
**ADDIS ABABA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

# HIV POSITIVE STATUS DISCLOSURE AND HIGHLY ACTIVE ANTIRETROVIRAL THERAPY ADHERENCE AMONG PEOPLE LIVING WITH HIV IN AMBO HOSPITAL, WEST SHEWA ZONE, OROMIA REGION, ETHIOPIA

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**A Thesis submitted to the School of Graduate Studies of Addis Ababa University in partial fulfillment of the requirements for the Degree of Master in Public Health (MPH)**

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**ADDIS ABABA, ETHIOPIA**

**ADDIS ABABA UNIVERSITY**
**SCHOOL OF GRADUATE STUDIES**

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# Table of content

Acknowledgments ..... I

Table of content ..... II

List of Figures ..... V

Abbreviations ..... VI

Abstract ..... VII

1. Introduction ..... 1

1.1. Background ..... 1

1.2. Statement of the problem ..... 2

2. Literature review ..... 4

2.1. HIV positive sero-status disclosure ..... 4

2.2. Barriers of HIV positive status disclosure ..... 5

2.3. Outcomes of HIV status disclosure to sexual partner ..... 6

2.4. ART adherence rate ..... 7

2.5. Reasons for missed doses/ART non adherence ..... 7

2.6. Relationship between HIV status disclosure and HAART adherence ..... 8

3. Objectives ..... 12

3.1. General objective ..... 12

3.2. Specific objectives ..... 12

4. Subjects and methods ..... 13

4.1. Study design and period ..... 13

4.2. Study area and population ..... 13

4.5. Sample size determination ..... 14

4.6. Sampling procedures ..... 15

4.6.1. Sampling procedures of the quantitative study ..... 15

4.6.2. Sampling procedures of the qualitative study ..... 17

4.7. Data collection procedures ..... 17

4.10. Variables ..... 19

4.10.1. Dependent variable ..... 19

4.10.2. Independent variables ..... 19

4.11. Operational definitions ..... 19
4.12. Ethical considerations ..... 20
4.13. Dissemination of results ..... 20
5. Results ..... 21
5.1. Socio- demographic characteristics of the study participants ..... 21
5.2. Rate of HIV positive status disclosure ..... 23
5.3. Reasons for non disclosure and outcomes of disclosure ..... 24
5.3.1. Reasons for non-disclosure ..... 24
5.3.2. Outcomes of HIV status disclosure to sexual partners ..... 25
5.4. Rates of adherence, dose missed and reasons for non adherence ..... 26
5.5. Relationship between HIV status disclosure and ART adherence ..... 27
5.6. Factors associated with HIV positive status disclosure to sexual partner ..... 28
5.7. Association of HIV positive status disclosure with HAART adherence ..... 31
5.8. Findings of focus group discussion ..... 33
5.8.1 Factors influencing HIV status disclosure ..... 33
5.8.2. Outcomes of HIV status disclosure to sexual partner ..... 33
5.8.3. Disclosure facilitates HAART adherence ..... 34
6. Discussion ..... 35
7. Strengths of the Study ..... 38
8. Limitations of the study ..... 38
9. Conclusions ..... 39
10. Recommendations ..... 40
11. References ..... 41
Annexes ..... 45
Annex I. Study information sheet ..... 45
Annex II. Consent form ..... 46
Annex III. English questionnaires ..... 47
Annex IV. Afan Oromo questionnaire ..... 54
Annex .V. FGD guidelines ..... 64

## List of Tables

Table 1: Socio-demographic characteristics of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012..... 22

Table 2: Outcomes of HIV status disclosure of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012..... 25

Table 3: Determinants of HIV positive status disclosure to sexual partner among PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 ..... ..30

Table 4: Role of HIV positive status disclosure on ART adherence as reported by PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 ……32

## List of Figures

Figure 1: Interrelationships between different aspects of disclosure and HAART adherence Ambo Hospital, West Shewa Zone, Oromia,2012 ..... 10

Figure 2: Conceptual framework of HIV status disclosure and HAART adherence among PLHIV in Ambo Hospital, West Shewa Zone, Oromia,2012…….....11

Figure 3: Schematic presentation of sampling procedure, Ambo Hospital West Shewa Zone, Oromia, 2012 ..... 16

Figure 4: First time HIV positive status disclosures of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 ..... 23

Figure 5: Reason of non disclosure of HIV status to anyone and to their partner of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 ..... 24

Figure 6: Reasons for non adherence of study subjects attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 ..... 26

Figure 7: Mechanisms by which ART initiation facilitates HIV status disclosure as reported by PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 .... 28

## Abbreviations

| | |
|---|---|
| **AAU** | Addis Ababa University |
| **AIDS** | Acquired immunodeficiency syndrome |
| **AOR** | Adjusted odds ratio |
| **ART** | Anti-retroviral therapy |
| **CI** | Confidence interval |
| **COR** | Crude odds ratio |
| **FGD** | Focus group discussion |
| **HAART** | Highly active anti-retroviral therapy |
| **HCT** | HIV counseling and testing |
| **HIV** | Human immune deficiency virus |
| **IRB** | Institutional Review Board |
| **JUSH** | Jimma University Specialized Hospital |
| **MOH** | Ministry of Health |
| **PLHIV** | People living with HIV |
| **PMTCT** | Prevention of mother to child transmission |
| **SD** | Standard deviation |
| **SPH** | School of Public Health |
| **SPSS** | Statistical Package for Social Sciences |
| **UNAIDS** | United Nations‟ Program on HIV/AIDS |
| **VCT** | Voluntary counseling and testing |
| **WHO** | World Health Organization |

# Abstract

**Background:** Disclosure of HIV sero-status and adherence to Anti-retroviral therapy (ART) medication is important for the prevention and control of HIV/AIDS. Little is known about the relationship between HIV positive status disclosure and highly active anti-retroviral therapy (HAART) adherence in developing countries including Ethiopia.

**Objective:** To assess the relationship between HIV positive status disclosure and HAART adherence among PLHIV attending ART clinic of Ambo Hospital in West Shewa Zone.

**Methods:** A cross-sectional study using quantitative research approach and supplemented by qualitative methods was conducted from January to February 2012 among 420 people living with HIV (PLHIV) attending ART clinic in Ambo Hospital. Simple random sampling method was used to select the study participants. Data were collected through face to face interview and focus group discussion using pre-tested structured questionnaire and semi structured guides, respectively. The data were summarized in percentages, tables and graphs; crude and adjusted odds ratios using logistic regression analysis were used to explore associations between different variables and HIV status disclosure and ART adherence.

**Results:** The study revealed that the prevalence of HIV status disclosure to at least one person and highly active anti-retroviral therapy adherence was 86.2% (95% CI: 82.52-89.34) and 86% (95% CI: 82.2-89.13) respectively. Prevalence of HAART adherence among PLHIV who disclosed their sero status was 88.7% (95% CI: 84.95-91.75) where as the prevalence of HAART adherence among PLHIV who didn‟t disclose their status was 69% (95% CI: 55.46-80.46). HIV status disclosure to at least one person (AOR=3.42, 95%CI: 1.60-7.29) and being literate (AOR=2.13, 95%CI: 1.08-4.22) were significantly associated with HAART adherence.

**Conclusions:** HIV positive status disclosure was a significant predictor of HAART adherence. Hence, intervention programs to improve HAART adherence should consider both the potential benefits and risks associated with HIV status disclosure and assist PLHIV to prepare for HIV status disclosure and reduce potential negative impacts that come with it

# 1. Introduction

## 1.1. Background

An estimated 33.3million people were living with Human Immunodeficiency Virus (HIV) worldwide in 2009. Sub-Saharan Africa still bears an inordinate share of the global HIV burden. At the end of 2009, 22.5, 1.8 and 1.3 million people were living with HIV, newly infected and died of AIDS in sub Saharan Africa respectively (1). According to Ethiopia Demographic and Health Survey (EDHS) report of 2011, adult prevalence of HIV infection in Ethiopia was 1.5 %. The prevalence was higher among women (1.9%) than men (1.0 %) (2).

The total number of PLHIV in Oromia for 2009/10 was 287,301, of which majority (58.8%) were females. The adult HIV prevalence was 1.6% (1.3% for male and 1.9% for female).The total number of PLHIV in need of antiretroviral therapy (ART) for the same year was 113,741. According to the Ministry of Health (MOH) report of 2009/10, the total number of people involved in voluntary counseling and testing (VCT) in Oromia was 2,749,439, with sero positive status prevalence of 1.4% (3).The number of health institutions providing VCT, ART and prevention of mother to child transmission (PMTCT) in the region were 599, 144, and 260 respectively (3).

HIV status disclosure is important for HIV prevention and highly active anti- retroviral therapy (HAART) adherence (4). Disclosure provides many important benefits to the infected individual and to the public. It motivates sexual partners to seek testing, change behavior and ultimately decrease transmission of HIV. For example, women who disclose their status to partners may be more likely to participate in PMTCT programmes. By adequately addressing the emotional, social, and practical sequel of her positive status, she may be more willing to adopt and maintain health behaviors such as cessation of breastfeeding or adherence to treatment regimens (5).

However, disclosure of HIV status may have potential risk for the infected individual, such as disruption of family relationship, stigma and rejection/discrimination, and blame (6-9). Disclosure was less likely to have occurred if the woman had experienced two or more of the different types of violence (7).

The fear of stigmatization may force PLHIV to hide their HIV status. For instance, a study done in Botswana on barriers to antiretroviral adherence to patients living with HIV infection and AIDS showed that due to the fear of stigma, 69% kept their HIV status secret from their families, and a further 94%kept it secret from their society (10).

Initiatives to provide antiretroviral therapy sometimes require that patients disclose to a supportive individual in their network, on the basis of a large body of evidence indicating that disclosure facilitates initiation of and adherence to antiretroviral therapy, whereas worries about disclosure contribute to secrecy and missed medications (4, 11). To encourage beneficial disclosure, countries need to establish safe social and legal environments in which more people are willing and able to get tested for HIV and are empowered and encouraged to change their behavior according to the results (12).

## 1.2. Statement of the problem

HIV/AIDS prevention and control is an important issue raised worldwide. Disclosure of HIV positive sero-status to sexual partner, family members and other relatives play a significant role in the prevention and control of HIV/AIDS through increasing HIV counseling and testing (HCT) of the partner, provide psychosocial and mental support for the client in order to practice health behavior, adhere to treatment regimen and promote quality of life (4, 5, 8).

Disclosure can have a significant impact on adherence to medical regimens; reduce HIV transmission, access to support services, reductions in mental health symptoms and effective adaptation to living with HIV. A study conducted in Cameroon among HIV infected women and in Uganda among people living with HIV revealed that disclosure of HIV sero status was critical because of its significant links to safer sex practices (13, 14). A study done in Botswana and New York showed that nondisclosure of positive HIV status to their partner/relatives were predictors of poor adherence of ART (15, 16).

Also another study done in rural China and Tanzania showed that HIV status disclosure was a significant predictor for access to care (17, 18). Despite the importance of VCT, ART and PMTCT services in reducing the burden of HIV/AIDS; HIV positive status disclosure and HAART adherence reduce HIV transmission, prevent morbidity and mortality associated with non-disclosure and non adherence (5, 8).

In Ethiopia, rate, barriers and outcomes of HIV positive status disclosure, determinant and magnitude of ART adherence were assessed, but there is still a gap in assessment of the relationship between HIV positive status disclosure and HAART adherence. Therefore, this study was carried out to fill this gap in addition to assess the magnitude of HIV positive status disclosure and the level of HAART adherence.

## 2. Literature review

### 2.1. HIV positive sero-status disclosure

A study done on gender dimensions of HIV status disclosure to sexual partners showed that there was variation in the targets of disclosure among the studies. The majority of the studies focused on HIV status disclosure to sexual partners, friends, family members and few of the client disclose their sero status to health care providers, neighbors and co-workers (5).

The disclosure rates to sexual partners were quite high for developed countries which ranged from 42% to 100%, depending on the type of sexual partner to whom the person is disclosed. The lowest rates of disclosure were reported among past partners or current casual partners. Among the studies, that reported disclosure rates to current and/or steady sexual partners the average rate of disclosure was 79% (5). For developing countries, the rate of HIV status disclosure to sexual partners ranged from 16.7% to 86%. Among the studies that reported disclosure rates to current and/or steady partners the average rate of disclosure was 49%, considerably less than the average rate reported from studies conducted in the developed world (79%) (5).

A study conducted in southeastern Nigeria among 280 HIV positive pregnant women attending a PMTCT clinic in Nnewi revealed the highest rate (97.1%) of HIV positive sero status disclosure to different population segment, majority of the women disclosed their sero status to their sexual partners (husbands) which accounts for 90% followed by priest/pastor (23.5%) and 11.4% to a close family member (19).

Another study conducted in South Africa among 293 HIV positive pregnant women showed that 81% of the women disclose their sero status to at least one person, from which 67% of them had disclosed to their partners and 59% had disclosed to others (20). Study conducted in rural Malawi on disclosure of HIV status between spouses showed that disclosure was not limited to a spouse more than one-third of men and women disclose their HIV status to a relative and a friend; only 4% of women and 1% of men did not disclose their HIV status to anyone else (9).

A study conducted on HIV disclosure across diverse settings and a case control study conducted in Mityana district of Uganda showed that disclosure rate was low among women following prenatal care (4, 7). Another study done in Zimbabwe, Makonde district, among 334 women attending the PMTCT programme showed that 34% of respondents did not disclose their sero status. Forty five percent (26) of HIV positive respondents did not disclose their HIV status compared to 32.2% (88) HIV negative respondents (21).

Study done in different parts of Ethiopia in Mettu and Gore towns, Jimma and Hawasa found that 69%, 90.2% and 85.7% of the respondents disclose their sero status to their sexual partner, whereas 94.5% and 92.2% of the respondents disclose their sero status to their family members in addition to their partner respectively (8, 22, 23).

## 2.2. Barriers of HIV positive status disclosure

A study done on rates, barriers and outcomes of HIV sero status disclosure among women in developing countries revealed that fear of abandonment, rejection/discrimination, violence, upsetting family members and fear of accusations of infidelity are the most common barriers to disclosure (6).The barriers that individuals face when deciding to share their results with their partner will vary depending on the circumstances under which they were tested. For example, barriers to disclosure will be different for women who were tested in an antenatal care context as compared to women in HIV VCT clinics (4, 5).

Fear of abandonment and loss of economic support were the major barriers that were mentioned most often by participants from studies both in the developed and developing world. These barriers are particularly common in the disclosure of HIV status to sexual partners especially for women of developing countries; in a setting where resources are extremely scarce and women's access to resources independent of their partner is uncommon. In addition to fearing abandonment and loss of economic support, several studies found that fear of social isolation and discrimination from family members and from the wider public (5, 6, 8).

Astudy conducted in Uganda, Malawi and Ethiopia showed that the main reason for non disclosure were fear of divorce, violence, discrimination, stigma and fear of accusation of promiscuity/infidelity; where as the reason for disclosure were to get financial and social support, the need to get treatment and wanted their partners to undertake the test (7-9, 22, 23).

Age, duration of relation with the partner, level of education, culture, discussion on HIV and its test among the partners before the test, number of partners are common factors associated with disclosure of one‟s own sero status to the partners and relatives. A case control study conducted in Mityana Uganda revealed that respondents who were more than 25 years of age, unmarried/single and those who had less than two sexual partners in the last 12 months were more likely to disclose their HIV positive status (7). A study done in southwest Ethiopia among women in Metu and Gore towns showed that women who had prior discussion about HIV and HIV test with their partner were more likely to disclose their sero status to their partner than those did not discusses (8).

## 2.3. Outcomes of HIV status disclosure to sexual partner

Most studies conducted both in developing and developed countries reported that positive outcomes were common following disclosure. A meta analysis study conducted by WHO on gender dimensions of HIV status disclosure to sexual partners showed that majority of the respondent reports positive outcomes like increase support, acceptance and kindness following disclosure of their test result to their partners. The study also revealed that disclosure of HIV positive status to one else associated with less anxiety, fewer symptoms of depression, and increased social support (5).

Another study done on rates, barriers and outcomes of HIV sero - status disclosure among women in developing countries showed that majority of the women receive kindness, understanding or acceptance following disclosure of their HIV sero status. The study also found that disclosure was not associated with the break-up of marriages (6). A study done among HIV positive pregnant women in Nnewi southeastern Nigeria showed that partner reaction following disclosure was supportive (19). Similar studies conducted in Ethiopia revealed the same finding with study done in developing countries (8, 22, 23).

However several studies found that blame, abandonment, anger, violence, stigma and depression were common negative outcomes following disclosure of their status (5, 6). A meta analysis study and study conducted in Ethiopia among women attending ART clinic at Hawassa University Referral Hospital found that 4% to 28% and 59.3% of respondents experience negative out comes following disclosure of their sero-status to their partner respectively (6, 23).

## 2.4. ART adherence rate

Most studies done in sub-Saharan Africa reveals ART adherence rates vary depending on the time and place studied. A study done in Brazil showed that Self-reported medication adherence was 82% (24). The study conducted in three private clinics in Botswana found self reported and provider assessment adherence rates of 54% and 56%, respectively (10). A meta-analysis of adherence studies done in sub-Saharan Africa and North America established an estimated 77% in Africa compared to 55% found in North America (25). Another study conducted among 253 PLHIV on ART in Ilorin, Nigeria showed that most, 179 (70.8%), respondents were adherent to medications (26).

A study conducted in south west Ethiopia among 319 adult PLHIV (≥ 18 years) attending ART clinic at Jimma university Specialized Hospital showed that 95% of the respondents were adherent based on self report of missed doses (dose adherence).The study also found that the rate of self reported adherence in the study based on the combined indicator of the dose, time and food adherence was72.4% (27). Another study done in Addis Ababa and South Ethiopia revealed that the prevalence of ART adherence was 81.2% and74.2% respectively (28, 29). A study done among 504 people living with HIV in Northwest Ethiopia and among 368 HIV-positive pregnant mothers attending the PMTCT in Nigeria revealed that prevalence of non adherence was 17.3% and 21.7% respectively (30, 31).

## 2.5. Reasons for missed doses/ART non adherence

The most frequently endorsed reasons for missed doses were related to forgetfulness, not having the medication, busy with other things, away from home, being with people who didn‟t know my status and being not want to be noticed by others when taking the drugs or reason related to non disclosure of one‟s own HIV status (16, 24, 27, 31, 32) .

A Study done in south western Uganda revealed that the main reasons given for missing doses were simply forgot (35%) and not having the medicines with them at the time they were supposed to be taken. The study also found that nondisclosure of HIV status to at least one family member was significant predictors of HAART non adherence (33).

Another study done Thailand also showed that forgetfulness was main reason of missing medication dose/non adherence to medication (34). Study conducted in Brazil among 182 participants revealed that; of 145 patients reporting missing at least one dose of drugs, the most frequent cause of not taking medication was being away from home (56%), requirement for a change in daily routine (38%) and simply forgot 34.5% (35).

Studies conducted in different part of Ethiopia also found similar reason mentioned in Africa. The study done in south west Ethiopia revealed that simply forgot, away from home ,busy with other things were the main reason for missing medication dose (27). Another study done in Wolaita and Gamo Gofa Zones, South Ethiopia showed being too busy or simply forgot (36.8%), being away from home (34.7%), being not want to be noticed by others when taking the drugs (20.0%), were the common reason for missing medication dose (32).

## 2.6. Relationship between HIV status disclosure and HAART adherence

Most studies conducted both in developing and developed countries showed that disclosure and HAART adherence interrelated each other (4, 16). Disclosure of HIV status and adherence to ART can affect each other in several ways. A qualitative study done in Los Angeles, Milwaukee, New York and San Francisco among 152 HIV-positive adults showed that HIV status disclosure and HAART adherence are interrelated and interdependent on each others. The study revealed that taking ART medication and side effect of the medication were encouraging the patient to disclose their sero-status (36).

The study also found that the therapeutic effect of HAART can delay or impede disclosure. In addition to this the study also revealed that HIV status disclosure can also lead to social support that can promote health and facilitate starting and adhering to treatment; on the other hand disclosure of HIV status to one else leads PLHIV to poor adherence as a result of opposition from the person to whom they disclose their sero-status regarding the ART medication the client took (36).

A study conducted among 215 HIV sero positive patients who demonstrated poor adherence(<80%) in New York showed that 19% of the respondents reported missing medication dose in the last two months due to concerns regarding sero status disclosure (16). A study done in Southwestern Uganda also showed that nondisclosure of HIV status to at least one family member was a significant factor associated with non adherence (33).

A meta analysis study conducted on facilitating HIV disclosure across diverse settings showed that, initiation of antiretroviral therapy sometimes requires disclosure of HIV sero status to a supportive individual in their network, the study also found that disclosure facilitates initiation of and adherence to antiretroviral therapy, whereas worries about disclosure contribute to secrecy and missed medications (4). Disclosure is also thought to be a critical component in building client-practitioner relationships and in enabling therapeutic progress (37).

A study conducted among 150 PLHIV on ART at least for six months in Tanzania showed that HIV sero status disclosure is a protective effect of incomplete adherence and virologic failure (18). A study done in Thailand among 386 PLHIV on ART found that 121(31.4%) of the respondents fail to adhere to their medication, of these 18% of the respondent reported that the reason for non adherence was afraid of stigma if their HIV status was disclosed. The study also revealed that HIV disclosure, and family communications were significant predictors of HAART adherence (34). A qualitative descriptive exploratory study done in western Uganda among HIV-positive women attending an antenatal clinic in a regional Hospital shows that non-disclosure of their HIV-positive status was the most significant barrier to enrolling in the programme and continuing treatment (38).

Another study conducted in Cambodia among 386 PLHIV on ART showed that respondents who had disclosed their status to two or more family members or to their steady partner were more adherent to ART than their counter part. The study also found that limited HIV status disclosure was independently associated with non adherence (39). Figure 1 shows the inter-relationship between HIV status disclosure and HAART adherence. In addition Figure 2 shows that the conceptual frame work developed for this study.

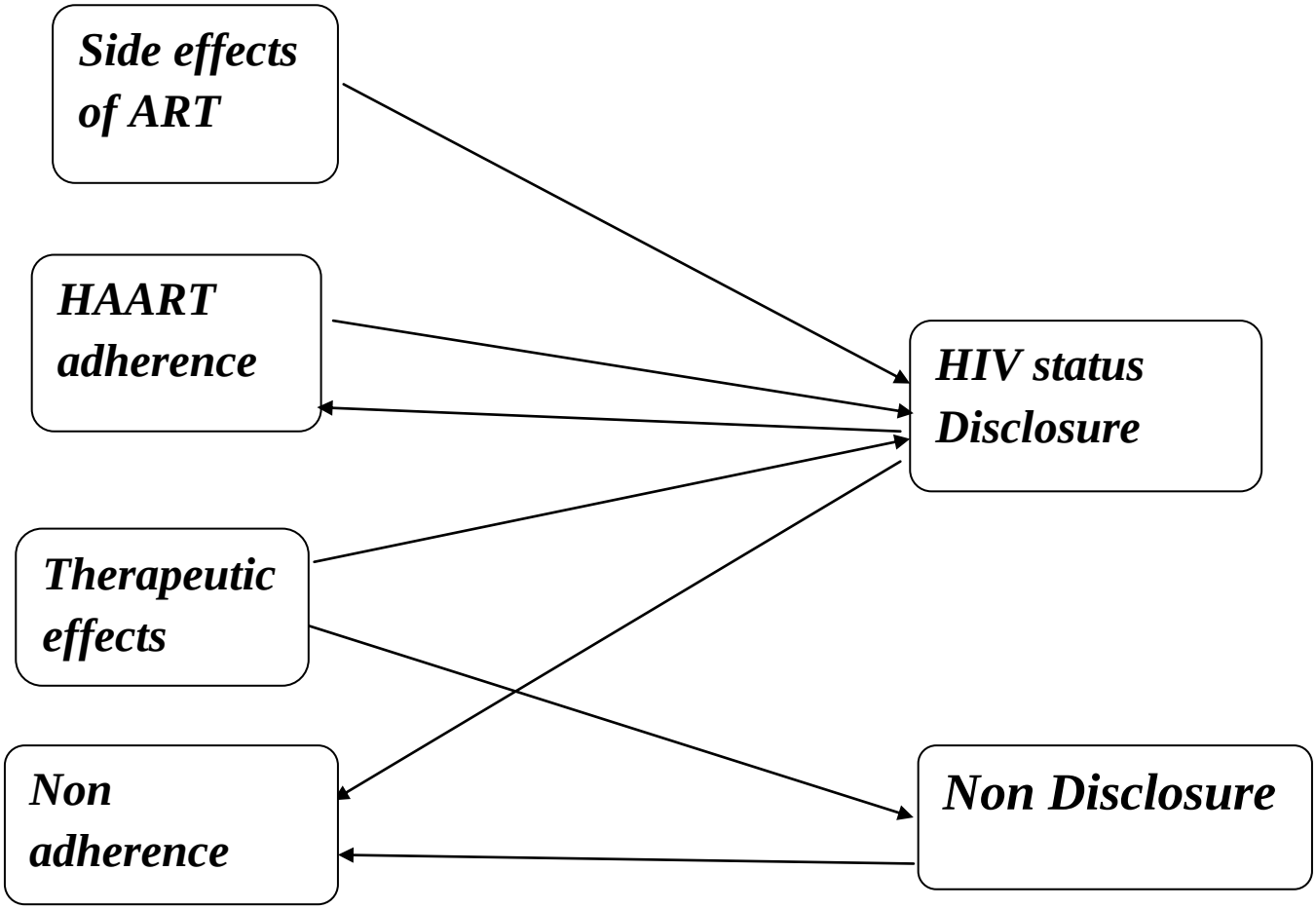



Figure 1 : Interrelationships between different aspects of disclosure and HAART adherence Ambo Hospital, West Shewa Zone, Oromia, 2012

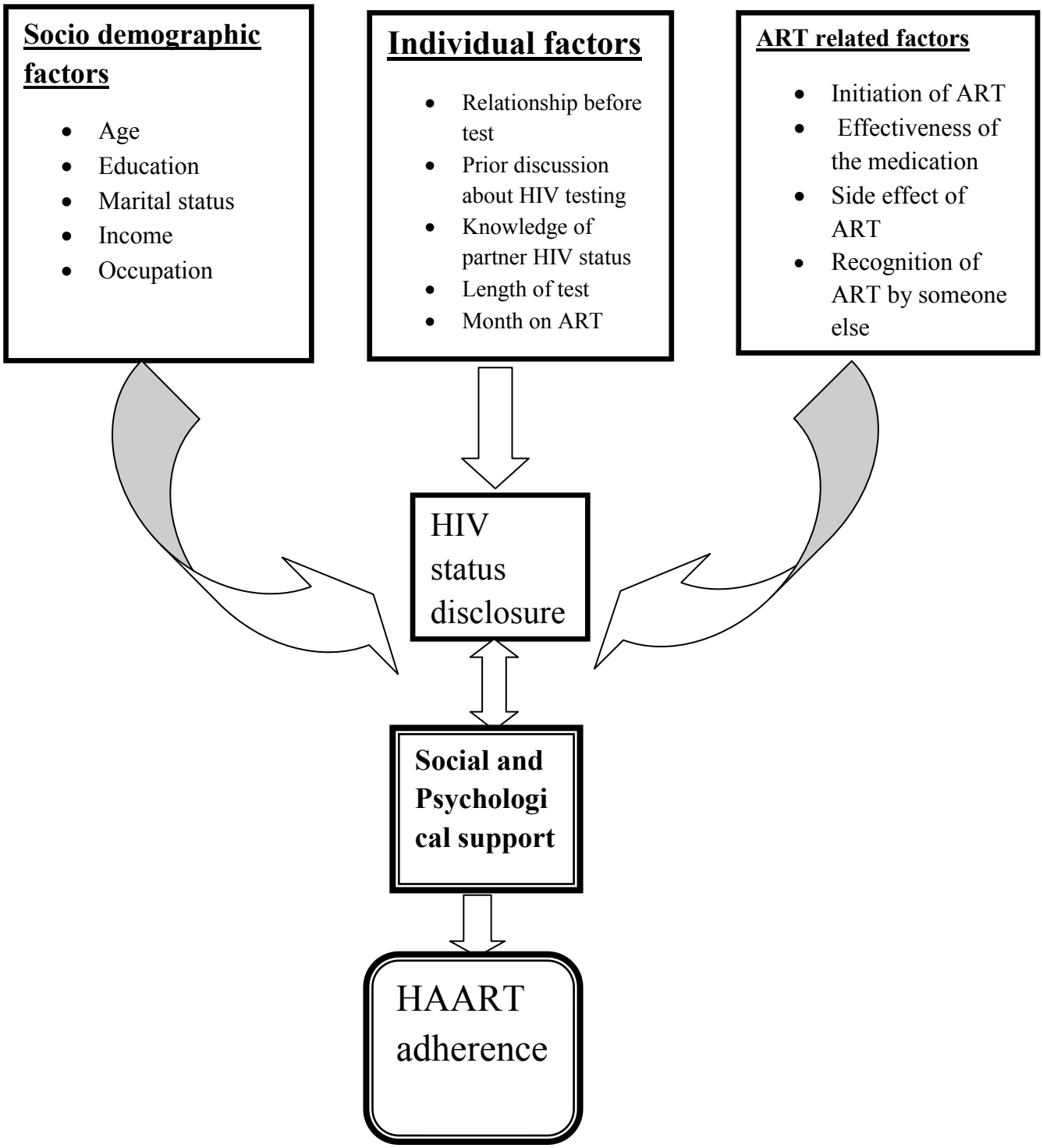



Figure 2: Conceptual framework of HIV status disclosure and HAART adherence among PLHIV in Ambo Hospital, West Shewa Zone, Oromia, 2012

# 3. Objectives

## 3.1. General objective

To assess the relationship between HIV positive status disclosure and HAART adherence among PLHIV, attending ART clinic of Ambo Hospital, in West Shewa Zone.

## 3.2. Specific objectives

I. To identify the rate of HIV positive status disclosure among ART clients

II. To assess the level of HAART adherence among ART clients

III. To determine the relationship between HIV positive status disclosure and HAART adherence

IV. To assess factors affecting HIV positive status disclosure.

# 4. Subjects and methods

## 4.1. Study design and period

Hospital based cross sectional study was conducted from January to February 2012 using quantitative research approach supplemented by qualitative methods.

## 4.2. Study area and population

The study was conducted at Ambo Hospital in West Shewa Zone of Oromia Regional State. Ambo town, which is the capital of West Shewa Zone, is located at114 km to the West of Addis Ababa. There are different levels of both government and private health facilities offering health services in the town. Ambo Hospital is the only Zonal Hospital in West Shewa Zone; currently it provides comprehensive health services (prevention and curative) including VCT, ART and PMTCT services. The ART clinic was established in October 2005. A total of 4019 patient started ART from which 2224 clients were currently on ART and 3006 clients were on pre–ART. The ART service was provided by one physician, two nurses, one laboratory technician, one pharmacy technician and three data clerk; who were trained on VCT and ART.

## 4.3. Source population

The source populations were all PLHIV who were on ART at Ambo Hospital.

## 4.4. Study population

The study subjects were all PLHIV who were currently on ART at Ambo Hospital visiting the ART clinic from January 1 to February 30 2012.

## Inclusion and exclusion criteria

### Inclusion Criteria

Study subjects were all PLHIV on ART and at least 18 years old; able to give informed consent, and not critically ill.

### Exclusion criteria

PLHIV on pre-ART, start ART during the study period were excluded from the study.

## 4.5. Sample size determination

The sample size required for this study was determined by using the formula for estimating single population proportion; by assuming that the prevalence of ART adherence among PLHIV who disclose their HIV positive sero status was 50% and 5% level of significance and 5% margin of error (precision) the sample size was 384, by considering 10% non response rate the final sample size was 422 PLHIV on ART.

The sample size was calculated using the following formula:

$$n = \frac{(Z\alpha/2)^2\, p\,(1-p)}{d^2} = \frac{(1.96)^2 \times 0.5(1-0.5)}{0.05^2} = 384$$

Non-response rate 10% = 38.4 + 384= 422

Total sample size was 422

**Where,**

n= the desired sample size

p= Prevalence of HAART adherence among PLHIV who disclose their HIV positive sero status (50%)

Z= 1.96 (95% confidence interval)

d= margin of error (5%)

A total of four purposively selected focus group discussions were conducted among PLHIV who were currently on ART but not participated in the quantitative study were included in the qualitative study.

## 4.6. Sampling procedures

### 4.6.1. Sampling procedures of the quantitative study

Preliminary assessment was conducted to identify PLHIV who were on ART at Ambo Hospital from the registration book of the clients. Four thousand and ninety(4019) PLHIV start ART at Ambo Hospital; of which 3696 PLHIV were 18 years and above .From 3696 PLHIV who where at least 18 years 792, 496, 177 and 7 clients transferred out, default, died and lost respectively and only 2224 PLHIV were currently on ART at Ambo Hospital. One thousand (1000) PLHIV who full field the inclusion criteria was identified during the study period (January1- February30, 2012). To maintain the confidentiality of the study participant information unique number was provided for each client‟s card number. From client‟s unique number the sampling frame of PLHIV who were currently on ART was produced and 422 study subjects were selected using computer generated random number.

To make the data collection process easier the client appointment date was also identified for 422 PLHIV who full filled the inclusion criteria. Based on their appointment date the selected PLHIV were interviewed; during the data collection period from 422 PLHIV who full field the inclusion criteria; only412 PLHIV visited the ART clinic and were interviewed on their appointment date. Of 10 study subjects who did not come on their appointment date, 2 respondents refused the interview, eight respondents were interviewed on another day after the contact with data collectors. Figure 3 shows that schematic presentation of sampling procedure of the study population.

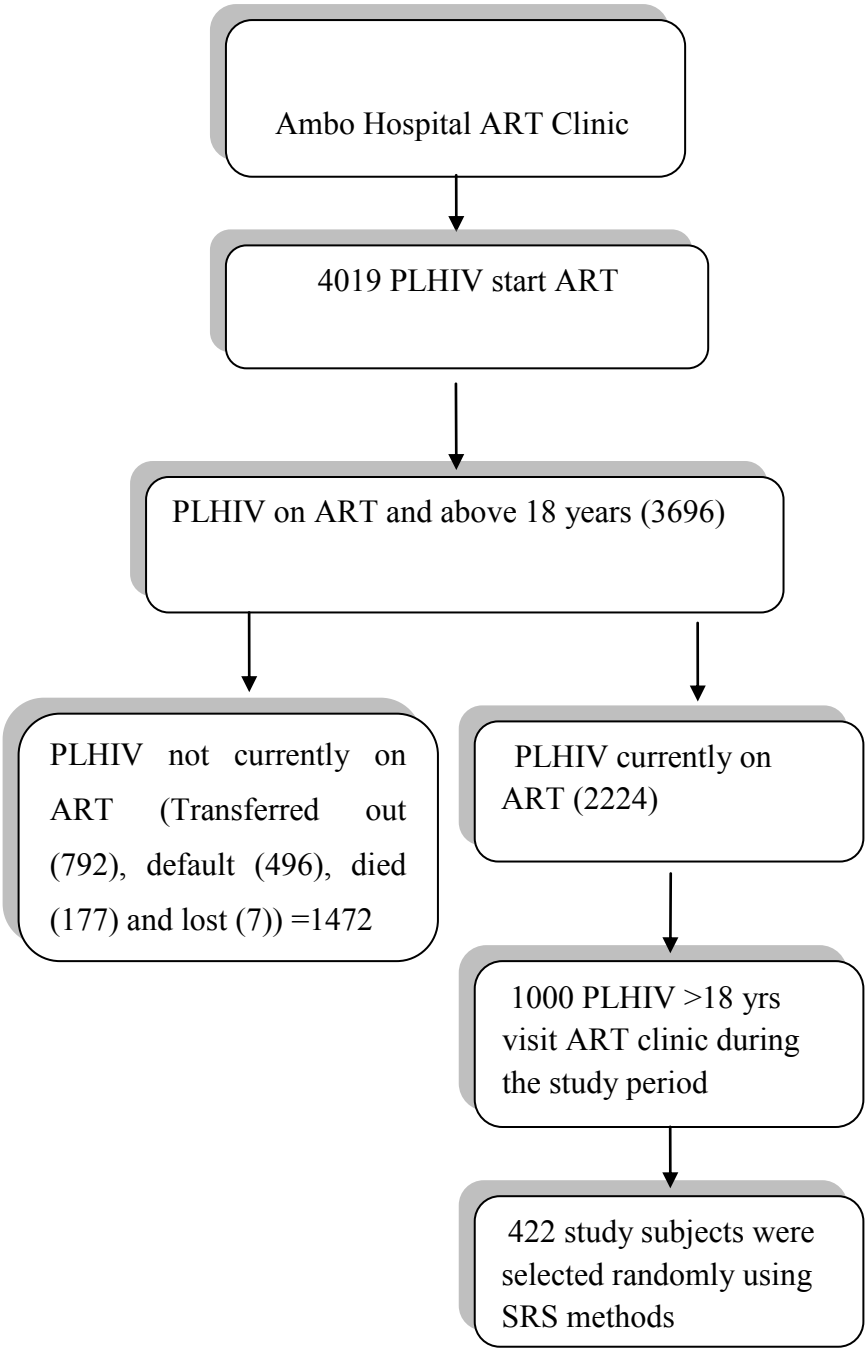



Figure 3: Schematic presentation of sampling procedure, Ambo Hospital West Shewa Zone, Oromia, 2012

### 4.6.2. Sampling procedures of the qualitative study

For the qualitative study which supplements quantitative study the study subjects for focus group discussion (FGD) were selected purposively.

## 4.7. Data collection procedures

**Quantitative data collection**: Data on socio-demographic variables, HIV status disclosure, barriers and outcomes of disclosure, ART adherence assessment and relationship between disclosure and HAART adherence were collected from January to February 2012 by using a pre-tested standardized and structured questionnaire prepared by reviewing prior study and other materials on the topics with some modification (annex III). The questionnaire was prepared with an aim to answer the main study question of the research in English language and translated into Afan Oromo and back to English by principal investigator and other personnel fluent in both languages to prevent possible misunderstanding and misinterpretation.

The questionnaire contains mainly close-ended questions and few open ended questions. To maintain the confidentiality of the information/study participant; the interview was conducted by 3 nurses who were working in Ambo Hospital ART clinic. Data collection process was supervised by principal investigator and health officer. All data collectors and supervisors were trained for 2 days by the principal investigator. Data collectors approached the PLHIV by introducing themselves and collect information after explaining the purpose of the study by reading the study information sheet.

**Qualitative data collection**: A semi-structured interview guide was employed to explore disclosure status and ART adherence, barriers and outcomes of disclosure and relationship between disclosure and HAART adherence were designed in English and translated into Afan Oromo (Annex V and VI). The FGDs were conducted by the principal investigator and one HO as note taker. The principal investigator interview the discussant while a note taker took field notes. The interviews were recorded using tape record. The questionnaires for both study methods were made by selecting and adopting relevant and standard questionnaires.

## 4.8. Data quality assurance

Data quality assurance was in place during questionnaire designing, data collection and data entry. The quantitative questionnaire was objective based, logically sequenced, non-leading and pretested. The data collectors and supervisors were provided with intensive training on the objective of the study and on how to interview the participants and fill the questionnaire. The collected data were checked for completeness, accuracy, clarity and consistency by the supervisor and principal investigator. Daily strict follow up and checking of the data was done in order to manage any problem encountered. Timely feedback was given for the data collectors and the supervisor.

## 4.9. Data processing and analysis

Data were coded, entered and cleaned (by running frequencies, list and sort) by principal investigator using Epi Info version 3.5.1 and imported to SPSS version 16.1 for analysis. The data were summarized in percentages, tables and graphs. Crude and adjusted odds ratios with their 95% confidence intervals (CIs) using logistic regression analysis were computed to identify factors associated with the outcome variable of interest, ART adherence. In multiple logistic regression analysis only variables that had a p-value less than 0.3 were use to avoid an excessive number of variables and unstable estimates in the subsequent model (40). P-value less than 0.05 were considered to see the statistical significance.

For the qualitative data narrative analysis was used based on the recording and field notes taken during the interview. The data was transcribed and translated word-by-word for analysis. The qualitative finding was triangulated with the quantitative findings.

## 4.10. Variables

### 4.10.1. Dependent variable

- HIV status disclosure
- HAART adherence

### 4.10.2. Independent variables

- Socio-demographic variables such as age, occupation, marital status, educational level, monthly income
- Discussion between couples on HIV related issues
- Duration since tested and since ARV treatment started
- Knowledge of partner HIV status
- Disclosure of HIV positive status

## 4.11. Operational definitions

- **Non disclosure**: - making secret one‟s own HIV diagnostic test result (4).
- **HIV positive status disclosure**: - sharing one‟s own HIV positive diagnostic test result to the partners, family members, friends, etc (23).
- **Adherence**: Not missing /skipping a dose of ART medication within a week.
- **Non adherence**: Missing/skipping at least one dose of ART medication within a week.

## 4.12. Ethical considerations

The study was undergoing by obtaining ethical clearance from Addis Ababa University, School of public health, Ethical committee. An official letter from the School of Public Health at Addis Ababa University was written to Ambo Hospital to obtain permission to carry out the study at the ART clinic of the hospital. The aim, purpose, benefit and method of the study were clearly explained to the study participants.

All study participants were informed that, their response was kept confidential; and only health workers who were currently working in the ART clinic collected the data (Annex I). Informed consent was obtained for each study subject before the interview. Interview was conducted in a way that did not violate their privacy and confidentiality of information (Annex II). Any identifier of the study participants was not recorded in the questionnaire. The respondents were informed that they had the right to discontinue the study at any time, and their non-involvement in the study was explained as it has no effect on the clinical care they receive from the hospital.

## 4.13. Dissemination of results

The study result will be submitted to Addis Ababa University College of Health Sciences as a partial fulfillment of the requirements for Master‟s Degree in Public Health. It will also be disseminated to Oromia Regional Health Bureau, West Shewa Zone health office and Ambo Hospital. Attempts will be made to publish the study finding in a peer-reviewed journal and present in scientific conference.

# 5. Results

## 5.1. Socio- demographic characteristics of the study participants

A total of 420 PLHIV attending ART clinic at Ambo Hospital participated in the study, giving a response rate of 99.5%. The age of the participants ranged from 18 to 80 years with a mean (SD) of 36.3 (9.1) years. Of the total participants, 61.9% were female. Majority 332 (79.0%) of respondents were from urban area. About 88% of the study participants were from Oromo ethnic group. More than half (63.3%) of the respondent were Orthodox Christians. One hundred and eighty two (43.3%) have attended primary school, (69.5%) were unemployed, 240 (57.8%) were married and the median monthly income of the study participant was 300 Ethiopian Birr (Table 1).

At the time of the survey, the mean duration of ART was 37.9±23.9 months. The duration of diagnosis for the study subjects ranged from 3 to 216 months. Fifty (11.9%) of the study participants had known their HIV status for less than a year but the rest 370 (88.1%) knew their positivity and lived with the virus for more than a year.

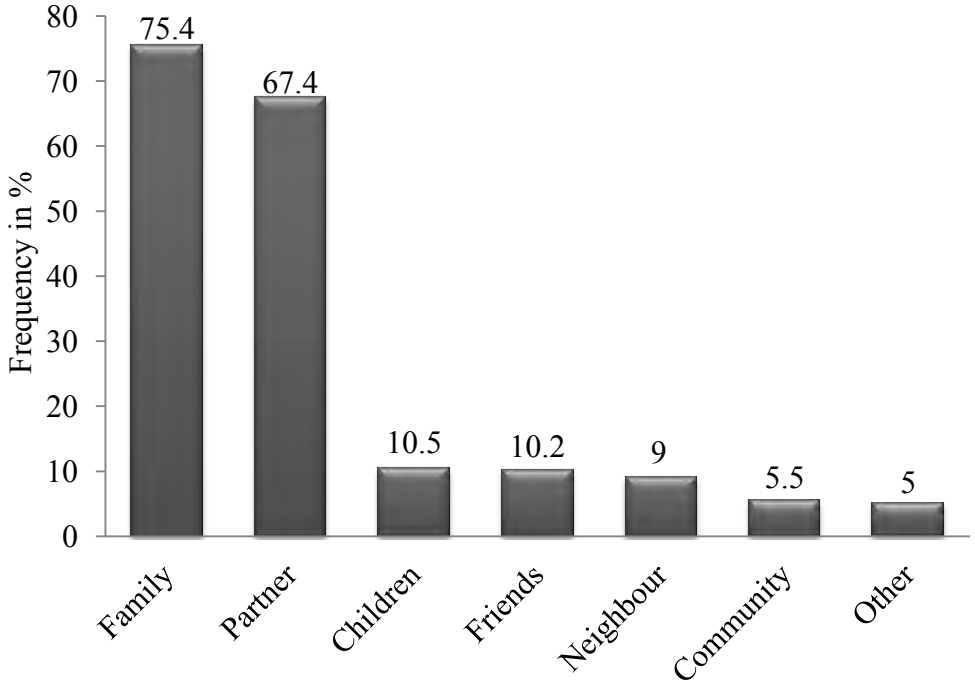
Table 1: Socio-demographic characteristics of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012(n=420)

| Variables | Frequency | Percent |
|---|---|---|
| **Residence** | | |
| Urban | 332 | 79 |
| Rural | 88 | 21 |
| **Age(in years)** | | |
| 15-19 | 3 | 0.7 |
| 20-29 | 94 | 22.4 |
| 30-39 | 182 | 43.3 |
| 40-49 | 100 | 23.8 |
| >50 | 41 | 9.8 |
| **Sex** | | |
| Male | 160 | 38.1 |
| Female | 260 | 61.9 |
| **Ethnicity** | | |
| Oromo | 371 | 88.3 |
| Amhara | 38 | 9 |
| Other* | 11 | 2.6 |
| **Religion** | | |
| Orthodox Christian | 266 | 63.3 |
| Protestant Christian | 147 | 35 |
| Other** | 7 | 1.7 |
| **Educational status** | | |
| Illiterate | 122 | 29.05 |
| Primary | 182 | 43.3 |
| Secondary | 80 | 19.05 |
| Above secondary | 36 | 8.6 |
| **Occupation** | | |
| Employed | 85 | 20.2 |
| Unemployed | 292 | 69.5 |
| Day laborer | 43 | 10.2 |
| **Current marital status** | | |
| Single | 15 | 3.6 |
| Married | 240 | 57.8 |
| Divorced | 83 | 20 |
| Widowed | 77 | 18.6 |
| Cohabited | 5 | 1.2 |
| **Monthly own income (in ETH. Birr)** | | |
| <250 | 135 | 36.9 |
| 251-500 | 126 | 34.4 |
| >500 | 105 | 28.7 |

*Tigre & Gurage **Musilm, Catholic & Joba

## 5.2. Rate of HIV positive status disclosure

Three hundred and sixty two (86.2%) of the respondents disclosed their HIV positive status at least to one person and 286 (84.9%) disclosed to their sexual partner but the rest 51 (15.1%) did not disclose their status to their sexual partner. However, for 58 (13.8%) of the respondent disclosure of HIV status was a difficult issue to anyone. The rate of disclosure was achieved over a period of time. Three hundred four (84%) of the participants disclosed immediately, 5.9% between 1 month and 6 month, 10.5% after 6 months of diagnosis. As shown in Figure 4, the first individual to whom the respondents disclosed their HIV result was mainly to family members 273 (75.4%), followed by disclosure to partners (67.4%).



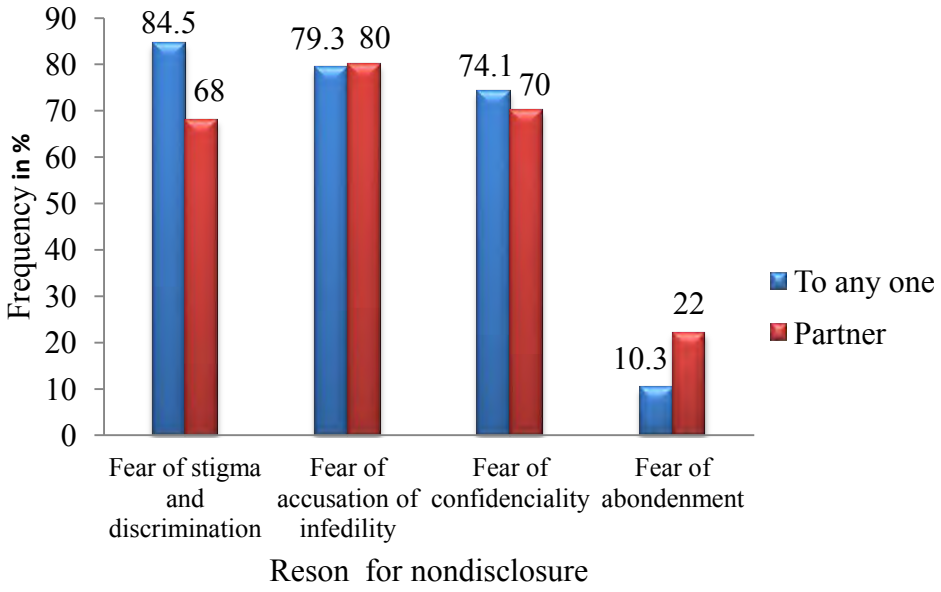

*Percentages do not add up 100% due to multiple responses

Figure 4: First time HIV positive status disclosures of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

## 5.3. Reasons for non disclosure and outcomes of disclosure

### 5.3.1. Reasons for non-disclosure

Reasons for non-disclosure among those respondents who did not disclose their test results to anyone (n =58) included fear of stigma and discrimination 49 (84.5%), fear of accusation of infidelity 46 (79.3%), fear of confidentiality 43 (74.1%) and fear of abandonment 6 (10.3%). Whereas the commons reason for non disclosure of their sero status to their partner (n=51) were fear of accusation of infidelity 40 (80%), fear of confidentiality 35 (70%), fear of stigma 34 (68%) and fear of abandonment 11 (22%) (Figure 5).




*Percentages do not add up 100% due to multiple responses

Figure 5: Reason of non disclosure of HIV status to anyone and to their partner of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

### 5.3.2. Outcomes of HIV status disclosure to sexual partners

Following disclosure of the HIV test result to their partners, the reaction was positive for 239 (83.6%) study participants and negative for 47 (16.4%) respondents. Positive outcomes following HIV positive sero status disclosure to sexual partner as reported by the respondents were receiving kindness 198 (82.8%), acceptance 180 (75.3%), increased support 158 (66.1%) and decision for being tested for HIV 100 (41.8%).

The negative outcome commonly encountered following sero status disclosure were anger 37 (78.7%), blame 34 (72.3%), stigma 24 (51.1%), violence 16 (34%), abandonment 14 (29.8%), and breakup of the relationship 11 (23.4%) (Table 2).

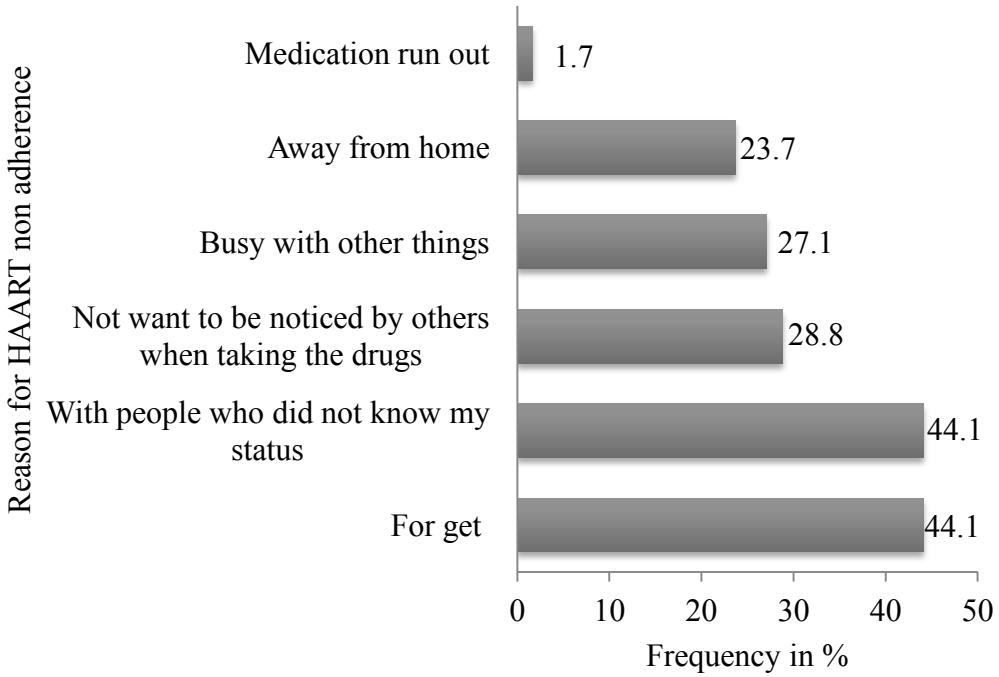
Table 2: Outcomes of HIV status disclosure of PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012 (n=286).

| Outcomes of disclosure | Frequency | Percent |
|---|---|---|
| **Positive outcomes(n=239)** | | |
| Receiving kindness | 198 | 82.8 |
| Acceptance | 180 | 75.3 |
| Increased support | 158 | 66.1 |
| Decide to be tested for HIV | 100 | 41.8 |
| **Negative out comes(n=47)** | | |
| Anger | 37 | 78.7 |
| Blame | 34 | 72.3 |
| Stigma | 24 | 51.1 |
| Violence | 16 | 34 |
| Abandonment | 14 | 29.8 |
| Break up in the relationship | 11 | 23.4 |

*Percentages do not add up 100% due to multiple responses

## 5.4. Rates of adherence, dose missed and reasons for non adherence

Majority 361 (86%) of the study participants were adherent and the rest 59 (14%) were non adherent based on self report of missed doses (dose adherence) in a one-week recall (Table 4). Of non adherent 47.5% of the study participant missed three doses and above, 32.2% of the respondents missed one dose and the rest 20.3% of the respondents missed two doses. The most frequent reasons for missed doses (more than one reason might be possible for a patient) were simply forgetting 26 (44.1%), being with people who did not know my status 26 (44.1%), being not want to be noticed by others when taking the drugs 17 (28.8), and being away from home 14 (23.7%), being busy with other things 16 (27.1%) and running out of medication1 (1.7%) (Figure 6).




*Percentages do not add up 100% due to multiple responses

Figure 6: Reasons for non adherence of study subjects attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

## 5.5. Relationship between HIV status disclosure and ART adherence

The prevalence of HAART adherence among PLHIV who disclosed their sero status was 88.7% (95% CI: 84.95-91.75) where as the prevalence of HAART adherence among PLHIV who didn‟t disclose their status was 69% (95% CI: 55.46-80.46).

Majority of the study participants 374 (89%) reported that HIV status disclosure and ART adherence were interrelated. From FGD findings *a35years female discussant stated "For how long I took the medication without telling my status?" for example the gust my come in to my house, and also I may away from home to visit other so if they did not knew my status how can I took my medication?"* Three hundred and seventy six (89.5%) of the participants stated that HIV status disclosure facilitates initiation and adherence to ART medication.

Of 376 (89.5%) respondents who said that disclosure facilitates ART adherence; disclosure promotes social support 309 (82.2%), disclosure facilitates adherence by avoiding fear of stigma and discrimination 271 (72.1%) and the rest 125 (33.2%) respondents reported that disclosure provides psychological support which in turn facilitates ART adherence.

Three hundred and eighty four (91.4%) of the respondents reported that disclosing owns HIV status to partners, family members and others is important. The importance of disclosure as reported by the respondents were; provides social support 296 (77.1%), promotes ART adherence 290 (75.5%), getting relief by sharing secret 220 (57.3%), avoid non adherence 168 (43.8%) and encourage initiation of ART 118 (30.7%).

Only 27 (6.4%) of study participants reported disclosure of owns sero status to somebody else promote non adherence to ART medication. Of which 22 (81.5%) of the respondents were report opposition from the person to whom I disclose my status regarding to ART medication and the rest 12 (44.4%) were reports discontinuation of the medication due to partner/family objection. Three hundred and twenty two (76.7%) of the study participants reported non disclosure affects ART adherence. The qualitative findings also supplement this findings.*A45 year's female discussant said: "Before I disclose my status I discontinue the medication for at least four month because I afraid to take the medication in front of other people but after I disclose I took medication correctly without missing any pills since my children remind me."*

Majority 373 (88.8%) of the study participants reported adherence encourage disclosure. Only 46 (11%) of the respondent were report initiation of ART medication delay/impede disclosure but the rest374 (89%) were not. Most of the participants 373 (88.8%) stated initiation of ART medication facilitates disclosure. As shown in Figure 7, the beginning of ART medication facilitated disclosure status through notification, side and therapeutic effects.

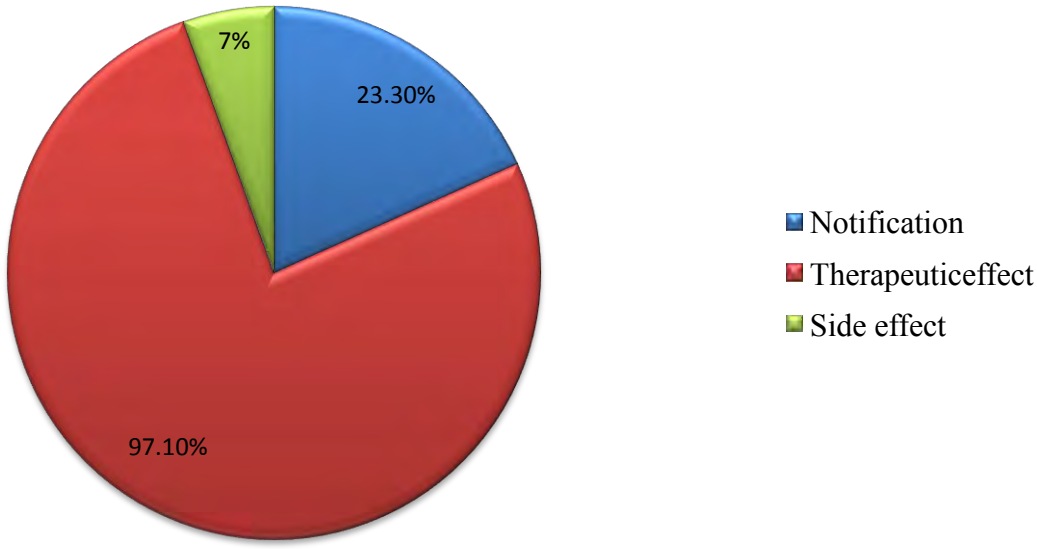



Figure 7: Mechanisms by which ART initiation facilitates HIV status disclosure as reported by PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

## 5.6. Factors associated with HIV positive status disclosure to sexual partner

Logistic regression for HIV positive status disclosure to sexual partner and other variables was performed. As shown in Table 3 in bivarate logistic regression analysis married in marital status COR= 5.25,95% CI: 2.90-9.49), relationships before test (COR=0.45, 95%CI:0.26-0.77), prior discussion about HIV testing (COR=0.37, 95% CI:0.16-0.85), knowledge of partner HIV status (COR=0.10, 95% CI:0.06-0.18), duration of HIV test (COR=7.02, 95% CI:3.70-13.31) and duration of being on ART (COR =3.87, 95% CI: 2.21- 6.77), ART initiation (COR=0.22,95% CI: 0.11-0.42) were significant predictors of HIV status disclosure to sexual partner.

To avoid an excessive number of variables and unstable estimates in the subsequent model, only variables that reached a p-value less than 0.3 were kept in the multiple logistic regression analysis (40). In multiple logistic regression analysis married in marital status (AOR=2.64, 95% CI: 1.04-6.66), ART initiation (AOR=0.18, 95%CI: 0.08-0.43), knowledge of partner HIV status (AOR=0.23, 95% CI: 0.10-0.55) and knowing their HIV status for more than a year (AOR=5.02, 95% CI: 1.63-15.44) were significantly associated with HIV status disclosure to their partner (Table 3).

Married respondents were 2.6 times more likely to disclose their HIV positive status to their sexual partner than single participants (AOR=2.64, 95% CI: 1.04-6.66). Respondents who reported ART initiation did not facilitate HIV status disclosure were 82% less likely to disclose their sero status than those reported ART initiation facilitates disclosure (AOR=0.18, 95%CI: 0.08-0.43).Knowledge of partner HIV status and knowing owns sero positivity for more than one year also significantly associated with HIV positive status disclosure. Participants who did not know the HIV status of their partners were 77 % less likely to disclose their HIV positive status in comparison with those who know their partner's status (AOR=0.23, 95% CI: 0.10-0.55). Individuals who had known their HIV status for more than one year were 5 times more likely to disclose their HIV positive status to their partner (AOR=5.02, 95% CI: 1.63-15.44).

Participant who had been on ART for more than or equal to one year, had prior discussion and smooth relationship with their partner before HIV test were significantly more likely to disclose their HIV positive status to their partner in bivariate analysis but this did not remain significant when controlled for other variables (Table 3).

Table 3: Determinants of HIV positive status disclosure to sexual partner among PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

| Variables | HIV Status Disclosure | | Crude OR (95%CI) | AOR (95%CI)** |
|---|---|---|---|---|
| | Yes No (%) | No No (%) | | |
| **Marital status** | | | | |
| Single | 125(71.4) | 50(28.6) | 1.00 | 1.00 |
| Married | 223 (92.9) | 17(7.1) | **5.25(2.90-9.49)*** | **2.64(1.04-6.66)*** |
| **ART initiation** | | | | |
| Yes | 325((87.1) | 48(12.9) | 1.00 | 1.00 |
| No | 28(59.6) | 19(40.4) | **0.22(0.11-0.42)*** | **0.18(0.08-0.43)*** |
| **Relationship before test** | | | | |
| Smooth relation | 260(87.2) | 38(12.8) | **1.00** | 1.00 |
| With disagreement | 90(75.6) | 29(24.4) | **0.45(0.26-0.77)*** | 0.92(0.46-1.82) |
| **Discuss with partner about HIV issues before test** | | | | |
| Yes | 80(92.0) | 7(8.0) | **1.00** | 1.00 |
| No | 251(81.0) | 59(19.0) | **0.37(0.16-0.85)*** | 0.66(0.26-1.69) |
| **Knowledge of Partner status** | | | | |
| Yes | 265(92.7) | 21(7.3) | 1.00 | 1.00 |
| No | 57(55.9) | 45(44.1) | **0.10(0.06-0.18)*** | **0.23(0.10-0.55)*** |
| **Duration of HIV test** | | | | |
| <12month | 26(52.0) | 24(48.0) | 1.00 | 1.00 |
| >12month | 327(88.4) | 43(11.6) | **7.02(3.70-13.31)*** | **5.02(1.63-15.44)*** |
| **Duration since ART started** | | | | |
| <12month | 58(66.7) | 29(33.3) | 1.00 | 1.00 |
| >12month | 294(88.6) | 38(11.4) | **3.87(2.21-6.77)*** | 1.03(0.39-2.76) |

* P-value<0.05 statistically significant

** Adjusted for marital status, ART initiation, relationship before test, discuss with partner about HIV issues before test, duration since ART started, duration of HIV test, knowledge of partner status.

## 5.7. Association of HIV positive status disclosure with HAART adherence

In bivariate logistic regression analysis disclosure of HIV status to at least one person (COR=3.52, 95% CI: 1.85-6.71), being on ART for more than a year (COR=2.24, 95% CI: 1.23-4.09), employed in occupation (COR=4.24, 95% CI: 1.32-13.57) and literate in educational status (COR=2.79, 95% CI: 1.59-4.89) were significantly associated with HAART adherence (Table 4).

In multiple logistic regression analysis only educational status and disclosure of HIV status to at least one person were significantly associated with HAART adherence. Respondent who disclose their sero status to at least one person were 3.5 times more likely to HAART adherence than those respondent who did not disclose their sero status.(AOR=3.52,95% CI:1.68-7.37). Educational status of the respondent was also positively associated with HAART adherence. Those study participants who attend formal education or literate respondent were 2.1 times more likely to be adherent than those who were illiterate or could read and write (AOR= 2.13, 95% CI: 1.08-4.22). However the association found between HAART adherences and being on ART medication for more or equal to 1year and employed in occupation was disappear after adjusted for other variables (Table 4).

Table 4: Role of HIV positive status disclosure on ART adherence as reported by PLHIV attending ART clinic in Ambo Hospital, West Shewa Zone, Oromia, 2012

| Variables | Adherence to HAART | | COR(95%CI) | AOR(95%CI)** |
|---|---|---|---|---|
| | Adherent | Non adherent | | |
| **Age** | | | | |
| <25 | 32(78.0) | 9(22.0) | 0.47(0.11-1.01) | 0.69(0.23-2.08) |
| 26-35 | 153(85.0) | 27(15.0) | 0.74 (0.41-1.35) | 0.76(0.39-4.49) |
| >36 | 176(88.4) | 23(11.6) | 1.00 | 1.00 |
| **Educational status** | | | | |
| Illiterate | 93(76.2) | 29(23.8) | 1.00 | 1.00 |
| Literate | 268(89.9) | 30(10.1) | **2.79(1.59-4.89)*** | **2.13(1.08-4.22)*** |
| **Occupation** | | | | |
| Day laborer | 34(79.1) | 9(20.9) | 1.00 | 1.00 |
| Un employed | 247(84.6) | 45(15.4) | 1.45 (0.65-3.24) | 0.89(0.34-2.34) |
| Employed | 80(94.1) | 5(5.9) | **4.24(1.32-13.57)*** | 2.45(0.62-9.62) |
| **Income** | | | | |
| <250 | 115(85.2) | 20(14.8) | 0.61(0.27-1.37) | 1.24(0.48-3.11) |
| 251-500 | 105(83.3) | 21(16.7) | 0.53(0.24-1.17) | 0.77(0.32-1.87) |
| >500 | 95(90.5) | 10(9.5) | 1.00 | 1.00 |
| **Month on ART** | | | | |
| <1year | 67(77.0) | 20(23.0) | 1.00 | 1.00 |
| >1year | 293(88.3) | 39(11.7) | **2.24 (1.23-4.09)*** | 1.74(0.87-3.51) |
| **Disclosure of HIV status at least to one person** | | | | |
| No | 40(69.0) | 18(31.0) | 1.00 | 1.00 |
| Yes | 321(88.7) | 41(11.3) | **3.52 (1.85-6.71)*** | **3.52(1.68-7.37)*** |

* P-value<0.05 statistically significant

** Adjusted for age, educational status, income, month on ART and disclose your status at least to one person

## 5.8. Findings of focus group discussion

A total of 24 participants were involved in 4 FGDs (two for each sex). The results of the FGDs are summarized as follows.

### 5.8.1 Factors influencing HIV status disclosure

The FGD participants identified many factors that influenced HIV status disclosure among men and women. Of which fears of stigma and discrimination, fear of blame and unfaithfulness were prominent barriers of disclosure.

*A45 year's old male participant said "If you disclose your status; people took you as unfaithful person, and also they point their finger at you so you faced a great stigma and discrimination, this makes you to hidden your status to avoid those things. For example in our village there was a man who died of suicidal attempt after he lost his wife due to disclosure of his status publically."*

### 5.8.2. Outcomes of HIV status disclosure to sexual partner

For majority of the respondent‟s partner reactions following disclosure of their status was positive (acceptance, reassurance, supportive and care); however for some respondent their partner reaction was negative like anger, blame, break up of their relationship/marriage dissolution and unfaithfulness.

*A33 year old female participant said "My partner anger at me while I told him my status and our relationships become loosen after he knows my status"*

*Another female discussant said "My partner shouts at me and lives me alone and goes away while I am telling him my status "disclosure of my status is the reason for breakup of my marriage."*

### 5.8.3. Disclosure facilitates HAART adherence

Almost all participants agree with that of disclosure and HAART adherence had interrelated. Most of the participant reported our family/relatives remind me to take the medication on time.

*A36 year's woman said……"Disclosure was very important! For example, I freely took my medication everywhere even in the street if the time was up I want to someone home ask a glass of water and took it; in case if they ask me I told them I am taking ART drug so the people accept and support me. Shortly… disclosure is free from stress and becoming healthy; you know that… ART medication itself did not allow stressful condition to work properly so, to make your medication work properly and healthy you should have to free from any stress."*

*A45 year's female discussant: "Before I disclose my status I discontinue the medication for at least four month because I afraid to take the medication in front of other people but after I disclose I took medication correctly without missing any pills since my children remind me."*

*Another female discussant "For how long I took the medication without telling my status?" for example the gust my come in to my house, and also I may away from home to visit other so if they did not knew my status how can I took my medication?"*

## 6. Discussion

This study focuses on determining the relationship between HIV positive status disclosure and HAART adherence in addition to identifying rate, barriers of disclosure and level of HAART adherence among PLHIV attending ART clinic of Ambo Hospital in West Showa Zone. The disclosure rate in this study was comparable with study done in Africa (20, 23). The study revealed 86.2 % of the respondents disclose their status to at least one person while 84.9 % disclose their status to their sexual partner.

In study conducted in South Africa (20) it was found that 81% of the subjects had disclosed their sero status to at least one person. However the study done in Nigeria, Jimma and Hawassa found higher rate of disclosure than the finding of this study; 97.1%, 94.5% and 92.2% of the study subjects were discloses their status to at least one person respectively (19,22,23). The reason for lower disclosure rate found in this study may attributed to the study subjects; in the current study the study subjects were PLHIV who were currently on ART while the pervious study includes all pre and ART PLHIV.

Concerning disclosure to one's partner, this study revealed that most participants had disclosed their HIV positive status to their sexual partner: only 15.1% of the participant interviewed in this study were did not disclose their status to their partner. The finding was similar with the study done in Hawassa (23) only 14.3% of the respondent didn‟t disclose their status to their partner but higher than the study done in Jimma (22) 9.2% of the respondents didn‟t disclose their status to sexual partner. The main reasons for non disclosure reported in this study were fear of stigma and discrimination, accusation of infidelity, confidentiality and abandonment. This finding was similar with study done in Uganda, Malawi and Ethiopia (7, 9, 22, 23).

Consistent with other studies (5,8,19,22) the outcomes of HIV status disclosure to their partner were positive for the majority of the respondents such as kindness, acceptance, and increased support and decide to be tested for HIV whereas only for 16.4 % of the participant their partner reaction was negative such as anger, blame, stigma, violence and beak up of relationships/marriage.

In contrast with many other studies (5, 6) this study found break up of relationships/marriage for 11(23.4%) study subjects who experience negative reaction following HIV status disclosure to their partner. However this finding were similar with study done in Hawassa for 14.6% of the women disclosure end up in breakup of marriage (23).

Similar to other findings (22) only 20.1% and 73.7% of the respondents reported that they discuss on HIV and VCT issues prior to the study and knew their partners HIV status respectively. The results of this study are in agreement with many other studies (22, 23) in that knowing a partner's HIV status was found to be associated with the disclosure of one's own status to a partner.

Consistent with other studies (5, 22) participant who had known their HIV status for more than one year was significantly more likely to disclose HIV positive status to their partner. This could be explained by peer counselors were providing repeated counseling and information about HIV status disclosure and treatment adherence during their follow up period. Unlike other studies (23, 19) no statistical association was observed between occupations, age, own income, duration of treatment, education and HIV status disclosure.

In this study based on one-week recall self report of missed doses the adherence and non adherence rate was 86% and 14% respectively. The adherence rate found in this study was comparable with the study conducted in Brazil, Nigeria and Uganda (24, 26, 33) were found self reported adherence rate of 82%, 70.8% and 85% respectively. The study done in different part of Ethiopia (27, 29) also found almost similar result with this study. Concerning the non adherence rate what we found was similar with the study done in North West Ethiopia [30] and study conducted in Nigeria (31) which found non adherence rate 17.3% and 21.7% respectively.

The most common reason cited for non adherence were simply forgetting ,being with people who didn‟t know my status and being not want to be noticed by others when taking the drugs(non disclosure) ,being away from home and being busy with other things .The same reason has been mentioned in other studies (24, 31,34,38).

Similar with this study non disclosure was main reason for non adherence; studies conducted in New York, Nigeria, south western Uganda, Thailand and western Uganda (16, 31, 33, 34, 38) also support this finding. Study done in Wolaita and Gamo Gofa Zones (32) also found non disclosure, simply forget and away from home were the main reason for treatment non adherence. Studies done in south west Ethiopia (27) and Yirgalem Hospital (28) were reported simply forget, busy with other thing and away from home as the main reason of non adherence.

The multivariate logistic regression analyses showed that HIV status disclosure to at least one person had statistically significant association with treatment adherence. This is in agreement with the findings of other studies conducted in Nigeria, south western Uganda, Thailand and western Uganda (31, 33, 34,38). Efforts to improve the level of adherence should be emphasis on HIV status disclosure to anybody which reduced the fear of stigma and discrimination and increases adherence rate. In this study found no significant association in the demographic characteristics (sex, age, income, employment, marital status, and number of years since diagnosis and moth on ART) when we examined the relationship with forgetting ART medications in the past seven days, with the exception of educational level.

Similar with study done in Wolaita and Gamo Gofa Zones south Ethiopia (32) literacy had significant association with treatment adherence in our study. Participant who attend formal education were 2.1 times more likely to treatment adherence than their counter part. Study conducted in Nigeria (31) found low educational level was significant predictors of non adherence. Education may impact on adherence in several ways including facilitating communication with health workers, increasing retention of information provided by health workers and peer counselors and thereby enhancing implementation of the recommendations regarding intake of the antiretroviral drugs.

## 7. Strengths of the Study

- Pre-tested and standardized questionnaire used for data collection
- Qualitative methods supplement quantitative
- SRS methods was used to select the study participants

## 8. Limitations of the study

- The finding may not be inferences to the general population since it was facility based study.
- The data in this study were cross-sectional, with limitations in inferring causation from the associations found.
- Since health workers who had been working in the ART clinic were collect the data, the likely hood of Social desirability bias was there.
- There may be recall bias of missed doses of the last seven days which over or under estimate the non adherence rate.
- Self reports adherence assessment methods were used to assess ART adherence rate which might over estimate the adherence rate.

## 9. Conclusions

- Majority of PLHIV disclose their sero status to at least one person. Knowledge of partner HIV status, marital status and ART initiation were significantly associated with HIV positive status disclosure to sexual partner.
- The major barrier reported for not disclosing HIV positive result to sexual partners and to at least one person were fear of stigma and discrimination, accusation of infidelity and confidentiality.
- Prevalence of HAART adherence in this study was high. A better HAART adherence was observed among PLHIV who were disclose their sero status to at least one person and attended formal education.
- The most frequently reported reasons for non adherence were simply forgot ,with people who didn‟t know my status and did not want to be noticed by others when taking the drugs .

## 10. Recommendations

- Intervention programs to improve ART adherence should consider both the potential benefits and risks associated with HIV disclosure and assist PLHIV to prepare for HIV disclosure and reduce potential negative impacts that come with it.
- Patients‟ educational background should not be neglected in the course of the whole part of antiretroviral therapy and more exercise with a lot repetition might be necessary for illiterates.
- Health professionals working in ART clinic should support patients those who are busy and forget to take the drugs and encourage them to take the drugs with them when they are away from home.

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## Annexes

## Annex I. Study information sheet

This sheet is to be read for the participants of the study.

Good morning/afternoon, my name is_____ and I am one of the data collectors for the study being conducted by Addis Ababa University, College of Health Sciences, School of Public Health on HIV positive status disclosure and HAART adherence among PLHA in Ambo Zonal Hospital. You are selected scientifically to be participant of this study if you give me consent after you have understood the following information sheet:

**Title of the study:** across sectional study on HIV positive status disclosure and HAART adherence among PLWHA in Ambo Hospital, West Shewa Zone, Oromia Region, Ethiopia

**Back ground of the study:** Disclosure of HIV positive sero-status and adherence to ART medication is important for the prevention and control of HIV/AIDS. Little is known about the relationship between HIV positive status disclosure and HAART adherence in developing country including Ethiopia. Thus, this study examined the relationship between HIV status disclosure and adherence to HAART.

**Objective of the study:** To assess the relationship between HIV positive status disclosure and HAART adherence among PLHIV attending ART clinic of Ambo Hospital in West Shewa Zone.

**Benefit of the study:-**

The participant will not get any direct benefit for being participant

The result can be used as a baseline for further studies that can be done in this town.

The result will be used to design prevention and control measures of HIV/AIDS.

The result will be disseminated to the West Showa Zone Health Office.

**Harm of the study:** the study has no any harm except that participant will spend up to 20-25minutes in the interview.

**Rights of the participant: -**participation has full right

Not participate

The participant can stop participating in the study at any time

The participant can skip question which she/he does not want to respond

During the interview, the participant can ask questions which are not clear

**Confidentiality: -** the secrecy of any information forwarded will be maintained

## Annex II. Consent form

I, the selected participant, heard the information in the study information sheet and understood the purpose, benefit, and what is required from me and what happen to me if I take part in the study. I understood that all the information regarding me, like name and all answers given by me must not be transferred to the third party. I also understand that I can decide whether or not to take part in the study or even withdraw from the study at any time.

The participant Sign_____

Questionnaire identification number _____

Name of the Interviewer _____Signature_____date _____

Name of the supervisor _____Signature _____date _____

**Address of the investigator**:

Mobile = 09 10 44 51 52

Email = shewayeftm@gmail.com

## Annex III. English questionnaires

### Section I: Socio- demographic characteristics

| S.No | Questions | Coding Categories | Skip |
|---|---|---|---|
| **101** | Residence | 1. Urban<br>**2.** Rural | |
| **102** | Age in years( enter number) | _____years | |
| **103** | Sex of respondent | 1. Male<br>**2.** Female | |
| **104** | Ethnic group | 1. Oromo<br>2. Amhara<br>3. Other, specify_____ | |
| **105** | Religion | 1. Orthodox<br>2. Protestant<br>3. Other, specify_____ | |
| **106** | What is your highest educational level? | 1. Illiterate<br>2. Read and write<br>3. 1-8<br>4. 9-12<br>5. Technical and vocation<br>6. Diploma and above | |
| **107** | Occupation | 1. Farmer<br>2. Merchant<br>3. Employed<br>4. Unemployed<br>5. Other, specify_____ | |
| **108** | What is your current marital status? | 1. Never married(single)<br>2. Married<br>3. Divorced<br>4. Widowed<br>**5.** Other_____ | |
| **109** | Your own monthly income | _____birr. | |

| | | | |
|---|---|---|---|
| **110** | Your sexual partner monthly income | _____birr. | |
| **111** | History of active substance use | 1. Yes<br>2. No | If No Q 201 |
| **112** | If **yes** to Question **111**, which substance do you use? | **More than one answer is possible**<br>**1. Yes 2. No**<br>1. Alcohol 1 2<br>2. Cigarette 1 2<br>3. Khat 1 2<br>4. Shisha 1 2<br>5. Other, specify_____ | |

## Section II: HIV sero status disclosure

| QID | Question | Coding Categories | Skip to |
|---|---|---|---|
| **201** | How long since you have known your HIV status? | _____month | |
| **202** | Have you disclosed your HIV status to any one? | 1. Yes<br>2. No | If No Q205 |
| **203** | To whom you have disclosed your status? | **More than one answer is possible**<br>1. Partner<br>2. Family members<br>3. Relatives<br>4. Other, specify_____ | |
| **204** | If you disclosed your HIV test result, when did you disclose it after you knew your status? | 1. Immediately after test<br>2. After _____month<br>3. After _____year<br>4. I do not remember | |

| | | | |
|---|---|---|---|
| **205** | Why you didn‟t disclose your status? | 1.Fear of stigma and discrimination<br>2.Fear of accusation of infidelity<br>3. Fear of confidentiality<br>4. Fear of abundant<br>5.Other_____ | |

**Section III- HIV Sero-status disclosure barriers and out comes**

| QID | Question | Coding Categories | Skip to |
|---|---|---|---|
| **301** | Your relation with your partner before test result of HIV is | 1. Smooth relation<br>2. With disagreement<br>3. Other specify_____ | |
| **302** | Did you discuss about HIV/AIDS issues and VCT with your partner before you tested for HIV? | 1. Yes<br>2. No | |
| **303** | Do you know your partner HIV status? | 1. Yes<br>2. No | If No Q305 |
| **304** | What is his/her HIV status? | 1. HIV positive<br>2. HIV negative | |
| **305** | Have you disclosed your HIV status to your partner? | 1. Yes<br>2. No | If No Q309 |
| **306** | What was the reaction from your partner? | 1.Positive outcome<br>2.Negative outcome | |
| **307** | **Positive outcome** | | |
| **1** | Receiving kindness | Yes 1 No 2 | |
| **2** | Acceptance | 1 2 | |
| **3** | Increased support | 1 2 | |
| **4** | Decide to be tested for HIV | 1 2 | |
| **5** | Specify other_____ | | |

| | | | |
|---|---|---|---|
| **308** | **Negative outcome** | | |
| **1** | Abandonment | Yes No<br>1 2 | |
| **2** | Anger | 1 2 | |
| **3** | Blame | 1 2 | |
| **4** | Stigma | 1 2 | |
| **5** | Violence | 1 2 | |
| **6** | Break up in the relationship | 1 2 | |
| **309** | Why did not disclose your HIV status to your partner? | 1. Fear of abandonment<br>2. Fear of confidentiality<br>3. Fear of accusation of infidelity<br>4. Other specify_____ | |
| **310** | Have you had sexual intercourse with your partner since you Knew your HIV status? | 1.Yes<br>2.No | If No Q 401 |
| **311** | Did you use condom during sexual intercourse? | 1. Yes<br>2. No | If No Q 312 |
| **312** | What was the reason for not using a condom during sexual inter course? | 1. He/she is living with HIV<br>2. It reduce my sexual pleasure<br>3.In order to not suspect me<br>4.Lack of knowledge about condom<br>5. Unavailability of condom<br>6. Partner objection<br>7.Other specify_____ | |

## Section IV- Assessment of ART adherence

| QID | Question | Coding Categories | Skip to |
|---|---|---|---|
| **401** | How long you have been on ART treatment | _____ months | |
| **402** | Frequency of ART taking | 1. Once/day 3. Thrice/day<br>2. Twice/day | |
| **403** | Number of pills you take per day | _____ | |
| **404** | Does the treatment schedule fits your daily routine activities | 1.Yes 2.No | |
| **405** | Do you ever forget taking your ART in the past seven days? | 1. Yes<br>2. No | If No Q501 |
| **406** | If **yes** for the above question how many doses you missed? | 1. One<br>2. Two<br>**3.** Three and above | |
| **II. Reasons for skipping/missing the doses (More than on answers is possible)** | | | |
| **407** | **Reasons for skipping doses** | | |
| | | | |
| **1** | With people who didn"t know you were HIV+ | | |
| **2** | I did not want other to notice me I am taking medicine | | |
| **3** | I was too busy with other things | | |
| **4** | Simply I forgot it | | |
| **5** | I was away from home | | |
| **6** | Other_____ | | |

## Section V- Relationship between disclosure and ART adherence

| QID | Question | Coding Categories | Skip to |
|---|---|---|---|
| 501 | HIV status disclosure and ART adherence interrelated each other | 1. yes<br>2. No | |

| | | | |
|---|---|---|---|
| 502 | HIV status disclosure facilitates initiation and adherence to ART medication | 1. yes<br>2. No | If No Q 504 |
| 503 | How disclosure facilitates ART adherence? | 1. Promote social support<br>2. Avoid fear of stigma and discrimination<br>3.Provides psychological support<br>4. Specify other _____ | |
| 504 | Do you think disclosing your status to your partner, family members & others is important? | 1. Yes<br>2. No | If No Q506 |
| 505 | What is the importance of disclosing your status? | 1. Getting relief by sharing secret<br>2. Provides social support<br>3.Encourage initiation of ART<br>4. Promote ART adherence<br>5. Avoid poor/non adherence<br>6. Specify other _____ | |
| 506 | Disclosure of owns sero status to somebody else promote non adherence to ART medication? | 1. Yes<br>2. No | If No Q508 |
| 507 | How disclosure cause non adherence? | 1.Discontinuation of the medication due to partner/family objection<br>2.Opposition from the person to whom I disclose my status regarding to ART medication<br>3. Specify other_____ | |
| 508 | Non disclosure affects ART adherence | 1. Yes<br>2. No | If No Q 510 |

| | | | |
|---|---|---|---|
| 509 | How non disclosure affects your adherence? | **Multiple response(yes/no)**<br>1. I miss the medication<br>2. I don‟t took the medication in front of my partner, family or others<br>3.Interaption ART due to stigma, violence, blame<br>4.other specify_____ | |
| 510 | Initiation of ART medication facilitates disclosure | 1. Yes<br>2. No | If No Q 512 |
| 511 | If yes how beginning ART medication facilitates disclosure? | 1. Notification of the medication by others<br>2. Therapeutic effect of the medication<br>3. Side effect of the medication<br>4. Specify other_____ | |
| 512 | Adherence to ART medication encourage disclosure | 1. Yes<br>2. No | If No Q 514 |
| 513 | How adherences to ART medication encourage disclosure? | 1. Becoming health while taking the medication timely<br>2. Specify other_____ | |
| 514 | Initiation of ART medication delay/impede disclosure | 1. Yes<br>2. No | |
| 515 | How ART initiation delay/impede disclosure | 1. Becoming health after initiation of ART<br>2. Specify others_____ | |

## Annex IV. Afan Oromo questionnaire

Yuniiversiitii Addis Ababaatti, Kolleejii Saayinsii Fayyaa, Mana barumsaa Fayyaa Hawasaatti qoo"annoo waa"ee buaa/frii qorannoo dhiigaa dhkubaa HIV/AIDS ifaa baasu fi dawaa /qoricha isaa seran fudhachu godina shawa lixa Hospitala Ambo irratti ta"uuf gaaffiwwan qophaa"an.

### A. Unka odeeffannoo

Nagaa bultanii/oltanii! Maqaan kiyya_____jedhama. Ani hojjeta /tu kuta ART Hospital Ambo yoo ta"u qoo"annoo waa"ee buaa/frii qorannoo dhiigaa dhkubaa HIV/AIDS ifaa baasu fi dawaa /qoricha isaa seran fudhachu Yuniiversiitii Finfinneetiin geggeeffamaa jiruf akka odefano funanuf filatamera. Isin immoo qoo"annoo kana keessatti akka hirmaattaniif haala saynisawaa ta"en filatamtaniittu; gaaffii tokko tokko ani isin gaafadhuuf deebii naaf kennitu jedheen abdii guddaa qaba.Wanta ani isin hubachiisuu barbaannu deebiin isin nuuf deebistan/kennitan icciitiin Kan eegamu ta"a. Maqaa keessanii nutti himuu hin barbaachisu. Kana malees mirga guutuu qoo"annaa kana keessatti hirmaachuu fi hirmaachuu dhiisuu, gaaffii isin hin ilaallanne irra darbuu, akkasumas gaaffii fi deebii itti fufuu yoo hin barbaanne ta"e gidduutti dhaabuuf mirga guutuu qabdu. Gaaffiin tokko tokko waa"ee jireenya dhuunfaa keessanii waan ilaallatuuf deebisuuf ulfaataa ta"u ni danda"a haata'u malee galmaan ga'umsa kaayyoo qorannoo kanaaf muuxannoon keessan baay"ee barbaachisaa fi kan bu"aa olaanaa qabudha. Gaaffii fi deebiin kun tilmaamaan daqiiqaa 20-25 fudhata. Gaaffii gaafattan qabduu?

Baay"ee galatoomaa!

Qo"annaa kana keessatti hirmaachuuf fedha qabdaa?

Eeyyee ☐ lakki ☐

Deebiin keessan „Eeyyee" yoo ta"e gara gaaffii fi deebii koottan darba.

## B.**Unkaa waliigaltee**

Ani mallattoo kiyya armaan gaditti kanan kaaye namoonni qoo‟annoo kana geggeessaa jiran faayidaa qoo‟annoo kana ifa naa godhaniiru akkasumas gaaffiin beekuu fi na ilaallatu akkan deebisuuf ifa naa godhaniiru. Mata dureen qoo‟annoo kanaas waa‟ee buaa/frii qorannoo dhiigaa dhkubaa HIV/AIDS ifaa baasu fi dawaa /qoricha isaa seran fudhachuu ta‟u isaa natti himameera. Kana malees odeeffannoon ani keennu qoo‟annaa kana qofaaf akka itti fayyadaman, icciitiin akka ta‟u natti himameera. Gaaffii fi deebii keessatti hirmaachuu fi hrmaachuu dhiisuu akkan danda‟u, gaaffii deebisuu hin barbaadne akkan irra darbuu danda‟us natti himameera. Yeroon barbaadettis gaaffii gidduutti dhiisuuf mirga akkan qabu naaf ibsameera.

Odeeffannoo armaan olii irratti hunda‟uudhaan, qoo‟annoo kana keessatti feedhii kiyyaan irratti hirmaachuuf walii galuu koo mallattoo kootiin nan mirkaneessa.

Mallattoo_____

Guyyaa_____

**Guca Gaafataan guutamu**

Maqaa magaalaa/dhaabbata fayyaa_____

Maqaa gaafataa_____ Mallattoo _____

Maqaa too‟ataa _____Mallattoo_____

Lakkoofsa eenyummaa gaafatamaa _____

## Gaaffii hiika afaan oromoon qopha'ee

### Kutaa 1ffaa: Gaaffilee dhimma dinagddee fi hawwaasummaatiin wal qabatan

| Lak | Gaaffii | Mallattoo itti adda bahan | Irra darbi |
|---|---|---|---|
| 101 | Bakka/ iddoo jireenyaa kee? | 1. Magaala 2. Baadiyyaa | |
| 102 | Umriin kee meeqa? | Waggaa_____ | |
| 103 | Saala | 1. Dhiira 2. Dhala | |
| 104 | Sabni kee maalidha? | 1. Oromoo<br>2. Amaaraa<br>3. Kan bira ibsi_____ | |
| 105 | Amantaa maal hordofta? | 1. Orthodoksii<br>2. Protestaantii<br>3. Kan biraa ibsi_____ | |
| 106 | Sadarkaa barumsa kee maali? | 1. Hin baranne<br>2. Dubbisuufi barressuu<br>3. 1-8<br>4. 9-12<br>5. Kolleejjii tekkinika leenjiifi oogumaa<br>6. Diploomaa fi isaa ol | |
| 107 | Gosa hojii | 1. Qotee bulaa<br>2. Daldaala<br>3. Miinddeffamaa(ttu)<br>4. Kan hin miinddiffamne<br>5. Kan bira ibsi_____ | |
| 108 | Yeroo ammaa kana sadarkaan fuudha/ heerumaa kee maal irra jiraa? | 1. Hin fuune/heerumne<br>2. Fuudheera /heerumeera<br>3. Hiikera<br>4. Abbaa/haadhaa manan koo du"eera<br>5. Kan biraa,ibsi_____ | |
| 109 | Galiin kee ji"aan | Qarshii_____ | |

| | | | |
|---|---|---|---|
| 110 | Galiinhaadha/abbaa manaa kee ji‟‟aan | Qarshii_____ | |
| 111 | Keemikaala qaama miira namaa kakaasan ni fayyadamtaa? | 1. Eeyyee 2. Lakki | Yoo **Lakki G 201** darbi |
| 112 | Gaaffii lak **111** yoo “**Eeyyee**”jette keemikaala akkamii fayyadamtaa? | **Deebii tokkoo ol kennuun ni danda’ama**<br>**Eeyyee** **Lakki**<br>1.Alkoolii 1 2<br>2. Sujaaraa 1 2<br>3. Caatii 1 2<br>4.Ashishii 1 2 | |

## Kutaa –II: Bu’aa qorannoo dhiiga kee namootaaf ibsuu irratti

| QID | Gaaffii | Deebii | Irra darbi |
|---|---|---|---|
| 201 | Erga HIViin dhiiga kee keessa jiraachusa beekte hammam turtte? | 1. Ji‟‟a_____<br>2. Waggaa _____ | |
| 202 | Akka dhukkuba HIV wajjin jiraatu namatti himttee beektaa? | 1. Eeyyee<br>2. Lakki | Yoo **Lakki G. 205** |
| 203 | Bu‟‟aa qorannoo dhiiga kee eenyutti himttee? **Deebii tokko ol kennun ni danda’ama?** | 1. Jaalallee/abbaa/haadha manaa kootti<br>2. Maati kootti<br>3. Kan bira ibsi_____ | |
| 204 | Erga bartee yeroo hammam booda bu‟‟aa qorannoo dhiiga kee himttee? | 1. Akkuman bu‟‟aa qorannoodhiigaa koo bare booda<br>2. Ji‟‟a____booda<br>3. Waggaa___booda | |

| | | | |
|---|---|---|---|
| 205 | Akka dhukkuba HIV/AIDS wajjin jiraattu maalif himu diddee? | 1.Sodaaqofaa taʺuu/naadhise/ttedeema/demti jedhen<br>2.Icciitii koo naa hin eegaan jedhen sodaadhe<br>3.Sodaa komii amanamummaa dhabuu<br>4.Soda fudhatama dhabuu<br>5. kan bira ibsi_____ | |

**Kutaa III: Wantoota akka HIV/AIDS waajjin jiraatan ibsuuf nama rakkisanii fi bu'aa ifa ofi baasu.**

| QID | Gaaffii | Deebii | Irra darbu |
|---|---|---|---|
| 301 | HIV otoo hin qoratamiin dura walittii dhufeenyi Jaalallee /abbaa/haadha manaa kee faana qabdu maal fakkaata? | 1. Waliitti dhufeenya gaarii<br>2. Walitti buʺinsi ni jira<br>3. Kanbiraa ibsi_____ | |
| 302 | Atiifi abbaa/haadha manan kee dhiiga kee HIVʺf otoo hin qoratamiin dura, waaʺee qorannoo dhiiga HIV irratti mariiʺatani turee? | 1. Eeyyee<br>2. Lakki | |
| 303 | Firiin qoranno dhiiga HIV/AIDS abbaa/haadha warra kee ni beektaa? | 1. Eeyyee<br>2. Lakki | Yoo **Lakki G 305** |
| 304 | Buʺaan qoranno dhiiga isa/ishee maalii? | 1. HIV Pozetiivii<br>2. HIV Negatiivii | |
| 305 | Buʺaa qorannoo dhiiga kee **jaalallee/abbaa/haadhaawarra**keetti himteettaa? | 1. Eeyyee<br>2. Lakki | Yoo **Lakki G 309** |
| 306 | Deebiin jaalallee/ abbaa/haadhaa warra ykn maati kee akkam turee? | 1. Deebii sirii taʺe<br>2. Deebii sirii hin taane | Yoodeebi sirii hintaaneG308 |

| | | | |
|---|---|---|---|
| 307 | **Deebii sirrii ta'e** | | |
| 1 | Itti dhagahame (bakka koo buu‟ee/te naaf yaadde) | **Eyyee** **Lakki**<br>1 2 | |
| 2 | Yaada koo fudhate(tte) | 1 2 | |
| 3 | Yaada deegarsa dabale(te) | 1 2 | |
| 4 | HIV qoratmuuf murtteesse(te) | 1 2 | |
| 5 | Kan biraa, ibsi_____ | | |
| 308 | **Deebii deebii sirrii hin taane** | | |
| 1 | Naadhise/te deeme/te | **Eeyee** **Lakki**<br>1 2 | |
| 2 | Naatii aaree/tte | 1 2 | |
| 3 | Naa Komate/tte | 1 2 | |
| 4 | Fudhatama dhabe | 1 2 | |
| 5 | Badii geessisuu/nalole/te | 1 2 | |
| 6 | Waliitti dhufeenyii keenya ni dhaabate/ addaan baane | 1 2 | |
| 309 | Akka dhukkuba HIV/AIDS wajjin jiraattu maalif jaalallee/ abbaa /haadha warra keetti himu diddee? | 1.Sodaa qofaa ta‟uu/naadhise/tte deema/demti jedhen<br>2.Icciitii koo naa hin eegaan jedhen sodaadhe<br>3.Sodaa komii amanamummaa dhabuu<br>4.Soda fudhatama dhabuu<br>5. kan bira ibsi_____ | |
| 310 | Bu‟aa qorannoo dhiiga kee eerga bartte wal qunnamtii saalaa jaalallee/ abbaa/haadha warra kee faana raawwatteettaa? | 1. Eeyyee<br>2. Lakki | Yoo **Lakki G401** |

| | | | |
|---|---|---|---|
| 311 | Yeroo wal qunnamttii saalaa jaalallee /abbaa/haadha warra kee faana raawwattuu Kondomii fayyadamteettaa? | 1. Eeyyee<br>2. Lakki | Yoo **Lakki G312** |
| 312 | Sababni Kondomii hin fayyadamneef maali? | 1. Inni /isheen HIV faana waan jiraatuuf/ttuuf<br>2. Fedhii qunnamtii koo hirʻïsa<br>3. Akka nahin shakkineef<br>4. Faayidaa kondomii waan hin beekneef<br>5. Kondomii dhabne<br>6. Haadha/abba mana kootu namorme<br>7. Kan biraa ibsi_____ | |

**Kutaa IV. Gaafi waa'ee qoricha umurii dheeressu seeran fudhachu ilalchisee**

| QID | Gaaffii | Deebi | Irra darbu |
|---|---|---|---|
| 401 | Qoricha ummuri dheeressu erga fudhachu jalqabde haammami turte? | Jiʻa_____<br><br>Waggaa_____ | |
| 402 | Guyyaatti siʻa meeqa fudhata? Saʻa isa caqasi | 1. Siʻa tokko<br>2. >> lama<br>3. >> sadii | |
| 403 | Baayʻinni piilii guyyatti fudhatu meeqa? | _____ | |
| 404 | Sagantaan itti qoricha fudhatu siif mijataadha | 1. Eeyyee<br>2. Lakki | |
| 405 | Guyyaa torban darban keessatti qoricha umurii dheeressu fudhachuu dagattee turee? | 1. Eeyyee<br>2. Lakki | Yoo laki G. 501 |

| | | | |
|---|---|---|---|
| 406 | Yoo **Eeyye** jette qoricha (doozii) kan yeero meeqa dagattee? | 1. Tokko<br>2. Lama<br>3. Sadii fi isaa ol | |

**Namoota qoricha isaan dagataniif qofa kan gutamu**

Sababii qoricha (doozii) dagatame/ /otoo hinfudhatamiin hafe (deebii tokkoo ol kennun ni dandaʺama)

| 407 | Sababa dagatameef | Deebii |
|---|---|---|
| 1 | Namoota akkan ani dhukkuba HIV wajjin jiraadhu hin beeknee faana waanan taʺeef | |
| 2 | Namni biroon akkan qoricha umuri dheeressu fudhadhuu akka narrati baran waanan hin barbaneef | |
| 3 | Waantoota biroon/ hojiin waanan qabameef | |
| 4 | Nan irraanfadhe/dagadhe | |
| 5 | Bakka biraa waanan deemeef/mana irra fagadhee waanan deemeef | |
| 6 | Kan bira ibsi_____ | |

**Kutaa –V: Walitti dhufeenya (hariiroo) ifa of baasuu fi turtee "ART" faanaa qaban**

| QID | Gaaffii | Deebii | Irra darbu |
|---|---|---|---|
| 501 | Akka HIV/AIDS wajjin jiraattu ifa of baasun turtti qoricha umurii dheeressu faana walitti dhufenya qabaa? | 1. Eyyee 2. Lakki | |
| 502 | Ifa of baasun akka qoricha umuri dheeressu yeroon jalqabaniif turti isatiif haala ni mijeessaa? | 1. Eyyee 2. Lakki | Yoo Lakki G 504 |
| 503 | Ifa of baasun akkamitti qoricha umuri dheeressu faana turttif haala mijeessa? Deebi tokkoo ol kenun ni dandama | 1.Gargaarsa hawwasummaa qabu ni cimsa<br>2.Sodaa fudhatama dhabu fi loogi ambisa (Avoid fear of stigma and discrimination)<br>3.Qarqaarsa xinsammu ni kenna<br>4. Kan bira ibsi_____ | |

| | | | |
|---|---|---|---|
| 504 | Akka dhukkuba HIV wajjin jiraattu abbaa/haadha mana keetti, maati fi hirriyyota keetti himun fayidda ni qaba jette yaadda? | 1. Eyyee 2. Lakki | Yoo Lakki G 506 |
| 505 | Akka dhukkuba HIV wajjin jiraattu ifa of baasun buʻaa maali qaba? Deebi tokkoo ol kenun ni dandama | 1. Icciiti koo yoon hime boqonna ni argadha.<br>2. Gargaarsa hawwasummaa qabu ni cimsa<br>3.Qoricha umuri dheeressu akkan jalqabu na kakaasa<br>4.Qoricha umuri dheeressu faana akkan turu natasisa<br>5.Wantoota akkan qoricha umuri dheeressu faana hin ture natasisan irranadhorkka<br>6. kanbiraibsi_____ | |
| 506 | Akka dhukkuba HIV wajjin jiraattu ifa of baasun qoricha umuri dheeressu faana akka hin turre ni tasisaa? | 1.Eyyee<br>2.Lakki | Yoo Lakki G 508 |
| 507 | Akkamitti ifa of baasun turtti qoricha umuri dheeressu faana qabdu miidha? Deebi tokkoo ol kenun ni dandama | 1.Abbaa/haadha manan koo ykn maatin koo waan nahinhubanneef qoricha koo addaan kute<br>2. Qoricha umuri dheeressu akkan fudhadhu nama ani itti ifa of baase irra mormmiin waan namuudateef<br>3.Kan bira ibsi_____ | |
| 508 | Of ibsuu dhiisun turtti qoricha umuri dheeressu faana qabdu ni miidhaa? | 1. Eyyee<br>2. Lakki | Yoo Lakki G 510 |

| | | | |
|---|---|---|---|
| 509 | Akkamiti of ibsuu dhiisun turtti qoricha umuri dheeressu faana qabdu midha? Deebi tokkoo ol kenun ni dandama | 1.Daawwa koo nanirranfadha<br>2.Abbaa/haadha mana koo,maati koo bira yeroon jiru qoricha koo seeran hinfudhadhu<br>3.Sababa komii,lola fi fudhatama dhabuun qoricha koo addaan ni kuta<br>4. kan bira ibsi_____ | |
| 510 | Qoricha umuri dheeressu jalqabun ifa of baasuuf haala ni mijeessaa? | 1. Eyyee<br>2. Lakki | Yoo Lakki G512 |
| 511 | Yoo **G.510 Eeyyee** jette akkamiti qorichi umuri dheeressu jalqabun ifa of baasuuf haala mijeessa? Deebi tokkoo ol kenun ni dandama | 1.Qorichi umuri dheeressu akka ta"e yoo namni beeke/bare<br>2. Qorichi umuri dheeressu fudhachun fayidaa waan qabuf<br>3.Miidha qorichi umuri dheeressu waan naratti mulatuf<br>4.Kan bira ibsi_____ | |
| 512 | Turttiin qoricha umuri dheeressu faana qabdu ifa of baasuu ni jajjabeessaa? | 1. Eyyee 2. Lakki | Yoo Lakki G514 |
| 513 | Akkamiti turttiin qoricha umuri dheeressu faana qabdu ifa of baasuu jajjabeessa? | 1.Qoricha umuri dheeressu seeran hordofee fudhachuun fayya buleessa waan natasiseef<br>2.Kan biraibsi_____ | |
| 514 | Qoricha umuri dheeressu jalqabuun ifa of baasuu ni tursiisaa/ni hambbisaa? | 1. Eyyee 2. Lakki | Yoo Eyyee G515 |
| 515 | Akkamiti qoricha umuri dheeressu jalqabun ifa of baasuu tursiisa/hambbisa? | 1.Qoricha umuri dheeressu fudhanan fayya wanan ta"ef<br>2.kan bira ibsi_____ | |

## Annex .V. FGD guidelines

### Welcome to the interview

My name is ---and I work for -----and I come from------. We are here to discuss HIV status disclosure and ART adherence. There is no right or wrong answers .All comments, both positive and negative, are welcome. We 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.

Age_____ Marital Status_____

Sex _____ Address_____

Religion _____ Place of residence_____

Education _____

## Annex VI. Question for FGD

1. What were the factors which influence you on sero status disclosure?
2. What was the benefit and risk of disclosing your HIV status?
3. What was your partner reaction when you told him/her about your HIV status?
4. What was the reaction of other peoples when you told them about your HIV status?
5. How has your relation with partner changed after disclosure? Did he/she become more supportive and kind towards you or violent?
6. How has your relationship changed with your family (mother, father, sister, brother) since they know your HIV positive status? What about your friends?
7. Some people have told us that they experience negative things like rejection and abandonment, losing a job or physical abuse as a result of people knows about their HIV status? Did anything like this happen to you?
8. What do you advise other HIV positive people to tell or not to tell their result to others?
9. Do you think telling own HIV status to others had advantage for the individual?
10. Why you did not tell your status to your partner /family members?
11. What is the factors associate with poor adherence of ART?
12. Is there any relationship between disclosure and ART adherence?

**Haala adeemsa marii waliinii**

Baga nagaan gara waliin mareetti dhuftani

Maqaan koo_____, gaheen hojii koo____ fi kanan dhufe_____irraati.sababni as dhufeefis sadarkaa HIV of ibsuufi turtii namni tokko daawwa farra HIV/ART/irratti waliin mari‟achudha. Gaaffii isaaf deebii sirrii ykn sirrii kan hin taane hin jiru. Deebii siirii ta‟e siirii kan hin taane fudhatama ni qaba.Namni yaada adda addaa fi ilalacha adda addaa ni qaba. Kanaafis soda tokko malee yaada keessan amanamummaadhan kan barbaaddan dubbachuu ni dandeessu. Wanta waliin marii‟anne akka hin daganneef immoo teeppiitti nan qabadha. Ani kanan isiniif waadaa galu yaadni fi muuxannon isin naaf kennitan hundinuu icciittiin isiniif qabama. Kunis dhimma qo‟annoo fi qorannoo qofaaf oola. Maqaan keessan teeppiin hin qabamu,icciitii keessaniif eeguuf jechuudha.

Kanaaf amma gaaffii (marii) kana irratti hirmachuuf ni feetuu?

Yoo eeyyee jettan,waan hirmachuuf feetaniif galatoomaa.

a) Umurii_____
b) Saala_____
c) Amantaa_____
d) Sadarkaa barumsaa_____
e) Sadarkaa fuudhaa_____
f) Aanaa_____
g) Bakka jireenya_____

## Gaaffi marii waliiniif qophaa'ee

1. Akka dhukkuba HIV/AIDS waliin jirattu ifa baasuuf gufuu kan sittii ta"e maali?
2. Fayiidaafi miidhaan ifa of baasuu keef simudaate maali?
3. Yeroo akka vaayiresiin HIV dhiiga kee keessa akka jiru abbaa /haadhaa mana keetti himttu haalli isaa/ishee maal fakkataa? Yaadin namoota biraahoo akkam turee?
4. Erga dhukkuba HIV/AIDS wajjin jiraachu kee abba/haadhamanaa keetti himttee walitti dhufeenyi keessan akkam turee? Maati/hirriyoota kee fanahoo?
5. Namooni tokko tokko erga akka vaayiresiin HIV/AIDS dhiiga isaani keessa akka jiru namootaatti himani miidhaa hedduutu nura gaa"ee jedhu, ati hoo Kan akka kana si mudatee beekaa?
6. Namoota HIV/AIDS waliin jiraatanif akka ifa of basaaniif gorsii ati keennituf maali?
7. Akka dhukkuba HIV/AIDS waliin jirattu ifa of baasuun buu"aa qaba jette yaaddaa? maal faadha?
8. Maliif akka HIV/AIDS waliin jiraattuu abbaa/haadhamana/maatii keetti himu dhiisttee?
9. Wanttoonni qorichaa umurii dheeressu seeran akka hin fudhanne sitaasisan maalfaadhaa?
10. HIV/AIDS waliin akka jiraattan ifa baasuuf qoricha isa seeran hordofaani fudhaachun walitti dhufenya/haariiroo qabuu? Haariiroo isaan qaban ibsi.

**Declaration**

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

Name: Shewaye Fituma

Signature_____

Place: Addis Ababa Ethiopia

Date of submission: May 23, 2012

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

Name: Dr. Wakgari Deressa

Signature_____