ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF SERO STATUS DISCLOSURE AND SEXUAL BEHAVIOR AMONG PLWHAS WHO ARE ON ART IN ASSELA TOWN HEALTH FACILITIES, ARSI ZONE, OROMIYA REGION

By

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A thesis submitted to School of Graduate Studies of Addis Ababa University in partial fulfilment of the requirements for the Degree of Masters of Public Health

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Acronyms

AA	Addis Ababa
AAU	Addis Ababa University
AIDS	Acquired Immune Deficiency Syndrome
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
ETB	Ethiopian Birr
HAART	Highly active antiretroviral therapy
HIV	Human Immune Deficiency Virus
OR	Odds Ratio
PIHCT	Provider Initiative HIV Counseling and Testing
PLWHA	People Leaving with HIV AIDS
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
STD	Sexually Transmitted Diseases
UNAIDS	United nation' program on HIV /AIDS
VCT	Voluntary Counseling and Testing

Abstract

Background: It has been three decades since HIV started its speared across the globe with a devastating impact on populations and economies of countries and regions, some more than others. Sub-Saharan Africa continues to bear an inordinate share of the global HIV burden, though epidemics across countries in Africa vary considerably, Ethiopia is one of the sub-Saharan countries worst affected by the HIV/AIDS pandemic. There are concerns that increased use of ART may be associated with increased sexual risk taking. There fore it is essential to see sero status disclosure and sexual behavior of PLWHAS who are taking ART as this has implication for prevention of HIV epidemic.

Objective: To assess sero status disclosure and sexual behavior among PLWHA who are on ART in Assela town health facilities, Arsi Zone, Oromiya Region**.**

Methodology: An institution based cross sectional study was conducted using both quantitative and qualitative methods from February to April 2013 among 324 PLWHAs who are taking ART from Assela hospital and Assela health center. Systematic random sampling method was used to select the study participant. Structured and pretested questionnaire was used for data collection. To collect qualitative data in-depth interview was conducted. The data were summarized in percentages, table and graphs; crude and adjusted odds ratios, logistic regression analysis were used to explore associations between different variables and HIV disclosure and sexual behavior.

Result: More than half of the respondents 167(51.5%) were females. The mean age of the study population was 36.33 ($\pm$7.79) years. The majority 264(81.5%) were married. Over all 94.1% of the respondents had disclosed their HIV positive result to their regular partner and the rest (5.9%) did not disclosed. Knowledge of partners' sero status, prior discussion about HIV, type of relation ship with partner, living in the same home and duration of HIV test were found to be determinants of sero status disclosure. Respondents whose duration of test is greater than two years were found to have eight fold increased odds of disclosure compared to those who had less than two years (AOR:8.4; 95% CI: 1.21, 57.7). The proportion of multiple partners in this study was (6%) and consistent condom use was (60.8%). The main reason reported for not using condom were partner's refusal (37.4%).

Conclusion: Although the magnitude of HIV positive status disclosure to regular partner found in this study was encouraging, lack of disclosure by a minority resulted in a limited ability to engage in preventive behaviors. There fore HIV prevention programs and counseling efforts should focus on disclosure of HIV test results to all type of partner and consistent condom use with all type of partners.

Keywords: sero status disclosure, sexual behavior, condom use, PLWHA

1. Introduction

1.1 Background

It has been three decades since HIV started its spread across the globe with a devastating impact on populations and economies of countries and regions, some more than others. United nation program on HIV/AIDS (UNAIDS) estimates that there were 34 million [31600000- 35200000] people living with HIV at the end of 2011. At the same time, there were an estimated 2.7million [2.3 million – 2.8 million] people who became newly infected with HIV(1). Sub-Saharan Africa continues to bear an inordinate share of the global HIV burden, though epidemics across countries in Africa vary considerably 22.9 million people living with HIV/AIDS (PLWHA) live in the region, representing about 68 percent of the total worldwide(2). Ethiopia is one of the sub-Saharan countries worst affected by the HIV/AIDS pandemic. According to the Ministry of Health of Ethiopia report published in 2011, approximately 1.1 million people were living with HIV. In the same year, the national adult HIV prevalence was estimated to be 1.5% and a total of 34,936 people were newly infected with HIV, of whom 14,967 were adults. The primary mode of transmission of HIV is through unprotected sex with infected individuals, which constitutes 88% of transmissions (3, 4).

Access to antiretroviral therapy in low and middle income countries increased from 400,000 in 2003 to 6.65 million in 2012, 47% coverage of people eligible to treatment, resulting in substantial declines in the number of people dying from AIDS related causes during the past decade(5, 6) . As a result the perceived threat of HIV has decreased with increased HIV treatment optimism and beliefs that HIV treatment reduce the risk for HIV transmission (7) .

One study on sero-status disclosure in Uganda indicates that some ART patients continued having unprotected sexual intercourse with multiple partners without disclosure even though they knew their HIV status(8) . Lack of knowledge of partner's sero-status and low levels of disclosure of one's own HIV status, coupled with inconsistent condom use, set the stage for HIV transmission to sero-discordant partners, especially within regular partner relationships.There are limited studies showing sero status disclosure and sexual behavior of HIV patients who are taking ART for effective prevention strategies in our country, because disclosure is the center of the target to achieve the desire output in HIV prevention.

1.2 Statement of the Problem

Approximately 1.1 million Ethiopians were living with HIV/AIDS in 2011 of which 336,160 were eligible for ART. Recent evidence confirms that expanded access to ART is reducing AIDS mortality rates in Ethiopia. Oromiya region has large number of PLWHAs with approximately 323,402 peoples are living with HIV among these 95,515 currently need ART. ART was started in Assela town health institution in 2005 and the number of PLWHAs on follow up during the study period were 8,376 among these 2,767 of them were taking ART from Assela hospital and health center.

There are concerns that increased use of ART may be associated with increased sexual risk taking. As ART becomes increasingly available in many African countries it is important to understand the effects on the sexual desires and behaviors of users as this has implications for the spread and control of the HIV epidemic.

Although PLWHAs are given knowledge about safer sexual behavior during the ART clinic sessions, there is growing evidence suggests that people on ART are increasingly becoming sexually active and many of them are involved in sexual activity with partners who are HIV negative. Some of these people practice unsafe sexual behavior patterns such as not using condoms and having multiple sexual partners, without disclosure of their sero status. These put them at risk of contracting re-infections with another strain of the virus and lead to problems with drug resistance. In addition there are limited studies with regard to sero status disclosure pattern and sexual behavior of PLWHA who are taking ART in Sub-Saharan African countries (SSA) as well in our country. Thus, the current study was tried to assess disclosure pattern and sexual behavior among HIV positive ART attendants in Assela town health institution, Arsi zone, oromiya region which could further contribute to sero status disclosure and promotional use of condom as preventive measures in Ethiopia.

2. Literature review

2.1 Sero-status Disclosure

Disclosing one's HIV test result to a sexual partner is an important factor in HIV/AIDS prevention interventions. Disclosure of sero status enables for improved access to prevention and treatment programs provides increased opportunities for risk reduction and helps in planning for the future(9). According to one study in South Africa on HIV disclosure behavior among sero-concordant, sero-discordant and unknown HIV status partners who are on ART treatment. The result reflects that HIV disclosure varies according to the type of relationship that one is involved in. If involved in a sero-concordant relationship or sero-discordant relationship or having a relationship whereby the partners' HIV status is not known, the disclosure patterns always vary (10). In addition the study on HIV Sero-status Disclosure and Sexual Behaviour among PLWHA in Uganda show that some ART patients continued having unprotected sexual intercourse without disclosing even though they knew their HIV status. Similar results were also found in the study conducted by Simbayi et al. (2007) that participants who had not disclosed were significantly more likely to have multiple partners, HIV negative partners, partners with unknown HIV status and unprotected sex with non-concordant sex partners (11).

According to study done in Nigeria Two hundred and seventy two of the interviewed women had disclosed their HIV status, giving a sero-status disclosure rate of 97.1%. Out of this number, 90% disclosed to their husbands; 23.5% to priests/pastors and 11.4% to a close family members (12). As one study on Prevalence and correlates of sero-status disclosure in HIV-infected adults attending the follow up and treatment clinic in Barbados Overall, 64 (58.2%) of those interviewed, had disclosed their HIV status to significant others while 46(41.8%) had not disclosed their HIV status to any body, other than their health care providers. Sixty (54.5%) persons had disclosed their HIV status to one or more of their family members other than their sex partner and 52(47.2%) had disclosed their HIV status to one or more of their sex partners (13). As reasons for disclosure of HIV Status by People Living with HIV/AIDS and in HIV Care in Uganda shows Most, (95%) respondents reported disclosing to someone; among these, 84% disclosed to family members, 63% to friends, 21% to workplace colleagues, and 18% to others. The most common reasons for disclosure were to receive support (76%), (14).

A study done in southwest Ethiopia Among clinical service users (94.5%) indicated that they have disclosed their result to at least one individual and 640 (90.2%) respondents disclosed their result to their current main partner. However, among those disclosed 91 (14.2%) had had sex with their partner before telling their result to their partner. Of these sexual encounters 63(69.2%), 14 (15.4%) and 14 (15.4%) occurred with HIV positive, HIV negative and unknown HIV status partners, respectively(15) . In support of these study on Gender difference on sero-status disclosure show that (80.7% of men and 78.2% of women) reported that they knew their partner's HIV status. Most had HIV-positive partners; however, 13.1% of men and 10.8% of women reported having HIV-negative partners, and 19.3% of men and 21.8% of women had sexual partners whose HIV status they did not know(16).

Another study among Adult Clinical Service Users in Kemissie District, Northeast Ethiopia revealed that (93.1%) had disclosed their results to their main current sexual partner. Concerning disclosure to families and friends, 263 (73.1%) had disclosed their results to at least one of their families and 219 (60.8%) had told their result to one or more of their friends. For those who did not disclose their results to their main partner the main reasons were fear of divorce 8(32%), fear of stigma and discrimination 8 (32%), fear of confidentiality 2(8%) fear of accusation of infidelity 3(12%) and fear of physical abuse 4 (16%)(17).

According to a study done on HIV positive status disclosure to sexual partner among women attending ART clinic at Hawassa University Referral Hospital, SNNPR, Ethiopia. Overall 85.7% of the women had disclosed their HIV positive status to sexual partner. Main barriers of disclosure reported by non-disclosed subjects were; fear of abandonment, fear of break-up in relationship and fear of stigma. Compared with married women, those women who were in a cohabiting relationship were less likely to disclose their HIV status to sexual partners (AOR 0.16; 95% CI 0.04, 0.60); women who did not know HIV status of their sexual partners were less likely to disclose their HIV positive status than their counter parts (AOR 0.02; 95% CI 0.00, 0.08) and women who had been on ART for more than one year were more likely to disclose their HIV positive status than the reference groups (AOR 8.62; 95% CI 1.35, 55.22) (18) .

2.2. Determinants of sero status disclosure

As one study on Determinants and outcomes of disclosing sero status to sexual partners among women in Mettu and Gore towns, Illubabor Zone southwest Ethiopia show that 69% of the women reported that they had shared their HIV test results with their partners. Among the women who did not disclose their HIV status 62.5% said that it was due to fear of partner's reaction (fear of abandonment, rejection and accusation of infidelity). Condom use was also found to be high among couples that disclosed their HIV/status than those who did not do so and in the same study Women who hold prior discussions about HIV and HIV test are more likely to disclose their status than who do have not discuss the matter with partners ($P<0.05$) (19).

According to one study on determinants of sero status disclosure in Jimma University Hospital revealed that marital statu, stayed for more than four years in relation, with educational level of primary or less and those who perceive themselves as not religious were found to disclose significantly than their counterparts(15, 19).

As one study on disclosure of HIV Positive Result to a Sexual Partner among Adult Clinical Service Users in Kemissie District, Northeast Ethiopia shows that those who knew their partner's status were 16.7 times more likely to disclose compared to those who did not know their partner's status (OR=16.7, 95%CI, 5.7-49.2). Clients who disclosed were more likely to have used condom regularly when compared to those who did not disclose (OR= 5.9,95% CI, 1.98-17.5)(17, 19).

2.3 Sexual Behaviour among PLWHA

According to one study in America on (HIV)-positive injection drug-using women who reported unprotected vaginal and/or anal sex with HIV-negative or unknown sero status (sero discordant) male partners revealed that, 39%(144/370) and 40% (148/370) reported vaginal and/or anal sex with sero-discordant main and casual partners, respectively. Sixty percent of women inconsistently used condoms with their sero-discordant main partners, whereas 53% did so with casual partners. These findings suggest that there are widespread opportunities for the sexual transmission of HIV from drug-using women to HIV-uninfected men, and that reasons vary by type of partnership(20) . one finding on Impact of Highly Active Antiretroviral Treatment on HIV Sero-incidence Among Men Who Have Sex With Men: in San Francisco the percentage of MSM reporting both unprotected anal sex and multiple sexual partners increased from 24% to 45% ($P<.001$). The decreases in respondents' reports of always using condoms and the increases in their reports of

unprotected anal intercourse and multiple partners seen between 1994 and 1999 were statistically significant ($P<.05$) (21, 22).

one study on Antiretroviral resistance and high-risk transmission behavior among HIV-positive patients in clinical care show that among 333 HIV-positive patients, 75 (23%) had unprotected sex during the previous 3-months, resulting in 1126 unprotected sexual events with 191 partners of whom 155 were believed by patients to be HIV-negative or of unknown status. Eighteen of the 75 (24%) had resistant HIV and 207 unprotected sexual events, exposing 18% of the HIV- or status unknown partners (23, 24).

As one study in Uganda on Changes in sexual behavior and risk of HIV transmission after antiretroviral therapy and prevention interventions revealed that Providing ART, prevention counseling, and partner VCT reduced self-reported sexual risk behavior among HIV infected adults in rural Uganda and also substantially reduced the risk of transmission to their uninfected partners. Overall, there was a 70% reduction in risky sex and a 98% reduction in the number of estimated sero conversions after 6 months. These findings support arguments for incorporating prevention into ART programs and provide initial empirical evidence that ART, when combined with prevention interventions, can help reduce HIV transmission in Africa (25) .

According to another study in Kampala Uganda on Sexual behaviors revealed that 323 (57.9%) were sexually active of which 176 (54.5%) had unprotected sex at last sexual intercourse. Majority (63.4%) of married individuals were unaware of their partner's HIV status. Female gender (PR=2.97; 95% CI: 1.85, 4.79), being married (PR=1.48; 95% CI: 1.06, 2.06), and reporting unprotected sex prior to ART (PR=1.68; 95% CI: 1.16, 2.42) were among factors independently associated with unprotected sex while on ART (26).

A cording to study conducted on Risky sexual practices and related factors among ART attendees in Addis Ababa Public Hospitals, More than one-third (36.9%) had a history of risky sexual practices in the three months prior to the study. The major reasons given for not using condoms were: partner's dislike of them, both partners being positive for HIV and the desire to have a child. Factors associated with risky sexual practices included: lack of discussion about condom use (AOR = 7.23, 95% CI: 4.14, 12.63) (27). In support of these one study on sexual behavior and determinants of condom use among HIV/AIDS patients who are on art in north shewa zone show

that 246(76.2%) were never used condom before testing HIV. Among these respondents who were using condom, it was only 14(4.3%) who were consistently using condom whereas the rest 77(23.8%) were not used(28).

2.4 Type of sexual partner

According to one study on recent multiple sexual partners and HIV transmission risks among people living with HIV/AIDS in Botswana show that among the 247 participants who had one sex partner in the previous 3 months, 168 (68%) identified that person as a steady/regular sex partner and 79 (32%) identified the person as a non-steady/casual partner. For the 62 participants with multiple sex partners, (47%) were identified as steady/regular and the remaining 74 (53%) were identified as non-steady partners. In addition, 91% of participants with only one sex partner had disclosed their HIV status to their steady partners, whereas 51% of participants with multiple sex partners had disclosed to their steady partners(29).

As one finding in Addis Ababa on type of partner and risky behavior show that Ninety percent of the respondents reported a single partner while the rest reported multiple partners. Multiple partners, was significantly associated with unprotected sex ($p = 0.001$). Among those with multiple partners, the majority (60%) were casual partners, while 19 (32.67%) reported both steady and casual partners, With regards to their partner's sero-status, 492(81.9%) were aware of their partner's sero - status 430 (87.5%) sero-positive and 62 (12.5%) sero-negative). The rest 105(17.5%) did not know their partner's sero-status. Those who engaged in little or no discussion with their partner about safe sex were more likely to engage in unprotected sex (75%vs 24%) and the difference was statistically significant at ($p < 0.001$)(27, 30).

2.5 Factors associated with condom use with sexual partner

According to study done on sexual risk behavior among HIV-positive persons in Kumasi, Ghana revealed that among Male and female participants aged 35-44 years had a 3.3-fold increased odd of condom use with regular sex partner (OR=3.3; 95% CI: 1.2-9.3). Participants who were divorced or widowed had a 2.8-fold increased odds of condom use with regular sex partner, while those whose sex partners had other sex partners and those who had disclosed their HIV status were 70% more

likely to use condoms with their regular sex partners. These associations were statistically significant(31)**.**

As study on Sexual Behaviors of People Living with HIV, Implications for Prevention with Positives revealed that participants receiving HAART were more likely to report condom use at last sex with regular partners than those receiving preventive therapy. More participants receiving HAART reported consistent condom use with HIV-positive partners (56% vs. 14%; p= 0.004) and partners of unknown status (56% vs. 16%; p = 0.004) than those receiving Preventive therapy (32).

A cording to study conducted on Risky sexual practices and related factors among ART attendees in Addis Ababa Public Hospitals , reasons stated for not using a condom included - partner did not want to use (25.1%); my partner was also HIV+ (24.3%); desire to have a child (18.1%); sex did not feel the same with a condom (12.5%); were drunk and didn't remember to use a condom (5.7%); use was against their religion (3.4%); fear of asking partner (2.8%); partner had started ART treatment and the use of another method of family planning were among the reasons mentioned (27, 33, 34) .

3. OBJECTIVES

3.1 General Objective:

To assess sero status disclosure and sexual behavior among PLWHAs who are on ART in Assela town health facilities, Arsi Zone, Oromiya Region

3.2 Specific Objectives:

1. To assess the degree of HIV status disclosure among PLWHA who are taking ART
2. To identify determinants of HIV status disclosure to sexual partner among PLWHA who are taking ART
3. To assess the sexual behavior of PLWHA who are taking ART
4. To identify factors that affect condom use among PLWHA who are taking ART

4. Methodology

4.1 Study area and period

The study was conducted from February, 2013 to April, 2013 in Assela town health facilities, which is found in Arsi Zone, Oromiya Region located 175 kilometers east of Addis Ababa, the capital city of Ethiopia.

Arsi zone is located in the Middle Eastern part of Oromiya Region and has a total population of over 2.9 million, constituting approximately an equal proportion of males (49.86%) and females (50.14%) population. The majority of the population, 90.2% is living in rural areas and Oromos are the predominant ethnic group.

The zone has one referral hospital, two district hospitals, 60 health centers and 497 health posts putting the geographical health coverage of the zone at 89%. Assela is the capital town of Arsi zone with a total population of 74,268 with sex distribution of 49.73% males and 50.27% females. The town has one zonal hospital and two health center. One of the health center and the hospital provides currently ART service. 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.

4.2 Study design

Facility based cross-sectional study was conducted from Feburary to April 2013 using quantitative research approach supplemented by qualitative methods.

4.3 Source population

All PLWHA attending ART clinic at Assela hospital and health center

4.4 Study population

PLWHA attending ART clinic and had tested positive at least six months prior to the study and started ART, had been sexually active in the past three months and were 18 years of age or above

Inclusion Criteria: PLWHAs who were registered in ART clinic, took ART, sexually active and his/her age is above 18 years

Exclusion Criteria: PLWHAs who were mentally or critically ill, sexually inactive and under 18 year during data collection time were excluded from study.

4.5 Sample size determination

Sample size (n) required for this study was calculated by using single population proportion (p); by taking the proportion of sero status disclosure from metu town which was 69% and 5% level of significance and 5% margin of error (precision) the sample size was 294, by considering 10% non response rate the final sample size was 324 PLWHAs on ART.

The sample size was calculated using the following formula:

$$n = \left(\frac{Z_{\alpha/2}}{d} \right)^2 P(1 - P)$$

With assumption of :

Desired precision (d) =0.05

Expected proportion (p) = 0.69 which is sero status disclosure rate from Mettu and Gore town

Z $\alpha/_2$ at 95% confidence interval =1.96

Based on the assumption, the calculated sample size (n_o) was

$$n = \frac{(1.96)^2 \text{ x} 0.69(0.31)}{(0.05)^2} = 329$$

And, using finite population correction formula to estimate final sample size (nf) from a finite target population (N)

$$nf = \frac{no}{1 + \frac{no}{N}}$$

nf = 294

Considering 10% for non response rate during the actual study then the sample size was **=324**

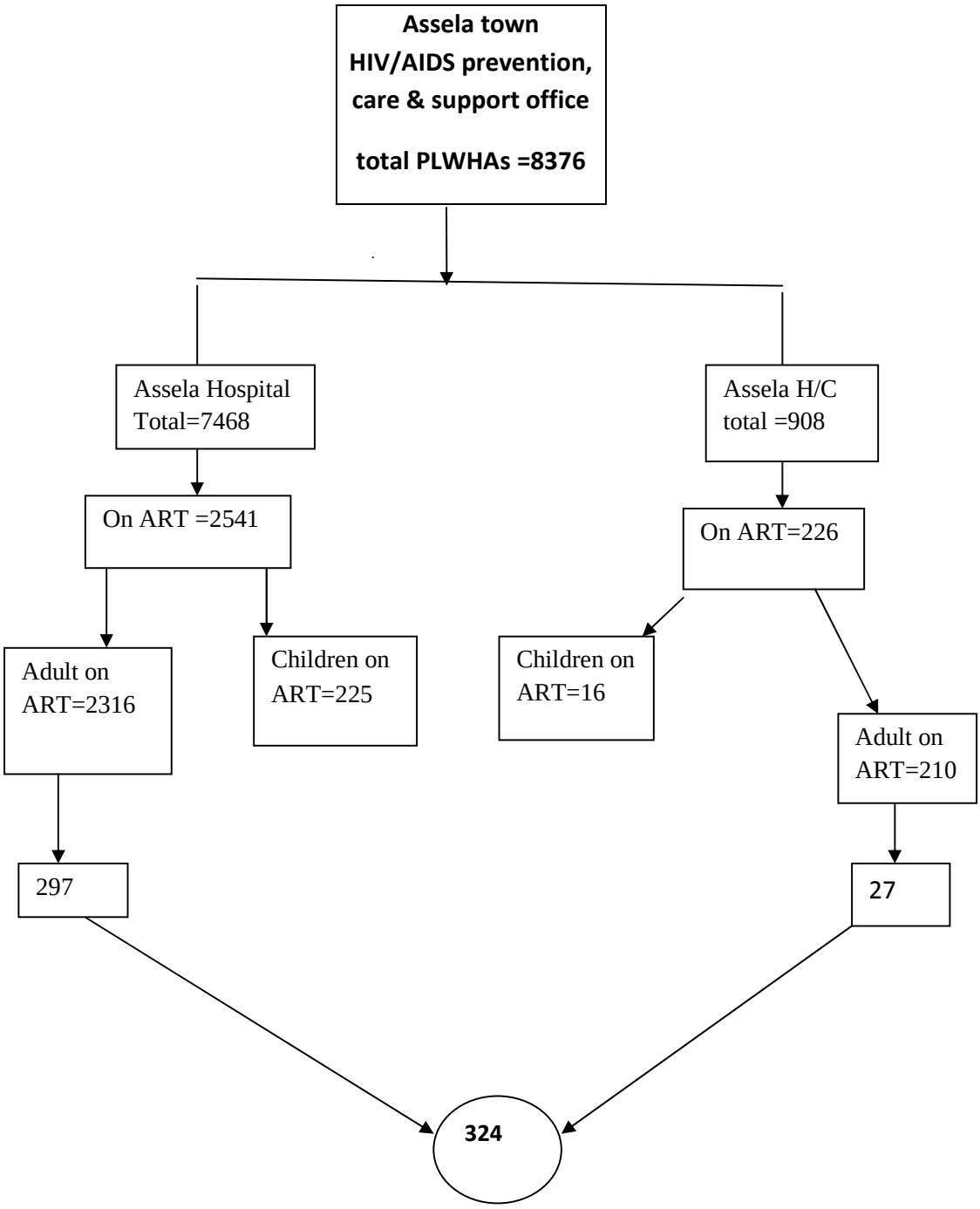
The sample size was splited in to two according to the number of follow up of study subjects in hospital and health center (proportionate to size). Therefore, 297 and 27 of PLWHA who are receiving ART were taken from each Health institution respectively

4.6 Sampling procedures

Quantitative:

The existing one governmental hospital and one health center that provides ART service in Assela town was taken. A unique ART ID number is used as sampling frame and then systematic random sampling method was used to select PLWHAs on ART who are eligible to participate in this study. To make the data collection easier the client appointment date also identified for PLWHAs who full filled the inclusion criteria. Based on their appointment date the selected PLWHAs were interviewed. The data was collected continuously all working days during the regular working hours until the sample size was achieved.

Qualitative: purposive sampling was used to take 10 PLWHAs and 4 key informants for the indepth interview.



Figer 1: Schematic presentation of sampling procedure, Assela town health institution, Arsi zone, Oromia Region, 2013

4.7 Variables of the Study

Dependent variable*:*

Sero status disclosure and consistent condom use

Independent variable*s*

Socio-demographic variables: Age, sex, ethnic group, religion, marital status, occupation

Relational factors: Number of Sexual partners ,discussion about HIV with partner , partner's Sero status ,HIV diagnosis time, ART initiation time ,relationship with partner, Safer sex Knowledge, and condom use

Educational and economic variables: Educational level, Job, monthly income and

Substance use: Alcohol, Cigarette smoking, khat chewing Hashish/ Shisha.

4.8 Data collections tool

Quantitative

Data was collected by pre-tasted questionnaire, which was adapted, from different studies (Lie GT, 2000 & Deribe *et al*., 2005).

Qualitative

Semi structured questioner for In-depth interview were used in qualitative study.

4.9 Data collection methods

A structured and standardized questionnaire which was prepared by reviewing prior study and other materials on the topics with some modification (annexII) was used. The questioners was prepared in English language and translated in to Afan Oromo and back to English by principal investigator and other personnel fluent in both languages to prevent possible miss understanding and misinterpretation. Three nurse data collectors and one Health Officer as supervisor were selected and Training was given on the objective, benefit of the study, individual's right, informed consent and techniques of the interview for two days. Before the actual data collection pursued a pre-test of the instrument and the procedure was conducted and corrective measures are taken. The selection of PLWHAs was based on the inclusion criteria with the help of the head of HIV/AIDS care unit.

Qualitative study

To enrich the information obtained by quantitative study, in-depth interview of one to one discussion was held for the qualitative part. The in-depth interviews were conducted by the principal investigator in a private room and each interview lasted for 30-40 minutes. Each interview was tape recorded and notes were taken during each in-depth and key informant interview.

4.10 Data quality control

The quality of data was controlled starting from the time of questionnaires preparations. The questionnaires were developed by reviewing relevant literatures on the subject to ensure reliability. First the questionnaire which was prepared by English was translated into Afaan Oromo. To insure the consistency of the tool it was translated back to English. Training was given for supervisors and data collectors on the purpose of study and procedures of data collection for 2 days prior to study. After completing the training, trainees were conducted a pre-test at non study health facility. Finally, we discussed on problem they encountered during pre-test and corrective measures were taken. During data collection, the supervisor was received questionnaires from data collectors and review for completeness, accuracy, and consistency. Correction measures were taken by discussing with the research team.

4.11 Data processing and analysis

The collected data were entered into computer for analysis by using Statistical packages: Epi-info version 3.5.1. After the entrance and completeness of all data, cleaning was done. Finally, the data were exported to SPSS version 17 for further analysis. Both the descriptive and Bivariate /multivariate logistic regression analysis were performed. Descriptive analyses were done by using frequency, mean, median, standard deviation, and percentages. Crude logistic regression were used to see relationship between one independent variable with outcome at time and adjust logistic regression were used to see relationship between many independent variables with outcome variable after controlling confounding factors. Significance level and association of variables were tested by using 95% confidence interval (C.I) and odd ratio. Chi-square analyses were used and p-value less than 0.05 were taken as statistically significant.

For qualitative data content analysis was used. The data was transcribed and translated word by word for analysis then descriptive summary was made by categorizing the response of the PLWHA into themes. Then the qualitative finding was triangulated with the quantitative part.

4.12 Operational Definitions

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

Disclosure pattern – the act (mode) of telling of ones HIV result to sexual partner.

Sero discordant – a person whose sero status is not the same as his/her partner.

Sero concordant -a person whose sero status is similar as his/her partner.

Unknown sero status - a person whose sero status is unknown.

Consistent condom use- using condoms at each and every sexual intercourse

Steady partner – regular sexual partner

Type of partner- whether sexual partner is HIV positive, negative or unknown sero-status

Casual partner – non regular sexual partner

Risky sexual practice- sexually active adults who had sexual contact history with causal partner, multiple partners, commercial sex worker or experiencing unprotected sex.

Sexual behavior - sexually active adults, the way of engaging in sexual activity with single /multiple partners, with or with out condom use.

4.13 Ethical considerations

Ethical clearance letter was obtained from Research and ethics Committee (REC) of chool of public health, Addis Ababa University. A written consent was obtained from Assela Hospital and Health center. Additionally an informed verbal consent was obtained from each respondent after providing sufficient information on the purpose of study. Anyone who was not willing to participate in study has full right to do so. To ensure the confidentiality of respondents their names were not written on the questionnaire.

4.14 Dissemination of results

The result of this study will be disseminated or communicated to Addis Ababa university school of public health, Ministry of health, Regional health bureaus, Assela hospital and health center, and other concerned bodies through reports and publication on an appropriate journal.

5. Results

5.1. Socio-demographic characteristic of Study Participants

A total of 324 HIV positive individuals who were taking ART were interviewed, yielding a response rate of 100%. More than half 167(51.5%) were females and the rest 157(48.5%) were males. The mean age of the respondent was 36.33 years (±7.79) and more than two third 266 (82.1%) in the age group of 25 - 44 years.The majority of them 264(81.5%) were married. More than two third 233(71.9%) of them were followers of Orthodox Christianity. About 207(63.9%) of the study participants were Oromo ethnic group. Two hundred fifty two (77.8%) lived in urban area. Regarding to educational status, 119(36.7%) were between grade 5 to 8. Less than a quarter 71(21.9%) of them were daily laborers. The median monthly income of study subjects were 500 Ethiopian birr (shown in Table 1).

At the time of study, the mean duration of receiving ART was 39.8 ±23.8 months .The duration of diagnosis ranged from 6 to 120 months. Two hundred fifty seven (79.3%) of the respondents had known their sero status before two years.

Table1. Basic socio-demographic characteristics of the respondents, Assela , Arsi, 2012/2013

Variable	Male freq(%)	Female freq(%)	Total freq(%)
Age category			
18-24	1 (0.6%)	14(8.4%)	15(4.6%)
25-34	25(15.8%)	90(54.2%)	115(35.5%)
35-44	96(60.8%)	55(33.1%)	151(46.6%)
≥45	36(22.8%)	7(4.2%)	43(13.3%)
Current marital status			
Single	14(8.9%)	22(13.3%)	36(11.1%)
Married	134(84.8%)	130(78.3%)	264(81.5%)
Divorced	6(3.8%)	7(4.2%)	13(4.0%)
Widowed	4(2.5%)	7(4.2%)	11(3.4%)
Religion			
Orthodox	103(65.2%)	130(78.3%)	233(71.9%)
Muslim	40(25.3%)	20(12%)	60(18.5%)
Protestant	15(9.5%)	16(9.6%)	31(9.6%)
Ethnic group			
Oromo	113(71.5%)	94(56.6%)	207(63.9%)
Amhara	39(24.7%)	62(37.3%)	101(31.2%)
Others*	6(3.7%)	10(6%)	16(4.9%)
Place of residence			
Urban	115(72.8%)	137(82.5%)	252(77.8%)
Rural	43(27,2%)	29(17.5%)	7 2(22.2%)
Education			
Unable to write & read	7(4.4%)	28(16.9%)	35(10.8%)
Grade 1-4	27(17.1%)	20(12%)	47(14.5%)
Grade 5-8	51(32.3%)	68(41%)	119(36.7%)
Grade 9-12	45(28.5%)	43(25.9%)	88(27.2%)
College& above	28(17.7%)	7(4.2%)	35(10.2%)
Occupation			
Government employee	41(26.1%)	12(7.2%)	53(16.4%)
private employee	33(21%)	20(12%)	53(16.4%)
House wife	(0%)	50(30.1%)	50(15.4%)
Daily laborer	26(16.6%)	4 8(28.9%)	74(22.8%)
Merchant	19(12.1%)	31(18.1%)	50(15.4%)
Farmer	33(21%)	4(2.4%)	37(11.4%)
Others	5(3.2%)	2(1.2%)	7(2.2%)
Average monthly income			
No income/I don't know	1(0.6%)	36(21.7%)	37(11.4%)
≤500	59(37.3%)	79(47.6%)	138(42.6%)
501-1000	50(31.6%)	29(17.5%)	79(24.4%)
1001-1500	16(10.1%)	2(7.2%)	28(8.6%)
>1500	32(20.3%)	10(6%)	42(13%)

*others; tigre gurage

5.2 Sexual behaviour of respondents before tested positive and before starting ART

Table 2 describes the sexual behavior of respondents before they were tested HIV. One hundred seventy one (52.8%) were tested using PIHCT and the rest 153(47.2%) were tested through VCT approach. The majority of the study subjects 156(48.1%) had survived over 49months since testing positive, 101(31.2 %) had survived 25-48 months, and the rest had survived 24 months or less. About 280(86.4%) did not know their partners sero status before test. The majority 288(88.9%) of them were never use condom before tested HIV. Fourteen (4.3%) were consistently used condom before test. One hundred fifty seven (48.5%) of them had history of multiple sexual partner before tested positive.

In the in-depth interview most respondents reported that they had risky sexual behavior prior to HIV diagnosis. They had reported history of sexual intercourse with multiple sexual partners with inconsistent condom use. One of HIV positive man who was on ART from Assela town explains his past sexual behavior as:

"Before I became ill, I had been a member of Ethiopian military and I had a bad character, I engaged in sexual intercourse with multiple sexual Partners like bar ladies. I used condom some times with those ladies but not at all time."

In support of this idea another female respondents who were doing in the bar reported history of multiple sexual practice.

"Before I know my self I had husband but we quarreled and divorced after that, I was doing in bar and I had sex with many people with out condom use"

Table 2. Sexual behavior before tested positive, time of test and before started ART, Assela, Arsi zone, 2012/13

Characteristic	Frequency	Percentage(%)
The types of HIV counseling they used to be tested		
VCT	153	47.2
PIHCT	171	52.8
The duration since tested positive (months)		
≤24	67	20.7
25-48	101	31.2
≥49	156	48.1
Marital status by the time they know their HIV status		
Married	257	79.3
Single	38	11.7
Divorced	12	3.7
Widowed	17	5.2
Number of sexual partners before tested HIV		
Single	167	51.5
Multiple	157	48.5
Knowledge of partners sero status before test		
Yes	44	13.6
No	280	86.4
History of condom use before testing HIV		
Yes	36	11.1
No	288	88.9
Condom use pattern before testing HIV		
Consistently used	14	4.3
Inconsistently used	22	6.8
Not used at all	288	88.9

5.3 Partner ship assessment of PLWHAs who are taking ART

Table 3 shows partner ship information about the respondents. Majority of them 264(81.5%) were in marital relation and the rest 60(18.5%) were unmarried but had casual partner during the study period. Among the respondents 287(88.6%) were living in the same house with their partner during the study time. Two hundred eighty nine (89.2%) had duration of relation greater than one year with their partner. About two-third 210(64.8%) were living peacefully with their partner and 114(35.2%) were living with disagreement. One hundred twenty nine (39.8%) discussed about HIV testing with their partner. The majority 289(89.2%) of them were engaged in sexual activity with partners whose statu's they knew. About 210(72.7%) engaged in sexual activity with HIV positive partners while, 78 (27%) were with discordant sero status partners.

Table 3: partner ship assessment among PLWHAs who are taking ART in Assela town,Arsi zone 2012/13

Characteristic	Frequency	percent (%)
Current marital status		
Married	264	81.5
Unmarried	60	18.5
Leave together with the current partner		
Yes	287	88.6
No	37	11.4
Duration of relation in year		
≤1	35	10.8
>1	289	89.2
Partners education		
Illiterate	56	17.3
Primary	92	28.4
Secondary	131	40.4
Tertiary	45	13.9
Relation with current partner		
Peaceful	210	64.8
With disagreement	114	35.2
Discussion about HIV		
Yes	288	88.9
No	36	11.1
Talked about HIV testing before test		
Yes	129	39.8
No	195	60.2
Knowledge of partners HIV status		
Yes	289	89.2
No	35	10.8
Partners HIV status(n=289)		
HIV positive	210	72.7
HIV negative	78	27.3

5.4 Sero status disclosure pattern among PLWHAs who are taking ART

Among the 324 participants 311 (96.0%) of the respondents disclosed their HIV positive status at least to one person (96.2% men Vs 95.8% women); while 305(94.1%) of respondents disclosed their result to their current regular partner. Among respondents who had casual sexual partner only 13(34.2%) were disclosed their result to any of these partners.

However; of those disclosed to regular partner 30(19.1%) of women and 14(9.5%) of men had sex with their partner before telling their result to their partner. Concerning sero status disclosure time 212(69.5%) were told their result immediately and the rest 93(30.6%) were delayed. (As showed in Table 4).

Among respondents who participate in the in-depth interview the majority of them were reported that they were disclosed their result to their partner, being tested together and having strong relationship with their partner were helped them to disclose their result to their partner. A 40 years female respondent explain her experience of disclosure as follows:

"I disclosed my result to my husband and to my children because my husband and I were tested at the same time in the same health facility. Now, we are taking ART drug together from the same health institution"

In addition, Protecting partner and family members from infection and strength of relationship was often cited as a key point for sero status disclosure among those who disclosed to families. A 47 years male respondents qout;

"Even if I faced discrimination from other people around me, by disclosing my result to all my families and my partner, I protect them from acquiring the virus from me".

Table 4 Sero status disclosure pattern among PLWHAs who are taking ART, Assela town, Arsi zone, 2012/13

Variables	Male Freq(%)	Female Freq(%)	Total Freq(%)
Disclosed to any one (N=324)			
Yes	152(96.2%)	159(95.8%)	311(96.0%)
No	6(3.8%)	7(4.2%)	13(4.0%)
Disclosed to main sexual partner(N=324)			
Yes	148(93.7%)	157(94.6%)	305(94.1%)
No	10(6.3%)	9(5.4%)	19(5.9%)
Disclosed to casual sexual partner(n=38)			
Yes	9(37.5%)	4(28.6%)	13(34.2%)
No	15(62.5%)	10(71.4%)	25(65.5%)
Delayed disclosure to main partner (n=305)			
Yes	44(29.7%)	49(31.2%)	93(30.6%)
No	104(70.3%)	108(68.8%)	212(69.5%)
Sex before disclosure(n=305)			
Yes	14(9.5%)	30(19.1%)	44(14.4%)
No	134(90.5%)	127(80.9%)	261(85.6%)

5.5 Barriers for sero status disclosure among PLWHAs who are taking ART

Among participants who did not disclose their test results to their partner the commonest reasons mentioned were, fear of separation/divorce (26.3%), fear of labeling as bad person (26.3%), fear of breach of confidentiality (26.3%) and fear of accusation of unfaithfulness (10.5%), and the other reasons were depicted in Table 5.

Qualitative informants reised many reasons for hiding their sero status to their partners of these fear of separation or divorce is prominent one and others are living in distant areas, knowledge of partners status and having disagreement relation with partner were stated as factors which delayed sero status disclosure. A 24 years male respondents stated that:

"I did not tell her my HIV-positive results because she was tested before me and she knew that her result is negative. Beside this we quarrel so many times there fore if I tell my result to her now, she will leave me and will marry to an other person"

Similarly type of partner and number of current partners are among factors which influence sero status disclosure. Those respondents who do not have regular partner had not disclosed their result to any one .It is well illustrated by the following quote:

"I did not disclose my HIV status to any one, because I don't have regular partner currently, I am doing in hotel and I have had sex with many males there fore how can I tell my status to my client, this is work"

The other barrier to disclosure was fear of being identified as the cause of the infection. According to key informants who are working in ART clinic, an individual who tested positive first will be considered as he/she has brought the infection. So both men and women participants described they do not want take the lead to disclosure.

Table 5. Main reasons for not disclosing HIV status to main sexual partner among HIV positive ART users, Assela, Arsi zone 2012/13

Reason for non disclosure	Male Freq(%)	Female Freq(%)	Total Freq(%)
He/She might leave me	2 (20%)	3(33.3%)	5(26.3%)
He/She might be afraid of catching HIV from me	1(10.0%)	0(0%)	1(5.3%)
He/She might think I am a bad person	2 (20%)	3(33.3%)	5(26.3%)
He/She is too young to handle it	1(10.0%)	0(0%)	1(5.3%)
The person may tell others	3(30.0%)	2(22.2%)	5(26.3)
He/ She might think I am unfaithful	1(10.0%)	1(11.1%)	2(10.5%)

5. 6 Reaction of sero status disclosure among PLWHA who are taking ART

Among 305 respondents who were disclosed their status 72.5% of them were reported positive reaction from their partner related to their disclosure ,11.1% were reported angry or annoyed reaction, 3.9% confused, 2% worried about his/her own HIV status and only 2% of them reported left the relation following disclosure.

Most of the in-depth interview participants reported that they received support and encouragement following disclosure. Only one person reported negative reaction. A 28 years old HIV positive woman in sero discordant relation described her sero status disclosure and her partner's reaction as follows :

"Disclosing my status gives me mental rest and great pleasure, because my partner helped me to take my drug appropriately, when I was sick he took me to my physician and we use condom consistently, since he is negative if I were not told him and he heard from some one else he would quarrel with me"

In contrary a 36 years old man explain out come of disclosure as a means of divorce

"By disclosing my result to my former wife she separated from me after that I leave six children and my house fore her and I married another positive woman from a town"

Table 6: Reaction of disclosure among PLWHA who are taking ART in Assela , Arsi 2012/13

Out come variable	Male(%)	Female(%)	Total(%)
Supportive	103(46.6%)	118(53.4%)	221(72.5%)
Confused	8(66.7%)	4(33.3%)	12(3.9%)
Angry	17(50%)	17(50%)	34(11.1%)
Cried	4(66.7%)	2(33.3%)	6(2%)
Assured me	0(0%)	2(100%)	2(.7%)
Become violent	1(25%)	3(75%)	4(1.3%)
Took care of me	5(55.6%)	4(44.4%)	9(3%)
Worry about his/her own HIV status	3(50%)	3(50%)	6(2%)
Ask about my sexual history	3(75%)	1(25%)	4(1.3%)
Threaten me	0(0%)	1(100%)	1(.3%)
Left the relation	4(66.7%)	2 (33.3%)	6(2%)

5.7 Sexual behavior and condom use among PLWHA who are currently taking ART

As shown in table 6 one-third of the respondents 109(33.6%) was taking ART for less than 24months, 109(33.6%) were between 25 to 48 months and the rest 106(32.7%) were above 49 months.

Regarding health condition of the respondent, majority of the individuals 341(96.6%) had perceived that their health status during the study period has improved, since started ART. Among sexually active respondents 305(94.1%) had single partner and 19(5.9%) had multiple partners since started ART. In the occasion of their last sex, 233(71.9%) of the respondents used condom and the rest did not used. Concerning condom use since HIV diagnosed 197(60.8%) of the respondents were using condom consistently where as the remaining 127(39.2%) were either using condom inconsistently or did not use it at all. Two Hundred eighty six (88.3%) of those individuals had sexual practice with regular partner and 38(11.7%) of them with none regular partner. Among those who had sex with non regular partner, the majority 25(65.8%) of them were with out disclosure of their sero status and the rest 13(34.2%) of them told their result to their partner. The finding further revealed that only 16(42.1%) of the respondents who had sexual practice with non regular partners used condom.

Majority of the in-depth interview participants explain that even if information is given through mass media and individual counseling was given during follow up period still many peoples were practicing risky sexual behavior. One female respondent who were in sero discordant relation explain her sexual behavior as;

"My husband is HIV negative we were tested before marriage and at that time ,I want to separated from him ,but he didn't do so, why because he loves me. We were counseled about condom use but we did not use condom always as a result we have two children now. fortunately , both my children and my husband is HIV negative"

Another 44 years male counselor mentioned his expirance of counseling as follows;

"Yaa….. there is change but I don't think all people who live with HIV were behaving safe sexual practice for example while I was counseling a lady who was working in the bar she said to me that 'I am doing in the bar by selling my body I earned 200 birr per day from my costumer, who give me this money , no one have right on my body in order not to do this' I asked her whether she used condom or not she replied 'I told them to use it (condom). If they said no I don't do any thing this is business.'

Table 7: sexual behavior of PLWHA who are currently taking ART, Assela Arsi zone 2012/13

Characteristic	Frequency	Percentage (%)
Duration since ART start in month		
≤24	109	33.6
25-48	109	33.6
≥49	106	32.7
Health condition since started ART		
Improved	341	96.6
No change	9	2.8
Deteriorated	1	.3
Sexual desire since ART		
Improved	41	12.7
Normal	186	57.4
decreased	97	29.9
Sexual intercourse in the last 3 month		
Yes	311	96
No	13	4
No of partners since ART		
Single	305	94.1
Multiple	19	5.9
Condom use in the last sexual intercourse		
Yes	233	71.9
No	91	28.1
Condom use since HIV positive diagnosis		
Consistently used	197	60.8
In consistently used	96	29.6
Not used at all	31	9.6
Sexual intercourse with non regular partner		
Yes	38	11.7
No	286	88.3
Sero status disclosure to non regular partner		
Yes	13	34.2
No	25	65.8
Condom use with non regular partner		
Yes	16	42.1
No	22	57.9

5.8 Medical and psychological related assessments

Table 8 shows the medical and psychological related assessments of the respondents. Among the respondents who were asked whether there was less concern to practice safe sex because of ART treatment, about 51(15.7%) of them had reduced concern to safe sex because they were taking ART and the rest 273(84.3%) were have no difference in action with their prior practice. As far as ART regimen concerned, 55(17.0%) missed their tablets in the last 3 months and 269(83.0%) of the respondents were taking their ART drugs strictly as prescribed by their physician. Thirty percent of the respondents had a history of alcohol use in the last three months of this, the majority 82(85.2%) of them drunk alcohol two or fewer times per week. Twenty (6.2%) had a history of substance use, of whom the majority (55%) of them were chewing khat and 9(45.0%) cigarette smoking with the three-forth of them did it two and less than 2 times per week.

In the in-depth interview participants pointed out that social behaviors and the economic factors remain important influences on sexual risk taking and shape the type of sexual relations for those receiving ART. Changes in sexual behavior often occurred together with changes in other social behaviors, which participants linked to unsafe sex and multiple partnering, most particularly use of alcohol. Most of the respondents explain about the connection between alcohol and other substance use and sexual behavior. A male of 47 years pointed out that;

"Ahh… yes I drunk 'tella' but I couldn't try others ,those people who are intoxicated with alcohol and other substances may not control them selves and an able to decide with whom they will engaged in sex in another hand they may not negotiate to use condom with their partner" .

In support of this idea another 40 years female respondents stated that drinking alcohol is taken as cultural norm and a tool for strength their social affairs and used as a means to decrease stigma and discrimination.

"Yes let me speak truth I drunk alcohol for the strength of social life, like 'tebell kimesu and mehaber' if I don't do these things (drinking alcohol) people may discriminate me from social life. But I know that drinking alcohol and chewing chat may initiate risky sexual behavior like engaging in sexual activity with multiple partners with out condom".

Table 8: Medical and behavioral related variables of respondents in Assela, Arsi zone, 2012/2013.

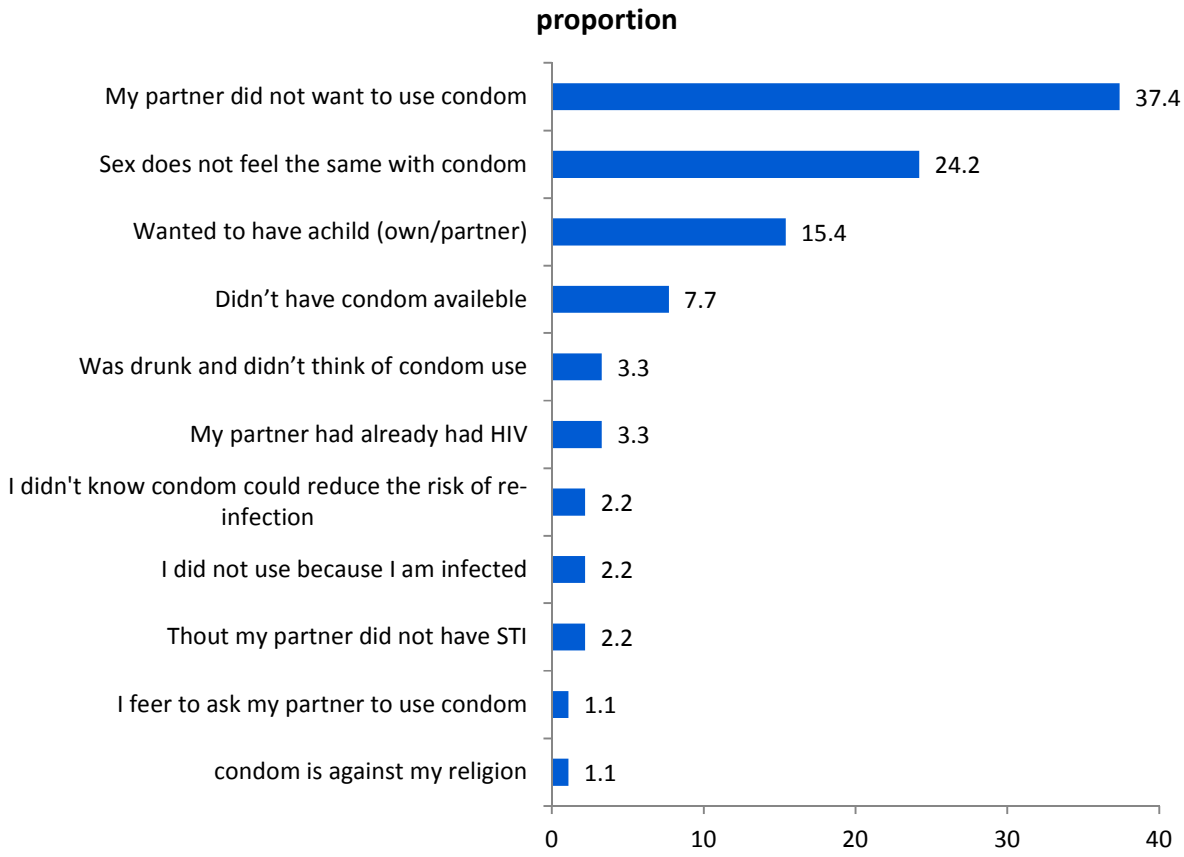
Variables	frequencies	percentage(%)
Reduced concern of safe sex because of ART		
Yes	51	15.7
No	273	84.3
Missing of tablets in the last 3 months		
Yes	55	17
No	269	83
HIV status at the time of data collection		
Symptomatic	18	5.6
Asymptomatic	306	94.4
Proportion of ever drunk Alcohol		
Yes	96	29.6
No	228	70.4
Number of drinking per week		
<=2	82	85.4
>2	14	14.6
Substance addiction		
Yes	20	6.2
No	304	93.8
With which types of addiction you are addicted		
Khat	11	55
Smoking	9	45

5.9. Reasons for not using condom among HIV positive ART users

The major reason for not using condom is partner's refusal(37.4%), followed by sex did not the same with condom 22(24.2%) desire to have a child 14(15.4%) were indicated by participants as barrier to use condom and some other as depicted in Figure 2

In the in-depth interview most respondents explain range of reasons for not using condom of this condom is allergic for them, condom take away the pleasure of sex, partner's refusal and income related factore were pointed as barriers of condom use. A 27 years female respondent explain her expirance of condom use as;

"I know using condom during sexual intercourse has advantage. But I am not always using it because I am working in the bar and some people did not want to use it, there fore I had it (engaged in sex) with out condom because I want to get money."



Figer 2: Reasons mentioned for not using condom among PLWHAs who are taking ART, Assela town health facility, Arsi zone, 2012/13

5.10 Relation ship between sero status disclosure and condom use among PLWHAs

Among participants who had disclosed their status to their sexual partners 195(63.5%) were used condom always during sexual intercourse compared to only 2(10.5%) of those who did not disclosed their status. Knowing partner's HIV status is significantly associated with condom use in the most recent sexual encounter (x^2 test, P=0.002); respondents those who disclosed their sero status to their partner were use condom 15 times more likely than those who do not. Among non-disclosures risks of exposure to HIV occurred frequently, with 89.5% (17/19) of people who did not disclose their HIV status indicating that they had unprotected intercourse compared to 35.4% (107/305) who disclosed their status. This is shown in figure 3

In the in-depth interview espondents those were counseled about condom use and sero status disclosure together with their partner were reported consistent condom use than the other group. A 40 year female respondent explained that;

"We always use condom when we had sex with my partner, because I told my result to him and we were counseled here about the use of condom, if we do not use such things (condom) our health would be deteriorated than before."

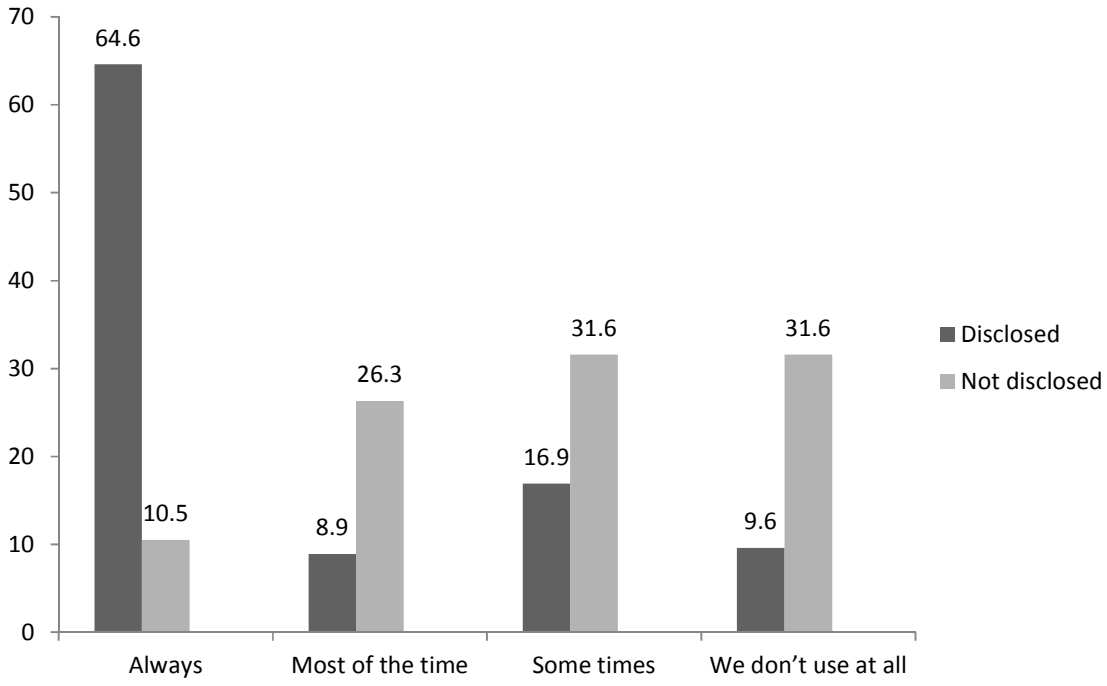


Figure 2: Condom use pattern since HIV positive testing among PLWHAS who are taking ART in Assela town health facility, Arsi zone, 2012/13

5.11. Socio-demographic variables associated with sero status disclosure among PLWHAs

As shown in Table 9, in bivariate analysis six variables were found to be significantly associated with sero status disclosure. Among socio-demographic characteristics, marital status(COR=21.7 ;95% CI: 6.9, 68.3), duration of HIV test (COR=4.8 ;95%CI:1.9, 12.4), duration of relation with partner (COR=27.9;95%CI:9.66, 80.6), live in the same home with partner (COR=0.02;95%CI: 0.004, .05) Partner's education (COR=3.38;95%CI:1.3,8.8) and relationship with partner (COR=0.03; 95%CI: 0.003, 0.2) were found to be significantly associated with sero status disclosure (P<0.05).

Multiple logistic regression analysis was done to control potential confounders. Those variables that showed significant association with sero status disclosure P-value of <0.05 from bivariate analysis were included in multivariate analysis after checking for multi co linearity .In a multivariate analysis (shown in Table 9).duration of test, living with partner in the same home and relation ship with partner were found independent predictors of sero status disclosure.

Respondents those who had duration of test greater than two years were found to have eight fold increased odds of disclosure compared to those who had less than two year (AOR:8.4; 95% CI: 1.21, 57.7). Where as, respondents those were not living in the same home with their partner were 99% less likely to disclose their HIV status to a partner in comparison with those living together (AOR, 0.01; 95% CI: 0.001, 0.27). The other predictor of HIV status disclosure was partner's relation ship. Participants those were lived in disagreement relation with their partners were (99%) less likely to disclose their HIV status than their counterparts (AOR= 0.01; 95% CI: 0.001, 0.2).

Marital status, duration of relation with partner and Partners education were significantly more likely to disclose their sero status to their partner in bivariate analysis but this did not remain significant when controlled fore other variables. (Table 9)

Table 9 Socio-demographic variables associated in bivariate analysis with HIV status disclosure among PLWHA who are taking ART in Assela town, Arsi zone 2012/13

Variable	Disclosed N (%)	Not disclosed N (%)	Crude OR(95%CI)	Adjusted OR(95%CI)
Marital status				
Married	260(85.2%)	4(21.1%)	**21.7 (6.9, 68.3)** *	0.7(0.03, 16.9)
Unmarried	45(14.5%)	15(78.9%)	1.0	1.0
Live in the same home				
Yes	284 (99%)	3(1%)	1.0	1.0
No	21(56.8%)	16(43.2%)	**0.02(.004, .05)***	**0.01(0.001, 0.27)****
Duration of relation with partner				
=< 1year	22(62.9%)	13(37.1%)	1.0	1.0
>1year	283(97.9%)	6(2.1%)	**27.87(9.7, 80.6)** *	7.3(0.80, 66.2)
Duration of test in year				
= <2	57(85%)	10(14.9%)	1.0	1.0
>2	248(96.49%)	9(3.5%)	**4.8 (1.9, 12.4)** *	**8.4(1.2, 57.7) ****
Partners' education				
Literate	251(95.8%)	11(4.2%)	**3.38(1.3, 8.8)***	1.5(0.19, 12)
Illiterate	54(87.1%)	8(12.9%)	1.0	1.0
Relation with partner before test				
Peaceful	209(99.5%)	1(.5%)	1.0	1.0
With disagreement	96(84.2%)	18(15.8%)	**0.03(0.003, 0.2)***	**0 .01(0.001, 0.2)****

***Statistically significant at p-value < 0.05**

**** Significant after adjusted for other variables**

5.12. Association of sero status disclosure by selected characteristics among PLWHAs

Logistic regression for HIV positive status disclosure to sexual partner and other variables was performed. In bivariate analysis (shown in Table 10) discussion before HIV test, talked about testing with partner before test, knowledge of partners' sero status, duration of ART start, condom use at last sex and consistent condom use since HIV diagnosed, number of partner, type of partner, history of alcohol and substance use were among factors significantly associated with sero status disclosure ($P<0.05$).

Multiple logistic regression analysis was employed to control potential confounders. Significant variables to be introduced to the model were selected based on a bivariate P-value of <0.05. In multiple logistic regression models, Knowledge of partner's HIV status and prior discussion were found to be determinants of sero status disclosure.

Respondents reporting not knowing their partner's HIV status were 99.97% less likely to disclose their HIV status to a partner in comparison with those who did know their partner's status(AOR, 0.003; 95% CI,0.001-0.1). In addition participants who did not discuss about HIV and testing with their partners were 93% less likely to disclose their HIV status than their counterparts (AOR= 0.07; 95% CI: 0.01, 0.98). But duration since ART start, talked about testing with partner, number of partner since started ART, condom use at last sex, history of condom use since HIV diagnosed, type of partner, history of alcohol use and history of substance use in last 3month were lost their statistical significance in the multivariate analysis (Table 10)

Table 10 Association of HIV status disclosure by various characteristics among HIV positive ART users Assela, Arsi, zone 2012/13

Variables	Disclosed N(%)	Not disclosed N(%)	Crude OR(95% CI)	Adjusted OR(95% CI)
Discussion before test (HIV)				
Yes	286(99.3%)	2(.7%)	1.0	1.0
No	19(52.8%)	17(47.2%)	**0 .01(0.002, 0.04) ***	**0.07(0.01, 0.98)****
Talked about testing with partner before test				
Yes	127(98.4%)	2(1.6%)	**6.1(1.40, 26.7)** *	15(.3, 767)
No	178 (91.3%)	17(8.7%)	1.0	1.0
Know partner's HIV status				
Yes	288 (99.7%)	1(.3%)	1.0	1.0
No	17(48.6%)	18(51.4%)	**0.003 (0.001, 0.03**)*	**0.003(0.001, 0.1)****
Duration since ART started				
=<24	96(88.1%)	13(11.9%)	1.0	1.0
25-48	105(96.3%)	4(3.7%)	**3.6(1.1, 11.3**)	2.3(0.09, 55.2)
=>49	104(98.1%)	2(1.9%)	**7.1(1.6, 32.0)***	1.3(0.05, 33)
No of partner since started ART				
Single	291(95.4%)	14(4.6%)	**7.42(2.34, 23.52)** *	0.9(0.08, 46)
Multiple	14(73.7%)	5(26.3%)	1.0	1.0
Condom use at last sex				
Yes	227 (74.4%)	78(25.6%)	**6.3(2.3, 17.2)***	0.3(0.12, 9.4)
No	6(31.6%)	13(68.4%)	1.0	1.0
Use condom regularly				
Yes	195(99%)	2(1%)	**15.5(3.5, 68.3)***	0.01(0.00, 1.5)
No	107(86.3%)	17(13.7%)	1.0	1.0
Type of partner				
Non regular	31(81.6%)	7(18.4%)	1.0	
Regular	274(95.8%)	12(4.2%)	**5.16(1.89, 14.06)** *	0.2(0.004, 6.7)
Alcohol use in last 3month				
Yes	83(86.5%)	13(13.5%)	1.0	1.0
No	222(97.4%)	6(2.6%)	**5.8(2.1, 15.8)***	8.0(0.5, 147)
History of Substance use				
Yes	13(65%)	7(35%)	1.0	1.0
No	292(96.1%)	12(3.9%)	**13.1(4.4, 38.8)***	3(.02, 620)

***Statistically significant at p-value < 0.05**

**** Significant after adjusted for other variables**

5. 13. Association of consistent condom use by selected variables among PLWHAs

As shown in table 11 in bivariate analysis many variables were found to be significantly associated with consistent condom use. Sex of respondent(COR=2.08; 95%CI:1.3,3.28), duration of relation with partner (COR= 3.41;95%CI:1.63, 7.13) duration since started ART (COR= 2.3;95%CI:1.4, 4.0) , living in the same house with partner(COR=2.6 ;95%CI:1.3, 5.73), relationship with partner (COR=2.13 ;95%CI:1.33,3.4), discussion about HIV with partner(COR=3.46;95%CI:1.1, 10.90), Knowledge of partners HIV status(COR=3.5; 95%CI:1.68, 7 .35), disclosure of sero status to partner(COR= 15; 95%CI:3.4, 66.4), and history of alcohol use in the last 3months (COR= 0.56;95% CI:0.35, 0.91) were among factors significantly associated with consistent condom use ($p<0.05$).

As depicted in Table 11, factors that are independently associated with consistent condom use were explored using multivariate analysis. Those variables that showed significant association with consistent condom use ($p<0.05$) from bivariate analysis were included in multivariate analysis after checking for multicolinearity. In the multiple logistic regression analyses model, Sex of respondent, prior discussion about HIV testing and duration since ART start were found to be determinants of consistent condom use (Table11)

Being male is two times more likely used condom consistently than female respondents (AOR=2.0; 95% CI: 1.2, 3.64). The odds of consistent condom use among the respondents who discussed about HIV with their partner was almost three times higher than respondents who did not discussed about HIV (AOR=2.9; 95% CI: 1.1 to 8.2). Participants who were taking ART at least fore forty nine months were more likely used condom compared to other group (AOR=2.17;95%CI: 1.17, 4.03**)**.

However the association found between living in the same house with partner, having peaceful relation with partner, discussion about HIV, Knowledge of partners HIV status, disclosing sero status to partner and living with partner greater than one year was disappeared after adjusting for other variable (Table 11)

Table 11 Association of consistent condom use by selected variables among PLWHA who are taking ART inAssela town, Arsi zone, 2012/13

Variables	Condom use			
	Consistent	inconsistent/ not used at all	(COR 95%CI)	(AOR 95% CI)
Sex				
Male	110(69.6%)	87(52.4%)	**2.1(1.3, 3.28)**	**2.0(1.2, 3.64)** **
Female	48(30.4%)	79(47.6%)	1.0	1.0
Duration of relation				
=<1 year	12(34.3%)	23(65.7%)	1.0	1.0
>1 year	185(64%)	104(36%)	**3.4(1.63, 7.13)**	2(.74, 5.3)
Duration since ART started				
≤24	96(88.1%)	13(11.9%)	1.0	1.0
25-48	105(96.3%)	4(3.7%)	**2.2(1.3, 3.8**)	1.8(0.88, 3.1)
≥49	104(98.1%)	2(1.9%)	**2.3(1.4, 4.0)**	**2.2(1.17, 4.03)****
Reside in the same house				
Yes	182 (63.4%)	105(35.6%)	**2.6 (1.3, 5.73)**	0.69(0.2, 2.3)
No	15(40.5%)	22(59.5%)	1.0	1.0
Relation with partner				
Peaceful	142(67.6%)	68(32.4%)	**2.13 (1.33, 3 .4)**	1.3(0.7, 2.2)
With disagreement	55(48.2%)	59(51.8%)	1.0	1.0
Discussion about HIV				
Yes	187(64.9%)	101(35.1%)	**3.46(1.1, 10.90)**	**2.9(1.03, 8.2)****
No	10(27.8%)	26(72.2%)	1.0	1.0
Knowledge of partners HIV status				
Yes	185(64%)	104(36%)	**3.5(1.68, 7 .35)**	0.62(0.2, 1.9)
No	12(34.3%)	23(65.7%)	1.0	1.0
Disclosed HIV status to partner				
Yes	195(63.9%)	110(36.1%)	**15(3.4, 66.4**)	6(0.75, 48.4)
No	2(10.5%)	17(89.5%)	1.0	1.0
History of alcohol use in the last 3 month				
Yes	49(51.6%)	46(48.4%)	**0.56(0.35, 0.91)**	0 .57(0.3, 1.04)
No	148(65.5%)	78(34.5%)	1.0	1.0

***Statistically significant at p-value < 0.05**

**** Significant after adjusted for other variables**

6. Discussion

This facility based cross sectional study was intended to provide insight into sero status disclosure patterns and sexual behavior among PLWHAs who are taking ART treatment from Assela town health institution. The results of the study raise several critical public health concerns that have key implications for interventions aimed at reducing HIV infection. The results show that sero status disclosure and sexual behavior among sero-concordant and sero-discordant partners was mainly influenced by individual level, socio demographic and socio economic factors such as marital status, duration of test, discussion about HIV with partner, type of relation ship, number of partners, Knowledge of partner's HIV status, and type of partners.

The general level of disclosure in this study was high (96%) told to at least one person, this result was comparable to a study done in Nigeria which was (97%) (12). But it is higher than the study done in kemisie, Jimma university hospital and Hawasa University referral hospital which were (94.5%), (90.8%) and (85.7%) respectively (15, 17, 18). Still much higher than in Barbados about,(58.2%) of those interviewed had disclosed their HIV status to significant others(13). This difference may be due to study setting, study time and the respondent's socio-demographic condition which could in turn affect the sero status disclosure.

Concerning disclosure to current main sexual partner this study raveled that (5.9%) of the study participants did not disclose their status to their regular partner which was comparable with a study conducted in kemisie district (6.9%) (18). But lower than the study conducted in Nigeria which was (10%) of the study participants did not disclose their status to their regular partner(12) .The similarity with the first study is due to similarity in study design and study population. The difference with the last study might be explained by different in study area and cultural difference in the study population. In another way, there was no gender difference in the disclosure of sero status to sexual partners.

In agreement with other studies, the proportion of disclosure to casual sex partners in this study was much lower than disclosure to regular sexual partners (34.2% Vs 94.1%). Possible explanation for this is that those patients on ART who disclosed their HIV status were due to a sense of responsibility to their main partners and less concern for casual partners' health. These finding tell

us that HIV-negative individuals should be educated about consistent condom use with all sexual partners, particularly with casual sexual partner.

Although the magnitude of sero status disclosure found in this study is encouraging, significant proportion (30.5%) of the disclosures were delayed, which is higher than a study done in Jimma University hospital (14.1%) (19). This might be individuals differ in decision making when and how to disclose their result. As a result these individuals had at least one sexual contact with their untold sexual partner before disclosure which raises the possibility of transmission risk if condom were not used.

Even if high level of sero status disclosure is found in this study, significant proportion (10.8%) of the respondent did not know their partner's HIV status, which is similar with finding reported in another study(15). The silence of the partners could be either acknowledging that he/she is already infected or emotional rejection to the partner. This may increase the chance of engaging in unsafe sex among those who do not know their partner's HIV status.

Concerning barriers of sero status disclosure the most common reason mentioned by the participants were fear of abandonment, fear of labeling as bad person and fear of breach of confidentiality. Women's fears of abandonment were mainly a question of economic support and social value. The qualitative finding of this study also supports this idea. This was inline with other studies which was done in Jimma University hospital, kemise, and metu town(17, 19).The similarity could be partially explained by similarity in study seting and study population.

Regarding out come of disclosure 72.5% of the respondents were reported supportive reaction from their partner related to their disclosure, which is similar to the studies conducted in Mettu and Jimma town(15, 19).This is also supported by qualitative study. But higher than a study conducted in Hawasa University Referral hospital which was(40.7%)(18). In this study negative out comes like violence and breaking in sexual relation ship following disclosure were only (4%) which was comparable with a study reported in sub-Saharan Africa (5%) (2). But it was much lower than that reported in South Africa and Hawasa University Referal hospital (14.6%) and (14.3%) respectively(10, 18). This variation may be due to study area and difference in socio-demographic characteristics among study population

Based on the qualitative interviews among the respondents who disclosed their result to their partner majority of respondents were reported that being tested together, having strong relationship

with partner and having knowledge about the transmition of disease were among the reasons stated by the respondents which helps to disclose their result to their partner. In another way fear of stigma and discrimination and fear of separation or divorce were among factors reported by study participants which delay sero status disclosure. This is consistant to other studies (15) .

In this study, it was observed that being living in the same home, having duration of test greater than two years, having peaceful relation with partner, Prior discussion, and knowledge of partner's HIV status, were among factors associated with disclosure of HIV status to main sexual partner. This is consistent with studies elsewhere in our country(15, 17) . This could be due to similarity in study population.

In line with other study respondents who had duration of test greater than two years were eight times more disclosed their status to their partner than their counterparts(AOR:8.35; 95% CI: 1.21, 57.67). This implies that sero status disclosure increases over time as people adjust to their results(16). The other predictor of sero status disclosure in this study is being living in the same house. Individuals who were not living in the same house with their partner were 98.9% less likely to disclose their result than those who were living together This was in agreement with other studies which was done in Ethiopia(15,17).

Similar to other study participants who were living with disagreement relation with their partner were less likely to disclose their status than their counter parts. This might be due to having disagreement relations leading to less discussion about HIV and HIV testing which may later make difficult to disclose their sero status.

Although in this study, marital status, occupation, educational status, income, partners' HIV status and duration of relationship were not significantly associated with HIV positive status disclosure, they are useful for disclosing of one's HIV status to a sexual partner. The absence of their association could be related to the effect of confounders, sampling technique or limitation in the design used in this study.

The current study revealed that the proportion of consistent condom use since they knew their HIV status was (60.8%).This was comparable with a research done in North shewa Zone and Addis

Ababa public hospitals which was(62%) and(63.1%)respectively(27, 28). But higher than study done in Kampala Uganda which was (45.5%). The variation with the last research could be because of the study settings influence the respondent's socio-demographic condition which could in turn affect the outcome variable.

The proportion of respondent who had used condom at last sex was (71.9%) this is in line with other study which was done in Addis Ababa public hospitals and North shewa health facility (70.4%) and (73.1%) respectively(27, 28, 35). But higher than a study done in Mombassa (44%)(35). The similarity between the two findings might be due to similarity in study design and study setting and the discrepancy with the last study could be partially explained by variation in the study setting and cultural difference in the study population.

Important finding of this research is that the proportion of consistent condom use among disclosed respondents were high (63.5%V10.5%) compared to those did not disclose their HIV positive status. In addition the odds of consistent condom use among disclosed partners were nearly five times higher than their counter parts (COR=4.7; 95%CI: 2.2, 10.23). Similarly other studies also found association between disclosure and condom use (15). Finding from qualitative respondents were also support this idea.This show that facilitating HIV status disclosure is a key point for consistent condom use and it helps in reducing HIV transmission.

Our finding shows that the respondents who reported multiple partners were (5.9%) which is comparable with a study done in South Africa (5.6%). But lower than a study done in Addis Ababa public hospitals which was (10%) and much lower than a study done in North shewa zone which was (42.7%) (27, 28) .The variation with the last finding may possibly attributable to the study setting and cultural difference in the study population.

This study also reveled that the respondents who had sex with out condom with casual partner were (57.9%) which is higher than a study done in North shewa health facility(45.2%)(28) and much higher than Addis Ababa public hospitals (16.1%) (27). This might be because of socio-demographic variations between the respondent and differ in sense of responsibility to different partners.

In harmony with other study participants who had HIV positive partner in this study were (72.7%) and negative partner were (27%).This show that majority of the study participants were in sero concordant relation which facilitate HIV status disclosure.

Similar to other study, this study found out that respondents who reported sexual intercourse with out condom use with negative partner were (31%). This was comparable with a study done in central Uganda which was (32%). But higher than North shewa Zone which was (24.1%) and much higher than a study conducted in Addis Ababa public hospital(12%), and a study done in South west Ethiopia(15.4%) (12,28,29,16). This variation may be due to individual difference in sense of responsibility which might contribute to new infection or re-infection with a new strain of HIV virus and low counseling practice was observed in this study area.

Based on qualitative finding surprisingly, social behaviors and the economic factors remain important influences on sexual risk taking and shape the type of sexual relations for those receiving ART. Changes in sexual behavior often occurred together with changes in other social behaviors, which participants linked to unsafe sex and multiple partnering, most particularly, previous history of condom use, history of multiple partner economic dependency and working in the bar, and current use of alcohol, cigarette smoking and khat chewing were among factors which were reported by the in-depth interview, which affect individuals sero status disclosure and sexual behavior. Additionally, perceiving that health status was improved, apparently re inforced by receiving of ART may contribute to sexual risk taking .This was almost similar to other findings which was done in Ethiopia(15).

In contrary with other study the commonest reason mentioned for not using condom were partner's refusal (37.4%) followed by condom take away the pleasure of sex (24.2%). In nother way the reason mentioned in the study conducted in North shewa zone Health facility were both partners being infected with HIV (41.2%) followed by partners refusal (16.2%) this finding is inconsistant with other studies done in Ethiopia (15, 27, 28) . So efforts should be strengthen on sexual health intervention focusing on the couple than the individual and monitoring of client's attitudes and practice on their follow up period.

7. Strength and Limitations of the study

7.1 Strength of the study

- The study help exploring the sero status disclosure and sexual behavior among PLWHA under treatment, hence gives knowledge and helps to see where and how to take an action.

- To deal with cultural sensitive sexual issues, this research tried to get relatively reliable results by complementing the quantitative study with qualitative.

- In an attempt to keep the validity and reliability; a pre- testing was done and appropriate analysis was employed and finding in this study were compared with other studies in Ethiopia and other countries of the world.

7.2 Limitations of the study

- Sero status disclosure and sexual behaviour were self-reported and subject to both recall and social desirability bias.
- The cross sectional study design makes it difficult to determine the direction of causality.
- This study was conducted among service users in a hospital and health centre setup one that can over estimate disclosure and consistent condom use, therefore can not necessarily be generalized to other groups living with HIV/AIDS.

8. Conclusions and Recommendations

8.1 Conclusions

Large level of respondents were disclosed their sero status to their partner. One of the implications of this high disclosure rate is the likelihood of a high rate of partner support and having clear communication about preventive interventions.

Prior discussion, living in the same home with partner, having peaceful relation with partner, duration of test and knowledge of partners' status were significantly associated with sero status disclosure.

There were significant proportions of inconsistent condom use were reported among the respondents.

Perrior discussion about HIV, duration since ART started, history of condom use and sex of respondent were found to be determinants of consistent condom use.

In conclusion, the study suggests that the HIV disclosure and sexual behaviour among sero-concordant partners, sero-discordant partners and partners with unknown HIV status varies. Therefore, interventions on disclosure need to take this into consideration.

8.2 Recommendations

Program planners and policy maker

- ART scale-up programs should include disclosure as a strategy of increasing the uptake of ART.
- Behavioral change health education and counselling adapted to the specific needs of each patient must be programmed and condom promotion is one of the important interventions among PLWHA.

Counselors

- Health education and counselling might be provided to this people at ART appointments and in follow- up care. This might either be provided on a one-on-one basis or through patient group discussions.
- To bring about appropriate behavioural change and to have maximum benefit of disclosure counsellors should give due emphasis on mutual disclosure of HIV test result, what ever the result it may be.
- Although condom use has creased substantially among patients who are on ART, still inconveniences of consistent condom use among the patients were the biggest challenge. Counselors have to tailor the information of consistent condom use in each visit without hesitating.

NGO Partners

- Besides giving technical and material support Non Governmental organization should have to work on programs of sero status disclosure and sexual behaviors of PLWHAS in order to reduce new and re-infection of HIV virus
- Farther research

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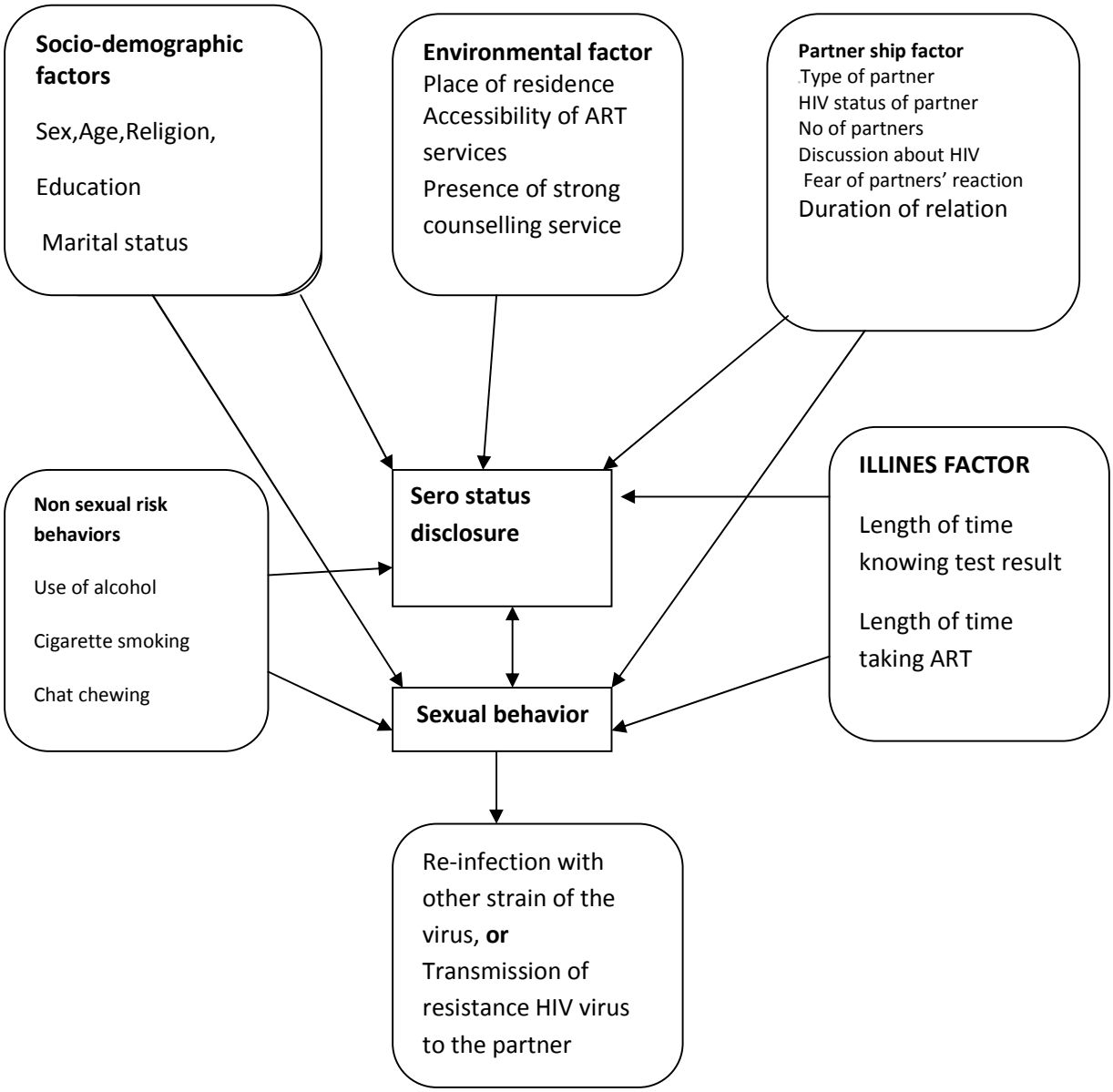

Annex I. Conceptual framework (adopted)

Annex II: Information Sheet and consent form

This Information Sheet and Consent Form are prepared for HIV/AIDS patients who are on ART and eligible to participate in this Research Project ,in Assela town ,Health Facility.

Information sheet (English version)

Title of the study: Sero status disclosure and Sexual behavior in HIV patients who are on ART in Assela town Health Facility Arsi Zone, 2013.

Name of Principal Investigator: Hailu fekadu

Name of the Organization: AAU, college of health science, School of Public Health.

Name of the Sponsor: AAU

Introduction

This information sheet is prepared with the aim of determining the Sero status disclosure and Sexual behavior in HIV patients who are on ART in Assela town health facility. The research group includes the principal investigator, three trained data collectors, one Supervisor, and one advisor from AAU.

Purpose of the Research Project

The aim of this study is to assess the prevalence of sero status disclosure ,determinant factors and factors affecting consistent condom use among HIV patients who are on ART.The study shows the gap of sero status disclosure and consistent condom use utilization in HIV patients who are on ART which are a potential source of HIV infection. Therefore, the results of this study will be used to design appropriate intervention programs to address the low rate of disclosure and inconsistent condom use among HIV patients who are on ART.

Procedure

The health facilities are providing ART services to HIV patients and you are one of the service customers. Therefore, you are randomly selected to be one of the study participants if you are willing to take part in this study and we kindly invite you to take part in the study. If you are willing to participate, we are so happy and we need you to clearly understand the aim of this study and to sign the consent form. Finally you are kindly requested to give your genuine response during the interviewee.

Benefits, Risk and /or Discomfort

By participating in this research project you may feel some discomfort in wasting your time (a maximum of 30 minutes). However, your participation is definitely important to identify the determinant factors for sero status disclosure and the low and/or inconsistent condom use by HIV patients who are on ART so as to design appropriate prevention strategy of HIV/AIDS in those who

are already living with the virus and taking ART. There is no risk or direct benefit in participating in this research project.

Incentives/Payments for Participating

You will not be provided any incentives or payment to take part in this project.

Confidentiality

The information collected from you will be kept confidential and stored in a file, without your name by assigning a code number to it. And hence no report of the study ever identifies you.

Right to Refusal or Withdraw

You have the full right to refuse from participating in this research. You have also the full right to withdraw from this study at any time you wish.

Person to contact

This research project will be reviewed and approved by the ethical committee of the AAU.
If you have any question you can contact below mentioned individuals and you may ask at any time you want.

Name: Hailu Fekadu
Tele: +251_911-717-608
E-mail: hailufekadu18@yahoo.com.

Annex III

Addis Ababa University, college of health sciences, School of Public Health

Quantitative questionnaire (English version)

Individual Consent form

My name is _____ I am currently MPH student and a part of research work team of AAU, college of health sciences, School of Public Health at Hospital and health centers on HIV positive People who are on ART Follow up. The research will assess the sero-status disclosure and sexual behavior among 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, policy formulation and to design appropriate prevention strategy for HIV/AIDS in our country.

Are you willing now to participate in the study?

Tick one. Agree_____ Do not agree____

Thank you.

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_____

Part I. socio-demographic characteristics

NO	**Questions**	**Response/coding categories**	skip
101	Identification Number	_____	
102	Name of the Health Facility	_____	
103	Sex *Check box (✓)*	☐ 1=Male ☐ 2=Female	
1O4	Age of respondent	(in years)	

105	What is your current Marital status?	☐ 1=Single ☐ 2= Married ☐ 3=Divorced ☐ 4=Widowed	
106	Religion	☐ 1=Orthodox ☐ 2=Muslim ☐ 3=Protestant ☐ 4=Catholic ☐ 5=Other_____	
107	To which ethnic group do you belong?	☐ 1=Oromo ☐ 2=Amhara ☐ 3=Tigre ☐ 4=Gurage ☐ 5=Others_____	
108	Where is your current Place of residence?	☐ 1=urban ☐ 2=Rural	
109	Educational status	☐ 1=Unable to write and read ☐ 2=Grade 1-4 ☐ 3=Grade 5-8 ☐4= Grade 9-12 ☐ 5=college &above	
110	What is your current occupation?	☐ 1=Government employee ☐ 2=Private employee ☐ 3=House wife ☐ 4=Daily laborer ☐ 5=Housemaid/servant ☐ 6= Merchant ☐ 7=Commercial sex worker ☐ 8=Farmer ☐ 9=student ☐10=Others(specify)_____	
111	What is your average monthly income?	☐ 1. ----------Eth. Birr ☐ 2= No income ☐ 3=I don't know ☐ 4=Other(specify)--------	

Part II: sexual behavior before tested positive, time of tested and before started ART

NO	**Questions**	**Response/coding categories**	
201	Where were you tested when you first	☐ 1=In this health facility	

	discovered you were HIV positive?	☐2=Others(specify)_____	
202	By which HIV counseling and testing approach was you tested?	☐ 1=VCT ☐ 2= PIHCT ☐ 3=Other (specify)	
203	How long is it since you tested positive for HIV/AIDS?	_____(years)	
204	What was your marital status by the time you knew your HIV status?	☐ 1=Married ☐ 2=Single ☐ 3=Divorced ☐ 4=Widowed	
205	How many sexual partner/s did you have before you tested positive for HIV?	☐ 1=One sexual partner ☐ 2= Two sexual partner ☐ 3.=Three or more sexual partner	
206	Did you know sero status of your partner before you tested positive for HIV?	☐ 1=Yes ☐ 2=No	
207	Did you use condom before you know your HIV status?	☐ 1=Yes ☐ 2=No	If NO SKIP**301**
208	If your answer is **yes for Q 207,** how frequently did you use condom?	☐ 1=Always ☐ 2=Almost always ☐ 3=About half of the time ☐ 4=Not very often	

Part III Partner ship information

301	What is your current marital status?	☐1=married ☐2=Unmarried(had regular boy /girl friend) ☐3 = Unmarried(had casual sexual partner) ☐4= Unmarried(had no sexual partner) ⟶	Skip to**401**
302	Have you live together with the current partner?	☐ 1 = Yes ☐ 2 = No	
303	How long is since you **know/ married** your current partner?	_____	

304	Is your partner able to read and write in any language	☐ 1 = Yes ☐ 2 = No ⟶	Skip to306
305	If the response for the above question is yes, have he/she ever attended formal school?	☐ 1 = Yes Grade _____ ☐ 2 = No	
306	What is your partner's occupation currently?	☐1 = Government employee ☐2 = Employee of private organization/enterprise ☐3 = NGO employee ☐4 = Businessman/women ☐5 = Farmer ☐6 = House wife ☐7 = Daily laborer ☐8 = Student ☐9 = Other specify _____	
307	How do you see the relation with your current partner?	☐1=It is peace full ☐2=We quarrel some times ☐3=We often quarrel ☐4=We are going to separate ☐5=Other specify _____	
308	Do you and your partner	☐1 = Yes	

	discuss about HIV?	☐2 = No	
309	Have you ever talked about HIV testing with your partner before yourself getting tested?	☐1 = Yes ☐2 = No ⟶	Skip to Q311
310	What was his/her reaction about the discussion on HIV tasting?	☐1= Was happy ☐2= Was reluctant to discuss ☐3= Get angry ☐4= Other	
311	Do you know your partner HIV status?	☐1 = Yes ☐2 = No ⟶	Skip to Q 401
312	If yes what is his/her HIV status?	☐1=HIV positive ☐2=HIV negative ☐3=Unknown	

Part IV: Questions assessing sero-status disclosure of HIV patients currently on ART

401	Have you told your HIV test result to any one?	☐ 1 = Yes ☐ 2 = No ⟶	Skip to 404

402	If yes, to whom did you tell you are HIV positive? (Multiple response possible)	☐1=Partner ☐2=Mother ☐3=Father ☐4=Child ☐5=Other Family members ☐6=Relatives ☐7=Friends ☐8=Religious Leader ☐9=Neighbors ☐10=Other	
403	Do you think your partner knows your HIV status?	☐ 1 = Yes ☐ 2 = No	
405	Have you told to your **regular** partner that you are HIV positive?	☐ 1 = Yes ☐ 2 = No ⟶	Skip to **Q** 411
406	When did you told him/her?	_____	
407	If yes after being positive, did you have sex with your partner before telling him/her about your HIV status?	☐ 1 = Yes ☐ 2 = No	
408	Why did you tell to your partner that you are HIV positive? (**multiple response is possible**)	☐1= I do not want to risk him/her ☐2= I want to get his/her support ☐3= It is usual to tell him/her every secret things ☐4= I do not want to be legally accused	

		☐5= I feared God to hide such things ☐6=others(specify)	
409	What was your expectation of the reaction of your partner if he/she knows that you are HIV positive?	☐1=Would be supportive ☐2=Would be confused ☐3=Would be angry ☐4=Would Cry ☐5=Would Become Violent ☐6=Would take care of me ☐7=Would worry about his/her own HIV status ☐8=Would ask about my sexual history ☐9=Would threaten me ☐10=Would leave the relation ship ☐11=Other (specify)_____	
410	What was your partner reaction when he/she knew that you are HIV positive?	☐1=Was supportive ☐2=Was confused ☐3=Was angry ☐4=Cried ☐5= Assured me ☐6= Became Violent ☐7=Took care of me ☐8=Worried about his/her own HIV status ☐9=Asked about my sexual history ☐10=Threatened me ☐11=Left the relation ship	

		☐12=Other (specify)_____	
411	If not, why you did not tell to your partner that you are HIV positive?	☐1=The person might leave me ☐2= The person might be afraid of catching HIV from me ☐3= The person might think I am a bad person ☐4=The person might get angry with me ☐5=The person is too young to handle it ☐6=The person may tell others ☐7=The person had too many other problems to deal with right now ☐8= There was no need to tell until I am sick ☐9= I do not want to worry him/her ☐10=The person might hurt me physically ☐11=The person might kill me ☐12=The person might think I am Unfaithful ☐13=Other(Specify)_____	
412	Did your counselor /ART Provider discuss about sero status disclosure or self risk of unsafe sex ?	☐ 1=yes ☐ 2=No ☐3=I don't know	
413	What do you understand when we say unsafe sex to you? (multiple response is possible)	☐1=sex with out condom ☐2=sex with condom ☐3=Not using FP ☐4=Sex with out disclosure of sero status ☐5=others----------	

414	Is there any risk for HIV-positive person him self if he engaged to un safe sex?	☐ 1=Yes ☐ 2=No → ☐ 3=I do not know	If No skip to Q 501
415	If the answer for Q**413** is **yes**, what are the risks of un safe/ un protected sex to HIV- positive person**?** **(multiple response is possible)**	☐ 1=Acquiring new strain ☐ 2=Infected by other STDs ☐ 3=Worsening disease ☐ 4=The risk is only to HIV-people ☐ 5=I do not know	

Part V: Questions assessing sexual behavior of HIV patients currently on ART

No	Questions	Response/coding categories	
501	How long is it since you have started ART?	----------(months, years)	
502	How is your over all health condition after you started receiving ART?	☐ 1=Improved ☐ 2= No change ☐ 3=Deteriorated	
503	What has your sexual desire seems after you started ART?	☐ 1=Desired is improved compared to before ☐ 2=Desire is normal as before ☐ 3=Desire is decreased as compared to before	
504	Have you had sexual intercourse with in the last 3 months?	☐ 1=yes ☐ 2=N o	If No skip to 506

505	If **yes** with how many partners did you had sex in the last three months?	☐ 1=One ☐ 4=Four ☐ 2=Two ☐ 5=Five ☐ 3=Three ☐ 6=More than 5	
506		_____	
507	At that time did you and your partner use condom?	☐ 1 = Yes ⟶ ☐ 2 = No	Skip to 509
508	If no why you didn't use condom?	☐ 1=My partner/s did not want to use a condom ☐ 2=My partner/s already had HIV ☐ 3=Sex doesn't feel the same with a condom ☐ 4=Didn't have a condom available ☐ 5=I fear to ask my partner to use condom ☐ 6=Thought my partner didn't have STI ☐ 7=Was drunk and didn't think of condom use ☐ 8=Wanted to have a child(own/partner) ☐ 9=Did not know condoms could reduce the risk of re-infection ☐ 10=Condom is against my religion ☐ 11=I didn't use because I am infected ☐ 12=Other(specify)_____	
509	How often do you use condom since you have been diagnosed HIV positive?	☐ 1 = Always ☐ 2 = Most of the time ☐ 3 = Sometimes ☐ 4 = We do not use at all	

NON- REGULAR PARTNERS

Now I would like to ask you some questions about your ***non-regular partners*** Sexual partners that You are not married to and never lived with and never paid money to for sex. **By non-regular I mean someone with whom you have had sex only once or very rarely**.

510	Have you had sex with a non-regular partner (s) in the past 3months?	☐ 1 = Yes ☐ 2 = No ⟶	Skip to 601

511	What do you think is your most recent non-regular partner's HIV status?	☐1=HIV positive ☐2=HIV negative ☐3=Unknown		
512	Did you ask your most recent non-regular partner about his/her HIV status?	☐ 1 = Yes ☐ 2 = No		
513	Did you disclose your HIV status to your most recent non-regular partner?	☐ 1 = Yes ☐ 2 = No		
514	The **last time** you had sex with your most recent non-regular partner, did you use a condom?	☐ 1 = Yes ☐ 2 = No		
515	Have you had sex with this non-regular partner at other times?	☐ 1 = Yes ☐ 2 = No →	SKIP to 601	
516	How often do you use condom during those occasions?	☐ 1 = Always ☐ 2 = Most of the time ☐ 3 = Sometimes ☐ 4 = We do not use at all		

Part VI: medical and psychosocial related questions

No	**Questions**	**Response**	
601	Is there reduced concern to practice safe sex because of ART ?	☐ 1=yes ☐ 2=No	
602	Is there any missing of tablets of medication in the last three months ?	☐ 1=yes ☐ 2=No	
603	Respondents HIV/AIDS status at the time of data collection? (data collector will assess any sign and symptoms by clinical staging and other related disease conditions reported by the patients like, presence of opportunistic infection wt loose, cough etc)	☐ 1=Symptomatic ☐ 2=Asymptomatic	
604	During the last 3 months have you ever drunk alcohol?	☐ 1=yes ☐ 2=No ⟶	Skip 606
605	If your answer for **Q 604 is yes,** how many times per week have you consumed in the last week	☐ 1=Once per week ☐ 2= Twice per week ☐ 3=3 times per week ☐ 4=4 times per week ☐ 5=5 times per week ☐ 6=6 times per week ☐ 7=7 and above per week	
606	Do you have using any substance or addiction to it?	☐ 1=yes ☐ 2=No ⟶	Stop her
607	If your answer is **yes for Q606** With Which of the following substances you are addicted or using? **(multiple answer is possible).**	1=khat 2=Cigarette smoking 3=Hashisha 4=Cocain	
608	How frequent have you using this/those substances**?**	☐ 1= once or less per week ☐ 2= twice per week ☐ 3= 3 times per week ☐ 4= 4 times per week ☐5=above 4 times per week	

Thank you for your participation

Interview guide for in-depth interview

Addis Ababa university faculty of medicine department of community health structured questionnaire on sero-status disclosure pattern and sexual behavior among PLWHA in Assela town Arsi Zone Oromiya Region.

Part I- Socio demographic information

- How old are you (age in completed years)? ----------
- Sex of respondent ---------- ----------
- What is you marital status? - ----------
- What is your current occupation? ----------
- To which Ethnic group do you belong? ----------
- What is your Religion? ----------
- What is your total Monthly in come? ---------- Eth. Birr.
- What is the highest educational level you completed? ----------

part II-Information on sero status disclosure

1. Have you had sexual inter course in the last 3 months ------
2. With whom did you engaged?
3. Do you disclosed your sero-status to your partner? Why / Why not?
4. What do you think the advantages that PLWHA will get by disclosing their sero-status to their partner?

Part III - Information on sexual behavior

1. What was your sexual practice before you became ill by HIV/AIDS?
2. What was the impact of HIV/AIDS presence in your body on your/ your porter's sexual desire?
3. What is your sexual practice now?
4. In your opinion What are the advantages that PLWHA will get by limiting their sexual partner or consistent use of condom?
5. What do you think about possible risks for PLWHA is they commit risky sexual practice?
6. During the last 3 months have you ever drunk alcohol or are you addicted to any substance like khat? if yes do you think is there any association b/n alcohol conception, substance use and sexual behaviour? how?

Key informant interviewee guide

My name is ---and I work for -----and I come from------. We are here to discuss HIV status disclosure to peoples. There is no right or wrong answers .All comments, both positive and negative, are welcome. I would like to have many points of view. I would like this to be open interview, so feel free to express your opinion honestly & openly. In order not to miss any points of the interview /discussion, I will be using a tape recorder .I would like to confirm you that all your experiences and comments are confidential and will be used for research purpose only.

Your name will not be recorded to protect your confidentiality.

Are you willing to participate in the interview?

If, yes, Thank you for your willingness.

Organization_____

Position_____

Age_____

Sex_____

Profession_____

Years of work on HIV prevention_____

1. Do you think HIV positive individuals should tell their result to their partners?
2. What do you think is its importance?
3. From your experience do people disclose their result? (Whom do they prefer? Why?)
4. Why do you think some people do not disclose their result?
5. As an HIV/AIDS service provider what is the commonest outcomes of disclosure PLWHA face?
6. Have you encountered with any individual facing difficulty in disclosing his/her result? How did you help him/her?
7. What do you think is appropriate measures to help HIV positive individuals to disclose their results?
8. What do you think the role of organizations working on HIV/AIDS in disclosure?
9. What measures do you think increase HIV status disclosure?

Annexii;IV

Yunivarsitii Finffinneeti kollejii Fayyaaa, M.barnoota Fayyaa Hawaasaa Gafilee Lakkofsaa(version ii Afaan Oromo)

Dhukaa hayyamama dhuunffaa

Qo'annoo bu'a qoranno HIV michuti himachu fi haala walqunamtti saala namoota vaayirasii HIV wajjin jiraachaa qoricha farra HIV fudhachaa hordofiirra jiranii, Asalla, Oromia.

Maqaan koo ----------jedhama,barataa MPH fi qaama garee Yunivarsitii Finffinnee kan hospitaalafii buufataalee fayyaarratti namoota HIV wajjin jiraachaa qoricha fudhataa hordofii kunuunsa irra jiran wajjin qo'annoo adeemifamu dha. Qo'annoon kun kan godhamu **bu'a qoranno HIV michuti himachu fi haala walqunamtti saala kan namoota vaayirasii HIV/ AIDS wajjin jiranii irratti godhamu**. Qo'annichi midhaa tokkooyyuu sirratti hinfidu, daqiiqotta gaafiif deebii sana fudhatuun alatti jechu dha. Odeeffannoon kun faayidaa qo'nnootiin ala bu'aa hin qabu. Isin ammoo diduufiis ta'e jiddutti dhiisuf mirga guutuu qabdu. Odeeffannoon isin nuuf kennitan bu'aa guddan qabu kayoo jijjirama amala walqunamti saala fi bu'a qoranoo HIV michuti himachu irrati, imaammata namoota HIV/AIDS wajjin jiraataniif gargaarsa kan qabu dha.

Amma qo'anicha keessati hirmaachuf fedhii qabduu?

Yoo fedhii horatan itti fufuu nidandeechan.

Yoo fedhii hinqabaannee akka hirmaatan hin dirqisiisnu.

Galatoomaa.

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

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

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

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

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

Kutaa I:- Gaafilee hawaasummaa ilaallatan

LAK	**Gaafii**	**Deebi**
101	Lakkofsa enguumaa	_____
102	Maqaa eguumsa fayyaa	_____
103	Saala Gaafatamaa	1=Dhiira 2=Dhalaa
104	Umriin kee waggaa meeqa?	----------
105	Fuudha/Heeruma keessan	1=Hin Fuune/Heerume 2=Fuudhe/Heerume 3= Hiike 4= Narraa du'e
106	Amantaa keessan?	1=Ortodoksii 2=Muslimaa 3=Protestantii 4=Katolkii 5= Kan biraa,ibsii----------

107	Saba Keessan?	1= Oromoo 2.=Amaara 3.=Tigree 4=Guraagee 5=Kan biraa,ibsii ----------
108	Eddon jireenga keesan eesa?	1=Magaala 2=Baadiyaa
109	Sadarkaa barnootaa?	1=Dubbisuf barresu hin danda'u 2=Kutaa 1-4 3=kutaa5-8 4=kutaa9-12 5=sadarkaa kolleeji fi isaa olli
110	Hojii keessan?	1=Hojeetaa/uu mootumaa 2=Hojeetaa/uu Dhunfaa 3=Hojii guyyaa 4=Haadhamanaa 5=Hojetu mananamaa 6=Daldalaa 7=Daldala saala 8=Qotee bulaa 9=Bartaa/baratu 10=Kanan biraa
111	Ji,aan galin kee qarshi hamam	1=Qarshi---------- 2=gali homaa hin qabu 3=hinbeeku 4=kananbiraa-------

kuta II: Gaafilee waayee walqunamti saala qorreno HIV duraa fi Qorsaa isaa dura ilala

LAK	Gaafilee	Deebi	**Iradarbi**
201	Qorrano HIV yeroo jalqabaaf esatti godhatte?	1.Mana yaalaa kanati 2.Mana yaalaa biraati	
202	Goorsa qoreno HIV Kamitin qoramte	1.VCT 2.PICHT 3.Kanan biraa	
203	Qorranoo HIV erga gageesitee ji'aa /wagaa meeqa?	wagaa---------	
204	Yeeroo qoranno HIV gageesitu haali fudha fi heeruma kee maal fakaata?	1.Fuudhe/Heerume 2. Hin Fuune/Heerumene 3. Hiike 4. Narraa du'e	
205	Osso qorrano HIV hin godhin	1.Tokko	

	duraa michu walqunamti saala meeqaa qabdaa?	2.Lamaa 3.sadii fi sani oli	
206	Osso qorrano HIV hin godhin duraa bu'aa qorano HIV michu keeti bartee jirta?	1.eyyee 2.mitti	
207	Osso qorrano HIV hin godhin durra condomin fayadamtee jirtaa?	1.eyyee 2.mitti ⟶	LAK 301darbi
208	Yoo debin kee L **207,eyyee yoo** ta'e yeeroo hamamif fayadamtaa?	1.yeroo hundaa 2.yeroo baayinaan 3.Altokotokoo 4.yero muraasa	

kutaa II infoormashina waayye michoomaa

301	Haali fudhaafi heruma kee yeroo ammaa maal fakaata?	☐1=Fudhe/heerume ☐2=Hin fune/hinherumne(hiriyaa offi ni qabaa) ☐3 = Hin fune/hinheerumnee (walqunamti saala abaa argee waliin goodha) ☐4=Hinherumne(hiriyaa hin qabu)⟶	Lak 401 darbi
302	Hiriyaa kee walin jirataa?	☐ 1 = Eyyee ☐ 2 = Miti	
303	Erga michuu kee waliin walbeektani hamam turee?	_____	
304	Michuun kee dubisuuf barreesu danda'aa?	☐ 1 = Eyyee ☐ 2 = Mitti ⟶	LAK 306 darbi
305	Yoo debben kee **Lak304** eyye ta'ee barnnota iddileebarratee jiraa?	☐ 1 = Eyyee kutaa _____ ☐ 2 = Mitti	

306	Hojiin michuun kee hojeetu maali?	☐1 = Hojeetaa motumaa ☐2 = Hojeetaa dhuunfaa ☐3 = Hojeetaa NGO ☐4 = Daldaalaa/tuu walqunamti saala ☐5 = Qootee bulaa ☐6 = Haadha manaa ☐7 = Hojeetaa guyyaa ☐8 = barataa/baratuu ☐9 = kananbiraa _____	
307	Waligalteen michuu kee walin qabdan maalfakaata?	☐1=Waligaltee guudaa qabnaa ☐2=Yeeroo tokko tokkoo walloolaa ☐3=Walloollee jirraa ☐4=Addaan bahuuf taanaa ☐5=kanan biraa _____	
308	Attifii michuun kee waayee HIV haasooftani jirtuu?	☐1 = Eyyee ☐2 = Mitii	
309	Osso HIV hin qooratin duraa michu kee wallin waayee dhigaa qooratamu mari'aatani jirtuu?	☐1 = Eyyee ☐2 = Mitii ⟶	Lak 311 darbi
310	Yaadnii hiriyaa kee qooranoo HIV irrati qabuu/du maali?	☐1= Gamachisaa dha ☐2= Fedhii hin qabu ☐3= Ni aree/ niartee	

		☐4= kan biraa	
311	Bu'aa qooranoo HIV michuu kee ni beektaa?	☐1 = Eyyee ☐2 = Mitii →	**G313 darbi**
312	Deebin Lak311 Eyyee yoo ta'ee bu'aan qoranoo isaa maalii?	☐1=HIV positiivi ☐2=HIV nagatiivi ☐3=Hin beekamu	
313	Deebin Lak311 mitii yoo ta'ee bu'aan qoranoo HIV maal ta'uu danda'aa jetee yaada?	☐1=HIV positivi ☐2=HIV negativi ☐3=Hin beku	

Kutaa IV: Gaafilee himmanaa bu'aa qorrano HIV namota qorsa fudhata jiran iraatti godhamu

LAK	Gaafilee	Deebi	
401	Bu'aa qooranoo HIV kee namatii hiimatee jirtaa?	☐ 1 = Eyyee ☐ 2 = Mitii →	Lak404 darbi
402	Eyyee yoo ta'ee egnutti himatee? (**deebi tokko olli ni danda'amaa**)	☐1=Michuti ☐2=Haadhati ☐3=Abaati ☐4=Daa'imati ☐5=Warra manaa biraati ☐6=firatii ☐7=Hiriyaati ☐8=Abaa amantaati ☐9=Olaati ☐10=Kanan biraa	

404	Michun kee qooranoo HIV kee ni bekaa jeete yaadaa ?	☐ 1 = Eyyee ☐ 2 = Mitii	
405	Akka HIV dhigaa kee keesati argmu michu keetif himtee jirtaa?	☐ 1 = Eyyee ☐ 2 = Mitii ⟶	Lak **411** darbi
406	Yoom itti himtee?	_____	
407	**Debin Lak 405 eyyee** yoo ta'ee osso bu'aa qooranoo kee michuu ketitii hin himin duraa walqunamtii saala gootani jirtuu?	☐ 1 = Eyyee ☐ 2 = Mitii	
408	Dhibee HIV akka qabduu maalif michuu keetitti himtee?	☐1= Isaa/eshee faalu waan hin barbaaneef ☐2= Gargaarsaa isaa/eshee barbaade ☐3= Hiciiti hundaa waan walhindhoksinefii ☐4= seeraan gaafatamu waan hin barbaaneefii ☐5= Soodaa waaqayoo waanan qabufii ☐6=kanan biraa	
409	Bu'aa qoorano kee yoo dhagawu deebin michuu kee maal ta'aa jeete yaadee?	☐1=Nagargaaru ta'aa ☐2=malli jalaa badaa ☐3=Ni araa ☐4=Nibooyaa ☐5=Waldhabnaa ☐6=Nakuununsaa ☐7=Waayee bu'aa qooranoo mataa isaatif ciinqamaa ☐8=Waayee seenaa walqunamtii saala kiyaa gaafata ☐9=Natuumaa ☐10=walinjiraatu dhisuu danda'aa ☐11=kanbiraa_____	
410	Yammu bu'aa qooranoo kee dhagahu deebin mihuu kee maal turee?	☐1=Gargaarsaa turee ☐2=mala dhabee ☐3=Ni aaree ☐4=Nibooyee ☐5= Najajabeesee ☐6= Wallolee ☐7=gargaarsaa naaf godhee ☐8= Waayee bu'aa qooranoo HIV isaatif yaadee ☐9= Waayee seenaa walqunamtii saala kiyaa gaafatee ☐10=Natumee	

		☐11=wallin jireegnaa nidhaabe ☐12=kanbiraa_____	
411	Yoo hin himnee ta'ee maalif hin himanee?	☐1=Nahikaa/nahiktii jedhee ☐2= Ana iraaHIV qabamee jedhee niyaadaa ☐3= Anii nama badaa akkan ta'ee yaadaa ☐4=Anati ni aruu ☐5=Baayee daa'imaa waan ta'eef /taatef itti himu hin barbaanee ☐6=Nama biraati najalaa himaa ☐7=Rakko heeddu qaba ☐8= Hangan dhibamuti hin himu ☐9= ciinqisisu hin barbaadu ☐10=Natumaa jedheetan ☐11=Najjeesa jedheetan ☐12=Akka amanamaa hintaanee yaada jedheetan ☐13=kananbiraa_____	
412	Oggeesa iraa waayee faayidaa himanaa bu'aa qooranoo HIV fi rakko walqunatii saala ofegganoo hinqabnee goorsaa argatee jirtaa?	☐ 1=Eyyee ☐ 2.Mitii ☐3=Hinbeeku	
413	Walqunamti saala of eganoo hin qabnee yoo jeenu maal jechu keegnaa?	1=kondomi malee walqunamti goodhu 2=kondomin fayadamu 3=Qusanoo maati fayadamu dhabu 4=Bu'aa qoranoo HIV dhoksani walqunamti saala godhu 5= kanan biraa--------	
414	Namooni HIV walin jiran walqunatii saala ofegganoo hinqabnee yoo goodhan rakoon isaan mudatu nijiraa?	☐ 1=Eyyee ☐ 2=Mitii ⟶ ☐ 3=Hinbeeku	Lak501 darbi
415	Yoo deebin kee **LAK 413** eyyee ta'ee rakoon inni fidu maali	☐ 1=HIV straini harawaan qabamaa ☐ 2=Dhibee walqunamtii saala biraatin qabam ☐ 3=Dhibee ni haamaachisa ☐ 4=Rakoon dhibamaa HIV tif qoofaa ☐ 5=Hinbeku	

Kutaa V **Gaafile waayee walqunamti saala nama qoorsa fara dhibee HIV fudhatu ilaala.**

LAK	Gaafilee	Deebi	
501	Erga qorsa fara HIV jalqabdee ji'a/wagaameqa?	Ji'a/wagaa ----------	
502	Erga qorsa farra HIV jalqabdee fayaan kee akami?	1.Foyya.e jira 2.hin jijiramne 3.nati jabaachati deeme	
503	Feedhin walqunamti saala kee hoo maal fakaata?	1.dabalaa jira 2.akkuma duraa jiraa 3.gaddi bu'a jira	
504	Ji'ota3 darbee keesa walqunamti saala gotee bektaa?	1.eyye 2.mitti	
505	Nama meeqa walin walqunamti saala jia 3 darbee keesa gotee?	1. tokko 2. lamaa 3. sadii 4. afuri 5. shani fi oli	
506	Guuyyaan dhiyeegnati walqunamti saala hiriyaa kee walin gootee yoommi?	----------	
507	Yeeroo san ati fi hiriyaan kee koondomin fayadamtani jirtu?	☐ 1 = Eyyee ⟶ ☐ 2 = Mitii	Lak 510 derbi
508	Yoo deebin kee LAK507 mitii ta'ee maalif?	☐ 1.=Hiriyaan kiyya koondomidhaan fayyadamu hin barbaadu ☐ 2=Hiriyaan kiyaa takaaHIV dhan waanqabamef ☐ 3=walqunamtiin kondomin naaf hinmijaa'u ☐ 4=koondomi off haarkaa waanhinqabneefi ☐ 5=Hiriyaakiyaa kondomi gaafachun sodaadhe ☐ 6=Hiriyaan kiyaa akka dhibee saala hinqabnee yaadee ☐ 7=Dhugee waanturef kondomi	

		hinyaadanee ☐ 8=Daa'ima qabaachun fedhaa ☐ 9=kondomin akka HIV yero lamataa hinqabamnee hirisu isaa hinbekne ☐ 10=kondomin amantaa kiyyaa walin hindeemu ☐ 11=Takaa waanan qabamef hinfayadam ☐ 12=kanbiraa_____	
509	Erga HIV pozativi taate yeroo haamam kondomin fayadamte?	☐ 1 = yeroo hunda ☐ 2 = baayinaan ☐ 3 = yeroo tokotokoo ☐ 4 = yeroo hundaa fayadamee hinbeeku	

MICHUU YEROO HUNDAA HIN TAANEE

Amaa gaa fi walquunamti saala michuu /hiriyaa dhaabataa hintaane sigaafadha. Michu/hiriyaa dhaabataa hintaanee jechun hiriyaa hin fune, kan walin hin jiraane ykn qarshi kan itti hin kafalee jechu kooti.garu walqunamti saala altokkotoko ykn yeroo muraasaf kan wajin gootan jechu dha.

510	walqunamtii saala nama hiriyaa kee hin taanen wajin ji'ota sadeen derban keesa gotee jirtaa?	☐ 1 = Eyyee ☐ 2 = Mitii ⟶	Lak601 darbi
511	Bu'aan qoranoo HIV isaa/eshee maal ta'aa jetee yaada?	☐1=HIV positivi ☐2=HIV negativi ☐3=Hinbeekamu	
512	Bu'aa qoranoo HIV michu hiriyaan alaa san gaafate jirtaa?	☐ 1 = Eyyee ☐ 2 = Mitii	
513	Atti hoo bu'aa qoranoo kee itti himtee jirtaa/	☐ 1 = Eyye ☐ 2 = mitii	
514	Yeroo walqunamti saala hiryaa keetin ala gotuu kondoomin fayadamtee jirtaa?	☐ 1 = Eyyee ☐ 2 = Mitii	
515	Yeroo biraa hoo nama hiryaa kee hintaane kana wajin walqunamti saala ni gootaa?	☐ 1 = Eyyee ☐ 2 = Mitii ⟶	Lak601 darbi

516	Kondoomi yeroo meqaa fayadamu dandeesa ?	☐1=Yeroohundaa ☐ 2 = Iraa caalan ☐3=darbeedarbe ☐ 4 =Gongumaa hin feyadamu	

Kutaa IV: Gaafilee medicaala fi sykologgy

LAK	Gaafilee	Deebii	
601	Qorsaa HIV tif jechaa offeganoo walqunamtii saala gochun haafe jira?	1.eyyee 2.mitti	
602	Qorsaa faraa HIV addaan kutte beektaa?	1.eyyee 2.mitti	
603	Sadarkaa /malatoo dhibee HIV/AIDS dhibamaan mulisisu	1.malatoo qabaa 2.malatoo hin qabu	
604	Ji'aa sadeen darbee keesa Alcoli dhugdee beektaa?	1.eyyee 2.mitti →	L606 derbi
605	Yoo deebin L 404 eyyee ta'e torbaniti al meqaa dhugdaa?	1.altokko 2.al lamaa 3.al sadii 4.al afurii 5.alshani 6.aljahaa 7.altorbaa 8.altorbaa fi sani olli	
606	Araadda wayyi qabdu?ykn wanta araada jeetani fudhatan jiraa?	1.eyyee 2.mitti →	Asiiti dhaabi
607	Deebin kee **L406** eyye yoo ta'e araadda maali qabdu**?(deebi tokko olli nidanda'ama)**	1=caati 2=tanboo 3=haashisha 4=kookeeni	
608	Araadaaf jeete isa fudhatu kanaa torbanin Yeroo meqaa fudhata?	1.torbaniti altokko 2.torbaniti al lama 3.torbaniti alsadihi 4.torbaniti alafur 5.al afurii fi oli	

Galatooma

Gaafilee gaafattaadhan deegaramani gaddii fagegnaan gaafataman.

Yunivarsitii Finffinnee Faculitii Medisinii M.barnoota Fayyaa Hawaasaa Gaafilee Qoannoo bu'a qoranno HIV michuti himachu fi haala walqunamtti saala namoota vaayirasii HIV wajjin jiraachaa qoricha farra HIV fudhachaa hordofiirra jiranii, Asalla, Oromia.

Kuta I- Gaafilee haala haawasuma ilaala

- Umriin kee haamam? ----------
- saala gaafatamaa ---------- ----------
- Haala fudhaafi heerumaa kee? - ----------
- Hojin kee maali? ----------
- sabni kee maali? ----------
- Amantin kee maali? ----------
- Ji'aan galii hamam argataa? Qarshii----------
- Hamma kutaa meeqaa baratee jirtaa? ----------

Kutaa II-Oddefano waayee bu'a qoorrano HIV michuti himmachu

1. Walqunamti saala ji'ota sadden derbee keesatti gotee jirtaa
2. Walqunamti saala egnu wajin gote?
3. Bu'a qoorrano dhiga kee himtee jirtaa? maalif?
4. Akaataa yaada keetiti bu'aa dhigaa michuti himachun faayidaan inni Qabu maali?

Kutaa III – Oddefanoo waayee walqunamti saala

1. Ossoo dhibe HIV/AIDS dhan hin qabqmin dura haali walqunamti saala ati qabdu maal fakaata?
2. Dhibeen HIV/AIDS fedhii walqunamti saala irrati dhibaan inni sirrati fidee maali?
3. Haali walqunamti saala ati yeroo ammaa qabduu maal fakaata?
4. Haala yaada keetin namni HIV walin jiraatu michu walqunamti saala tokko qofaa qabaachunifi yeroo hundaa kondomin fayyadamun faayidaa maal qaba jeete yaada?
5. Namoni HIV walin jiraatan walqunamti saala wajin walqabatee balaan isaan fiduu danda'an maali jetee yaada?
6. Ji'oota sadden darban keesati alkooli dhugdee yokan wanta araada nama qabsisu fayadamtee beektaa? yoo deebin kee eeyye ta'e walqunamtin alcoholi ,wantoota araada nama qabsisani fi amala walqunamti saala maali? Akkamiti?

Gaafilee gaddi faggeegnaan tajaajila keenaa gaafatan

maqaan kiyya ---kanan hojjedhu -----kanan dhufee------. waayee bu'aa qoranoo HIV michuti himachufi haala wal qunamti saala akka walin mari'anuf barbaada. deebin sirri ta'ee ykn sirri hin taanee hin jiru. yaadni hundu fudhatama qabaa.Anni yaada hedun kaasu barbaada. Osso soda tokkoyu hin qabaatin yaada keesan kan dhugaa kaasu dandeetu. yaada tokko tokko akkan hin daganee teepi dhan waraabun fedha. yaadni isin kaastan hundi hiciitidhan qabame qooranoo kanaaf qoofa olaa.

Itti hirmaachuf fedhi qabdaa?

Waajiraa_____

Taayitaa_____

Umri_____

Saal_____

Ogumaa_____

Yeero tajaajilaa_____

1. Warri vaayirasin HIV dhigaa isaani keesati argamu hundi bu'aa qorano isaani namati ni ibsu jete niyaadaa?
2. Faayidaan isaa maali?
3. Muxxano keeti irraa namoni bu'aa qorano dhiga isaani ni himu? (ennun filatan? maalif)
4. Namooni tokko tokko maalif hin himmane jette yaada?
5. Akka tajaajila keenaa HIV/AIDS tti rakkon bu'aa qoranoo dhigaa himachun dhibama qunamu maali ?
6. Akka namooni vaayirasi walin jiraatan akka bu 'aa isaani himatanif maal goodhamu qaba jette yaada?
7. Haali wal qunamti saala isaan maal fakaata jeete yaada?
8. Akka yaada keetiti namoni vaayirasin dhiga isaani keesa jiruu condomidhan fayadamun fi nama tokko walin qofaa walqunamtii saala godhun maal isaan fayada jette yaada ?
9. Akka yaada keetiti namoni vaayirasin dhiga isaani keesa argamu akka offeganoo walqunamtii saala godhan maaltu godhamu qaba jeta?

Table 12: The theme, categories and codes as identified from the qualitative data

Theme : Sero status disclosure and sexual behavior is hampered by fear of stigma, dependency, cultural taboos and alcohol use

Categories	1-prior sexual behavior	2-Proces of disclosure	3- Influencing the decision to disclose	4-Asearch for acceptance and help	5- Recognition of discomforts	6-Feeling of problem in harm reduction behavior	7- Limited scope of condom use	8-Feeling of culturally accepted
Cods	-Multiple partner -In consistent condom use	-Educated did not disclosed -Gap of disclosure -Hid -Not as expected -Told -No discrimination -Together	-Fear of confidentiality -Fear of divorce -Multiple partner -Economic dependency -Not labeled as bad person -Sex in exchange of money	-Care and support -Partners HIV result is negative -Drug adherence -To lead peaceful life -Mental rest -To prevent infection	-Discrimination -Healthy life -Divorce Disagreement	-Casual sex -Multiple partner -Forget them self -Not used condom -Sex in exchange of money -Unprotected sex -Young people -Used condom	-Intoxicated -Forget them self -I don't -Males not used -No behavioral change -Not controlled them selves -Working in the bar -Make mistake	-Has great connection -Is cultural to drink -Drunker -Intoxicated -Make mistake -Forget their status -Risky sex

Declaration:

I, the undersigned, declare that this is my original work and has not been presented in this or any other University and all sources of materials used for this thesis have been duly acknowledged.

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This thesis has been submitted for examination with my approval as University advisor

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