumssa keessani hagam?

Eessa jiraattu?

Fedhii daa'ima horatuu

Amma ijoollee lubbun jitru meeqa qabdu? (Dhigaa issanii,HIV)

Erga dhiga kee HIV qabaatu bartee as daa'ima horatee?

Ofdura daa'ima arggatuu barbaaddaa?

Maaliif daa'ima arggatuu barbaadda?

Daa'ima meeqa dabalaan arggatuu barbaadda?

Ijoollee qabaachuun hanggam takka barbaachisaa dha?

Qusannoo maatiitt fayyadamuu

Qussanno maatii fayyadamuun keessan/maatii keessanii yeroodurafii amma akkam(mala itti fayydaman)

Mala itti fayyadamttan kan maaliif / akkamitti filattan?

Yoo fayyadamaa jiraattan /barbaaddan ergga dhiiga qoratamttan booda maaliif?

Isin/maatii keessan fayyadamuufii fayyadamuu dhabuun bu'aa maal qaba?

Fayyadama qusannoo maattii irratti wantti isn dhibu maal fa'a?

Ogeessa qusannoo maatii isniif kennu wa'e dhiga keessanii itti himtanii jirtuu?Maaliif?Maaliif himuu dhabdan?

Dhimma dhiiga keessanii maatii keessaniif himtaniirtuu?Eeyyen, maaliif?Lakki, maaliif?

Declarations

I the undersigned, declare that this thesis is my original work and has not been presented for a degree in this or other university, and all sources used for this thesis have been fully acknowledged.

Name of student: Legesse Tadesse (MD)

Signature ----------

Date of submission----------

Place ----------

This thesis has been submitted with my approval as University Advisors,

Dr Ayele Belachew

Signature----------

Date ----------