SCHOOL OF PUBLIC HEALTH
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REASONS FOR DEFAULTING FROM PUBLIC ART SITES IN ADDIS ABABA

By Addis Akalu, MD
Advisor: Damen Haile Mariam, MD, PhD

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Lists of Acronyms

AOR	**Adjusted Odds Ratio**
AIDS	**Acquired Immune Deficiency Syndrome**
ARV	**Antiretroviral**
ART-LINC	**Antiretroviral Therapy in Lower-Income Countries**
CART	**Combined Antiretroviral Therapy**
EPHA	**Ethiopian public health Association**
FS	**Functional Status**
HIV	**Human Immunodeficiency Virus**
HI	**Health Institutions**
HAART	**Highly Active Antiretroviral Therapy**
IeDEA	**International epidemiological Databases to Evaluate AIDS**
LTFU	**lost to follow up**
MDGS	**Millennium Development Goal**
MOH	**Ministry of Health**
NNRTI	**None-Nucleoside Reverse Transcriptase Inhibitor**
PLWHA	**People Living With HIV/AIDS**
PEPFAR	**President's Emergency plan Fund for AIDS Relief**
TAH	**Tikur Anbessa Hospital**
SPSS	**Statistical Packages for Social Science**
TB	**Tuberculosis**
UNAIDS	**United Nations Program on HIV/AIDS**
ZMH	**Zewditu Memorial Hospital**

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ABSTRACT

Background: The outcome of patients on ART is, usually categorized, as patients alive on treatment, transferred out to other health facility, dead or lost to follow up. "**Lost to follow up**" is considered if he/she has missed more than three scheduled clinic visits or has not been seen for at least 3 months after the initiation of cART. (After single or more visits). As ART programs scales up attrition of patients from the treatment creates a great challenge for developing countries such as Ethiopia and the ART clinic have limited capacity to track effectively lost to follow up and address the pressing question why patients drop out and what condition needed to retain them.

Objectives: To assess reasons for defaulting from ART program at hospital based ART sites in Addis Ababa.

Methods: A case-control study, on reasons for defaulting from ART carried out between Februarys to June 2009 in three public hospital- based ART sites in Addis Ababa. Both cases and controls were selected among patients who started receiving ART during a period of March 1, 2005 to March 31, 2008. Cases were patients who were absent from clinic visit for>= 3 months after the initiation of HAART & controls were those who are alive and on ART

Cases were traced actively through telephone calls or home visits .Controls selected by paired matching of sex and age using lottery method from the list of active ART users who came to the hospital to collect their medication at the day of their appointment. Two controls were matched to each case. Both case and controls were interviewed by trained interviewers using pre tested structured questionnaires. The two groups were compared by social, demographic and health

service variables. The over all lost to follow up rate and specific rate by month of defaulting& health institutions were calculated.

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Results: 1499 lost to follow ups were included in the study. 87%were on WHO clinical stage 3 and 4 and had a median CD4 count of 50 at the start of treatment .The over all lost to follow up rate from ART found to be 21% among 6992 ART patients who started treatment between a period of March 2005to March 2008. During active tracing 471(31.4%) were reported dead and 198(13%) traced were alive while the rest (55%) could not be traced. Defaulting occurred within 3 months after the start of ART. Traced alive and interviewed 103cases (defaulters) matched with 206 controls. Unemployment (AOR=2.162) with CI of 1.08 to 4.22) and monthly household income (AOR=0.09 with CI 0.011, 0.73) was found to be significantly associated with defaulting. Opting out for religious/alternative healing and clinic transfer were the reasons mentioned for treatment interruption in most cases.

Conclusions: The majority of lost to follow ups were enrolled for treatment at advanced stage of HIV illness**.** Large proportion could not be traced due to the wrong address included in the ART register. Death is found to be the main reason for treatment default .Unemployment and economical constraints are the main determinant factors of treatment interruptions.

Recommendations: ART clinics with effective pre ART programs that can identify pool of eligible patients for ART and enroll timely into the ART cohorts, that have active patient tracking mechanisms & linkage with community and faith based organizations should be strengthened.

1. INTRODUCTION

1.1. Background Information

Globally over 60million men, women and children have been infected with the human immune deficiency virus (HIV) since it was first recognized over two decades ago. It remains the leading cause of mortality worldwide and the primary cause of death in sub-Saharan Africa (1).

At the end of 2007, over 33.2 million people were living with HIV world wide, Out of which 22.7million (68%) of them are living in Sub Saharan Africa. Every day over 6800, people's become newly infected with the virus and over 5700 persons die from AIDS, it is mostly because of inadequate access to HIV prevention and treatment services. The HIV pandemic remains the most serious of infectious disease challenges to public health. The estimated number of deaths due to AIDS in 2007 was 2.1 million worldwide, of which 76% occurred in sub-Saharan Africa. Declines in the past two years are partly attributable to the scaling up of antiretroviral treatment services (2).

Someone who is infected with HIV is likely to become sick with AIDS within a few years but if treated with antiretroviral (ARV) medication its life can be prolonged often for a long time. ARV treatment has already dramatically cut the rate of AIDS diagnoses and deaths in Western countries where it has been, provided since the mid 1990s.

Many resource poor countries with HIV epidemic are scaling up antiretroviral therapy since2005. According to WHO estimates, two million people with HIV/AIDS were receiving treatment in low- and middle-income countries in December 2006, which represents 28% of the estimated 7.1 million people in urgent need of treatment. As of December 2007, an estimated 9.7 million of the people

living with HIV in low- and middle-income countries urgently needed these life-saving ARV drugs (3, 4).

Ethiopia is one of the sub Saharan countries and worst affected by HIV/AIDS pandemic. According to the calibrated single point estimate (2007) there are 977,394 People living with the virus that makes the national prevalence rate 2.1%. In addition, it is estimated 258,264 PLWHA require ART the same year (5).ART has been, officially started since July 2003 in the country on fee based services.

Free ART was launched in early 2005 with a national target to have 100,000 people on ART at the end of 2006 ,although coverage significantly increases from 900 to 62,000 by the end of 2006 only 62% of this target was achieved(5).Currently 180,447 had ever started on treatment and 132,865 of them are on treatment (6) .

Antiretroviral medications for HIV/AIDS are among the most efficacious, and the most life transforming of therapeutic innovations of recent years. However, a high level of patient adherence to the drugs is needed to suppress plasma HIV, prevent drug resistance, control disease progression, and prevent transmission of drug-resistant HIV. National treatment guidelines are clear that HIV providers should assess, educate, and support their patients' ARV adherence as part of good HIV Care (7). The long-term retention of patients on treatment is also another crucial aspect to the successful ART program.

The outcome of patients on ART is, usually categorized, as patients "alive on treatment'' "transferred out'' to other health facility, "dead'' or "lost to follow up".

Lost to follow up: A patient is considered lost to follow up if she/he has missed more than three scheduled clinic visits or has not been seen for at least 3 months to pick up her/his medications after the initiation of HAART. The definition for loss to follow up might be different at different countries. As ART programs scales up attrition of patients from the program creates great challenge for developing countries like Ethiopia. The status of patients LTFU had not been established at most HIV and AIDS chronic care facilities patients had simply been marked as "lost" in the ART register and clinics have limited capacity to track the Patients out come. For evaluation and management of antiretroviral treatment programs, especially to avert the development of drug resistance virus it is important to effectively track loss to follow ups and address the pressing question of why patients drop out and what conditions will be needed to retain them. .

The aim of the present study was to assess the rate of loss to follow ups and to identify their reasons of defaulting from anti retroviral treatment in a hospital based public ART sites in Addis Ababa and to come back with operational recommendation how to overcome this challenging problem in the Ethiopian context.

2. LITERATURE REVIEW

2.1. Introduction to HIV/AIDS Treatment

Antiretroviral treatment is the main type of treatment for HIV or AIDS. It is not a cure, but it can stop people from becoming ill for many years. The treatment consists of drugs that have to be taken every day for the rest of someone's life. ART for HIV infection consists of drugs, which work against the virus by slowing down the replication of HIV in the body. For antiretroviral treatment to be effective for a long time, it is should be taken more than one antiretroviral drug at a time. This is what known as Combination Therapy. Alternatively, modern HIV treatment also called HAART (8).

Taking two or more antiretroviral drugs at the same time vastly reduces the rate at which resistance develop to the drug. It prolonged and improved the lives of hundreds of thousands people in the world. Its benefits are now finally starting to extend to resource-constrained settings where 90% of people with HIV/AIDS are living (9).

2.2. Global Antiretroviral Treatment Coverage

International mobilization to combat HIV has increased progressively since the MDGs established in 2000. The number of people receiving ARV medication in low and middle-income countries increased from 400,000 in December 2003 to 2.99 million in December 2007(3). This number represented 31% of the estimated 9 million people in need of ART. Progress has been uneven around the world. While some countries such as Cuba and Brazil have been providing treatment to the majority of those in need for some time, others such as China, Egypt and Russia are yet to reach even 20% coverage. The high-income countries have established medical facilities to provide people living with HIV immediate access to treatment and care (10).

At the end of 2007, sub-Saharan Africa represented 71% of the estimated total treatment need in low- and middle-income countries and 72% of the total number of people receiving treatment(3). Treatment coverage in this region is low, although the rate of scale-up has been remarkable; between 2006 and 2007 treatment coverage rose by 54%.In Mozambique, Nigeria and Tanzania the numbers of people on treatment more than doubled within a year, although total coverage in these countries remains low.(3)

Botswana's national free antiretroviral treatment programme, which began in 2002, has been one of the world's most successful in terms of outreach, reaching over 80% of those estimated to need treatment. despite an impressive rate of treatment scale-up in many countries in 2007, the current rate of overall treatment expansion is not nearly sufficient to achieve the "All by 2010" targets (11).
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2.3. National ART Coverage

In January 2005 with support from the Global Fund and PEPFAR, Ethiopia has launched free ART program "accelerating access to HIV/AIDS Treatment in Ethiopia road map 2004-2006". In June of 2005, the road map targets to treat 100 thousand patients by the end of 2006 and with a goal of universal access by 2008(12). In 2006 December 96,897 PLWHA had ever been enrolled at 192 ART sites 58,405 had ever started ART and 46,045 were alive and receiving the treatment which constitutes drop out rate of 21.2 %. For patients who had ever started treatment the actual retention rate was 78.8%. By the end of October 2007,113,298 patients had ever started, ART and a quarter reported lost to follow up at the same year. The number of ART sites serving the civilian

population of Ethiopia increased from 49 in late 2005 to 101 in December 2006, and by the end of 2007, it was 270.((6, 13)

At present 420 health facilities (292 public health centers and 125 public and private hospitals and 3 NGO clinics) is providing ART service in the country, which makes the national ART coverage 63%. Similarly, the number of patients who have accessed ART increased. The highest population based ART uptake among administrative regions were recorded for the city regions of Addis Ababa, Amahara and Ormia, all of which have, multiple hospital sites. Afar and Somalia region recorded the lowest ART uptake (6).

Nationally as of January 2009, 180,447 PLWHA had ever started the treatment and the number of patients who are retained on the treatment reached 132,865(74%) that means 26% of the ART patients were not on treatment and categorized as loss to follow-ups at the same period (37).

In Addis Ababa 42,928 patients had ever started the treatment at public ART sites and 32,253 were on treatment as of January 2009, which makes the treatment retention rate 75% and lost to follow-up rate 25% (6).

2.4. Adherence of PLWHA

The best response to HAART is seen when adherence is 100%. Levels of adherence below 95% have been associated with poor suppression of HIV viral load and reduced increase in CD4 count, which might lead to the development of drug resistant strains of HIV(7). Long-term benefit with antiretroviral drugs appears to be associated with adherence rates of 95 percent or greater. This

means that the drugs must be taken daily in the right combination at the right time with less than 5 percent error (8).

Some studies that were conducted in urban settings of Ethiopia showed also a good adherence to combined antiretroviral therapy. The average adherence rate to antiretroviral drugs was found to be 82.8 % at National Defense Force hospital and 81.2% in Zewditu Memorial andTikur Anbessa hospitals (14, 15).

2.5. Magnitude and Reasons of Loss to Follow Up From Antiretroviral Treatment

Most literatures report mainly clinical, immunological and virological data, but little is known about factors influencing loss to follow-up, as it is crucial for the success of treatment that patients stay on therapy and, it is important to analyze factors increasing or impeding adherence (16).

Treatment discontinuation raises some of the same concerns about drug resistance that incomplete adherence does and, even worse, invalidates much of the benefit sought by those implementing treatment programs. Patients with clinical AIDS who discontinue ART will likely die within a relatively short time. High rates of attrition from treatment programs thus pose a serious challenge to program implementers and constitute an inefficient use of scarce treatment resources (16, 17).

Attrition: - defined as discontinuation of ART for any reason. It includes Death, Loss to follow-up, Stopping ARV medications while remaining in care. Transfer to another ART facility is not; regarded as attrition—patients who 'transferred out" are, assumed to be retained (21).

In Ethiopian context "**Lost to follow up;-** is considered if patients missed appointment for at least one month .Those who lost to follow up further categorized as lost(if discontinued follow-up for less than three months),dropped (if discontinued follow up for 3 or months). From different studies conducted in Africa, the proportion of patients lost to follow-up differs between clinics that are ranging from 5% in programmes supported by Medicines Sans Frontiers to 25% in western Kenya (18).

The IeDEA ART-LINC database conducted a study by including 7651 patients who started ART in 15 treatment programmes in Africa, Asia and South America. Of these, 5491 were included in the study eleven sites actively followed patients using telephone calls, letters or home visits and 11 provided free accesses to treatment.

The number of patients included in the analysis ranged from 36 in Thailand to 1219 in Malawi. It is found that only 3% of patients were known to have died by 6 months, but on average 21% of patients had been lost to programmes by that time, including about 4% who had not been seen since receiving their first ART prescription. Sites with larger numbers of patients were less likely to actively, trace patients who did not return to the clinic, and these sites had higher percentages of patients lost to follow-up (19).

In another study on evaluation of the HIV Drug Access Initiative of the Ministry of Health of Uganda and UNAIDS, in which patients paid reduced prices for their medications, found that 114 (24%) of 476 patients were lost to follow-up in the first year (20).

In order to assess the "attrition" rate from ART treatment programmes, investigators from Boston University conducted a systematic search of the literature, and eventually found 32 scientific reports covering over 74,000 patients in 33 ART treatment programmes in 13 countries in sub-Saharan Africa that were either published in peer-reviewed journals or presented at scientific meetings between 2000 and 2007. The main result of this systemic review   has showed about 60% retention of the patients at the end of 2 years follow up. Loss to follow-up is the major cause of attrition, followed by death. Across all the cohorts," they report, "the largest contributor to attrition was loss to follow-up (56% of attrition), followed by death (40% of attrition). According to the conclusion of this study, roughly half of the patients starting HIV treatment programs in Africa are no longer receiving treatment after two years (21).

A study from Latin America and the Caribbean which included 5152 patients who initiated antiretroviral treatment between March 1996 and April 2007, the Loss to follow-up rates differed even more widely between the countries: from a low of 0.6% in Honduras, to 3.1% in Peru, 3.7% in Chile, 3.8% in Haiti, 5.2% in Brazil, and 17% in Argentina (22).

Two studies conducted in two large antiretroviral treatment programs in public hospitals in the city of Johannesburg, South Africa, identified patients who were lost to follow-up through chart reviews (154 of 5821 patients in the first study and 267 of 1631 patients in the second study). In both studies, large proportions of patients (55 and 35%) could not be traced because contact information was either missing or incorrect. Of patients who were successfully traced, large proportions were found to have died (27% in the first study and 48% in the second study) or to have continued ART at other facilities (14 and 17%). A number of reasons for loss to follow-up were common in only

one of the two studies (financial difficulty, lack of knowledge that ART needs to be lifelong, and hospitalization or illness). Among the patients who found to have died, CD4 counts at enrollment were low (23).

In Nigeria, a study conducted to ascertain a reason for default from ART On a cohort of hundred patients showed 36% of the study population defaulted treatment, 18% had died while 46% were alive and well. Major reasons for default includes: opting for spiritual/faith/alternative healing (8%), loss of interest in the programme/financial (7%), movement to home town of origin (6%), changed address(5%), untraceable home address or name (5%), side effects of ART (2%), widowhood rites (1%). About a third of PLWA defaulted from treatment. The major reasons for default were psychosocial factors unrelated to the treatment regimen (24).

A recent study from Kenya that was presented at the XVII International AIDS Conference in Mexico City in August 2008 discussed that men are at much higher risk becoming lost from HIV care programmes. The analysis of clients attending HIV clinics in Western Kenya from the point of starting of antiretroviral Treatment, there were 5701 events (deaths or loss to follow ups) in 31,383 person years with an incidence rate of 18.2 per 100 per year. Men had a higher loss to follow-up rate (21.2 in men, 16.8 in women). At enrolment, men were older, more likely to be attending an urban clinic, to have disclosed their HIV status, to have lower CD4 counts and advanced HIV disease (WHO Stage III/IV). There was no significant difference between how far they were from the clinic, previous antiretroviral treatment or the year of enrolment. This study also identified a number of reasons why both men and women may be at risk of LTFU, men are mostly dropping

from treatment due to work commitments but females are most likely to be lost from their follow-ups due to family commitments and transport costs (25).

In a retrospective cohort study, from Botswana Lost patients were prospectively traced by telephone calls and, if necessary through home visits, the date of initiating HAART and the date of outcome (alive, dead, or lost) were used as the starting and ending points of observation. . The Kaplan-Meier product limit methods were used to calculate one-year survival estimates using outcomes before and after tracing. The differences in these survival estimates were compared. Differences in the using the initial outcomes and the updated outcomes after tracing 20% or greater were considered to be evidence of bias associated with inaccurate ascertainment of death. The study showed that Patients who are lost to follow-up can add a substantial bias to the survival estimates and risk factors for death following initiation of HAART reported by studies in developing countries may be underestimated (26).

A study from Malawi of patients lost to follow-up also demonstrated that 50% the patients who had been lost had died, and of those 58% had died in the 3 months following their last clinic visit (27). Even though there is scarce information about lost to follow patient in Ethiopia a recent study from JImma demonstrated that around 13% defaulter rate among 1270 Patients initiated ART between 2005 and 2007. Reasons for defaulting were unclear but in most cases Reasons given were loss of hope in medication, lack of food, mental illness, holy water, no money for transport, and other illnesses. Tracing was not successful because of incorrect address on the register in 61.6% of the cases. Taking hard drugs, excessive alcohol consumption, being bedridden, living outside Jimma

town and having an HIV negative or unknown HIV status partner were associated with defaulting (28).

A similar study that was conducted in 2006 in Amahara region in Baherdar Feleg Hiwot Hospital and Gonder Referral Hospital showed that the lost to follow up rate is18% and 19% respectively and the majority of the patients who were traced retrospectively were found to be dead (29).

Almost all studies showed that half of the patients receiving ART in different SSA countries who were subsequently lost to follow-up were dead, with a large proportion dying soon after they failed to attend the clinic (27, 29).

The reasons for death were not, ascertained. About one-quarter of patients were alive, some having transferred to another facility and some deciding to stop therapy. An important reason for stopping therapy was the cost of transport from homes to clinics. The remaining patients could not, be traced, with an incorrect address in the register being the most common reason attributed. Whether patients gave a wrong address or whether the details obtained by clinic staff were insufficient is unclear. These overall outcomes are similar in many respects to those found several years ago in Malawi in a study in patients registered as defaulters with regard to treatment for tuberculosis (21, 22, 24).

3. STUDY OBJECTIVES

3.1. General Objective

To assess reasons for defaulting from ART program at hospital based ART sites in Addis Ababa.

3.2. Specific Objectives

➢ To determine the defaulter rate from different ART sites in Addis Ababa

➢ To identify the main reasons associated with defaulting or "lost to follow up'' from public ART sites in Addis Ababa.

4. RESEARCH METHODLOGY

4.1. Description of Study Area

There are 36 public ART sites in the city out of which nine are hospital based and the rest 27 are at health center level. The current study was conducted in the three hospital-based ART sites in Addis Ababa i.e. in Zewditu Memorial Hospital, Tikur Anbessa Hospital and Yekatit 12 Hospital**.** These three hospitals were selected by non-randomized purposive sampling with assumption that it is convenient for the intended study with limited time and cost.

1. **Zewditu Memorial Hospital TB/HIV Clinic**: It is one of the first ART clinics in Ethiopia that is located in Kirkos sub city. The hospital started giving HIV care by providing HIV counseling and testing   for TB patients and for patients with sign and symptoms of HIV infection since 1991. On July 2003, it started providing fee based ART service for all patients from every side of the country. On March 2005 officially   started providing free ART service for patients who are coming from kirkos and akaki/kality sub cities in Addis Ababa. The clinic is relatively, well staffed, and has good medical recording system.

2. **Tikur Anbessa Hospital:** This is a referral and teaching hospital, which is located in Lideta sub city in Addis Ababa the hospital works under MOH. It provides multidisciplinary clinical services for all patients who come from different parts of the country. The hospital started antiretroviral treatment service since March 2005. It gives ART service for patients coming from a Ledeta and Bolle sub cities.

3. **Yekatit 12 Hospital: The** hospital is located in Arada sub city and provides different clinical services. The free ART Program started in 2005 .The catchments areas are Arada and Gulele- sub cities.

The selected three hospitals are PEPFAR implementations sites supported by JHU Tsehai Project that gives technical assistance, ongoing clinical mentorship, training and material support for the ART program.

4.2. Study Design

The study design was case–control design, which was conducted between Februarys to June 2009.

The records of all patients who registered for ART between March1, 2005 and March 31, 2008 at 3 ART sites in Addis Ababa reviewed. when patients start ART, their details are entered on their clinical charts and also on ART register .Patients attend the ART clinic each month on the first 6 months of therapy and at which time their outcome status is entered on their follow up cards and in the ART register then they are given another months supply of ART drugs.

If the patient is not seen in the clinic for three or more consecutive months, the patient is registered as lost to follow up (defaulter) on the follow up charts and ART register. Based on the findings obtained from the records study subjects were identified as defaulter (cases) and non-defaulter (controls).

Non-defaulter is someone who is alive and on ART (for at least for 6 months) at the time of data collection and was rated as good adherer by the providers. Each case is matched by sex and age categories to two controls to increase the power of the study. Both cases and controls were interviewed on the same study variables. Both cases and controls were, selected from a cohort of patients who started ART between March 1,2005 to March 31, 2008.Those patients who were transferred out to other health facilities and confirmed as dead were designated as non –defaulters.

Socio demographic and clinical variables extracted from the patient charts. With the contact details that is obtained from the records ART facility staffs first made telephone call, when patient or his relative successfully contacted, they were asked whether they are still taking ART if not, why he/she stopped. If the patient had died, relatives asked when and how he died (while he was on ART or after he defaulted) by using structured questionnaire.

For those who could not be contacted through telephone, home visit performed by home based care providers who are working in each kebeles under local NGOS "Hiwot". Those patients who, met at home during home visit and stopped their treatment were interviewed by using the structured questionnaire for their reasons of default .If the patient not met at home during home visit or had moved away relatives or neighbors were asked about the true outcome status of the patient.

Controls were selected from the list of active ART users who came to the hospital to collect their medication at the day of their appointment. Each control identified from the same hospitals as well as the cases. In situations where the number of controls that could be, matched to cases turned out to be more than two, two will be selected and matched by lottery methods.

4.3. Study Population

For this study, the **source population** was Ever- started on ART patients at the three-selected hospital-based ART clinics in Addis Ababa. The **study population** was patients who were initiated on ART between the periods of March 2005 to March 2008. Out of nine thousand three hundred

thirty six ART patients, two thousand three hundred forty four excluded according the set exclusion criteria.

Therefore, six thousand nine hundred ninety two adult, newly ART initiated patients were eligible to the study .Of that one thousand four hundred ninety nine were categorized as defaulters and the remaing five thousand four hundred ninety three as non-defaulters or active ART users.

4.4. Sample Size

The study included all cases of "lost-to-follow-up" from the three ART treatment sites (in Tikur Anbessa, Zewditu and Yekatit 12 Hospitals) during the period of March 2005 to March 2008. Therefore, this is a census type study and did not involve any sampling. Number of "lost-to-follow-up" that were included in the study were 1499 cases.

Figure 1 - Selection procedure of cases and controls
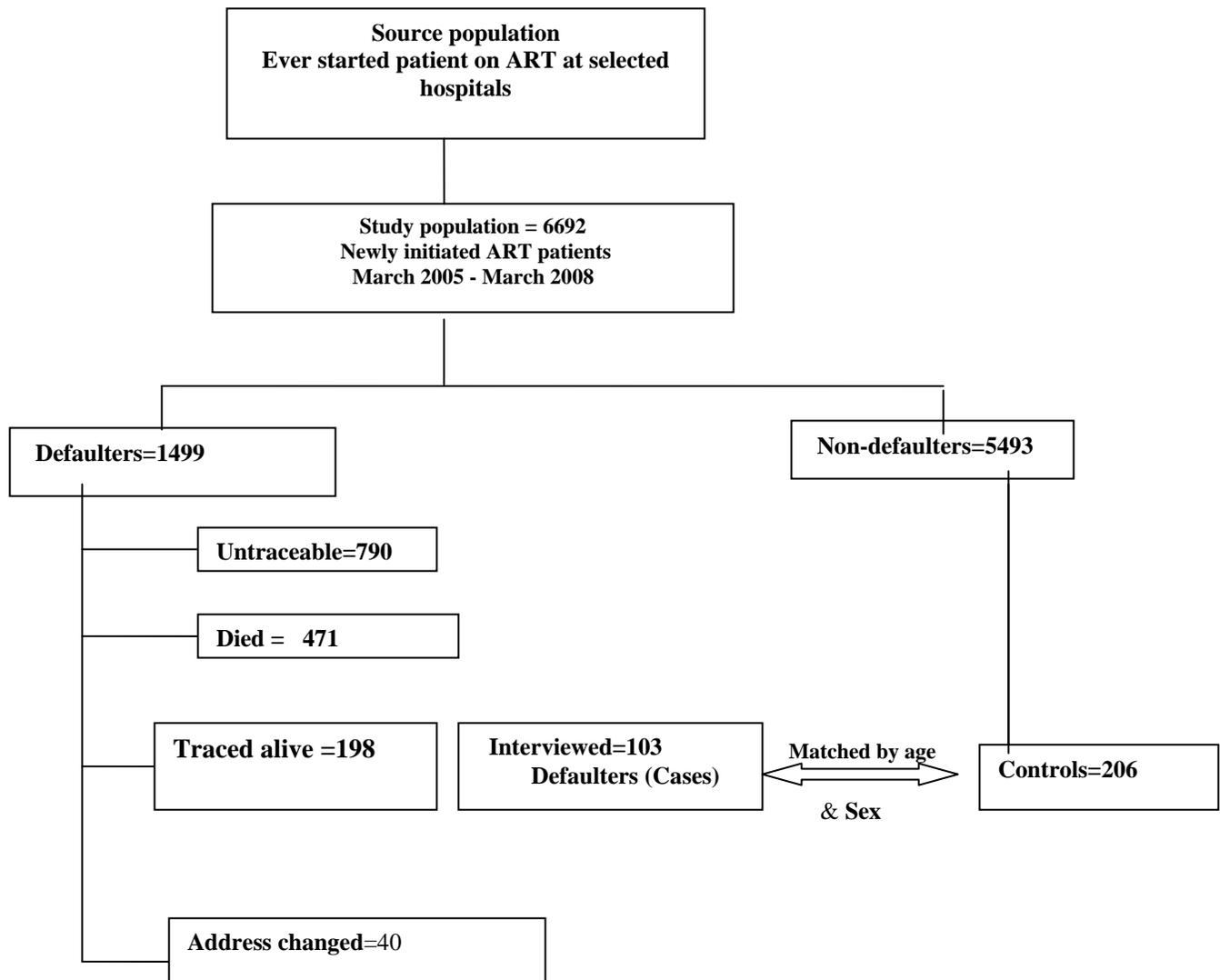
Inclusion criteria
- All adults >=18 years who were registered and start combined ART between March 2005- March 2008

Exclusion criteria

- All patients whose address is out of Addis Ababa.

- All patients who were started on ART but were transferred out to other health facility.

- All patients whose deaths were recorded on the medical files.

- All patients who were transferred in from any other ART sites.

- All patients whose address is not complete on their treatment records.

- Patients who were unable to hear, unconscious or mentally disabled.

4.5. Outcome Measures

The outcome variable measured was defaulting from ART; using formats for data collection, clinical data and contact details collected for each defaulter from the records then interviewed thorough telephone or by visit at residential area.

4.6. Exposure Measures

The exposure variables measured: were employment status, knowledge about duration of ART, attitudes about ART clinics, average monthly income, cost incurred for the clinic visit, disclosure status, family support and distance from the HI. Lists of these factors were taken based on literature review. These exposure variables measured in the following manner

4.6.1. Educational status

The study subjects were asked about their educational level by using the structured questionnaire according to the response given, the ones labeled as "illiterate" are those who could not write or

read, others who can read and write and those with basic education were classified according to their levels of education.

4.6.2. Occupational status

Study subjects were asked if they were employed by any governmental, non-governmental or private organization. Based on this subjects were classified into employed and unemployed. Self-employed were taken as employed .Those who did not apply for employment were taken as unemployed.

4.6.3. Study subjects knowledge about duration of ART

Study subjects were asked about the duration of ART. This was studied by open-ended questions that were grouped into two; those with adequate knowledge (those who replied that ART has to be taken for life) and those with inadequate knowledge (those who replied I do not know that it has to be taken life).

4.6.4. Attitudes towards the ART center

Study subjects were asked about their choice and feeling of ART clinics. Based on the response, subjects were grouped in to two: those who have positive attitude towards ART clinics and those with negative attitude.

4.6.5. Household income

Study subjects average household income/month in birr asked by using open-ended question and the result was classified in to four groups: those who have below 350 birr /month, 351 to 500,501 to 1000 and above 1000 Birr.

4.6.6. Family support

The Study participants were asked whether, they are getting any kind of support by their family members or relatives during their illness and help to adhere to the treatment throughout their follow up.

4.6.7. Disclosure status

The study participants were asked if they disclosed their sero status to their close family members or relatives by using close ended question .those who said yes labeled as disclosed and those who said no labeled as not disclosed.

4.6.8. Distance of participants' residence from the ART sites

Distance from the study subject's residence area to the ART sites estimated by taking the distance from the center of each sub cities to the respected hospitals. if the distance from the center of the respected sub city to the hospital is<=5km it is considered as" Near" and if it is >=5km as "Far" to the treatment unit.

4.7. Data Collection and Management

Initially two trained ART facility nurses in each hospital, extracted data on socio demographic and clinical variables from the patient chart and the ART register. This was based on inclusion and exclusion criteria of the study. Training was given for all of them. Data collection form was

prepared in English and used. The structured questionnaire that was adopted and modified from the previous study (36) used for active tracing and interviewing both cases and controls.

Both were pre tested in ZMH. After the pre test, minor changes and restructuring was made.The PI and the assigned supervisors in each hospital supervised the data collection process. Categories used in matching for age in years were 18-27, 28-37, 38-47, 48-57, 58-67, and above 68 .

For active tracing prior the beginning of the day's data collection, each data collector obtained information about the study subjects (sub-city, kebele, and house number). Home visits or telephone calls were repeated three times in case of absence of the respondents. Filled questionnaires were submitted to the PI on daily basis. The questionnaires edited every day after data collection. Every incomplete questionnaire sent back to the corresponding data collectors. Day to day supervision and home visit together With the interviews made by nurses who are working as site (sub city) supporters on HIV desk under the local NGOS ("Hiwot")as well as assigned as supervisors for the study. Data collection conducted from January to April 2008.

4.8. Data Analysis

Data collected were entered using SPSS version 12, overall defaulter rate, and specific rates by health institution and months of default calculated. Appropriate bivariate and multivariate statistics were computed to assess the presence and degree of association between defaulting and determinant factors.

4.9. Ethical Considerations

Initially ethical clearance was obtained from Addis Ababa University (AAU), Medical Faculty Institutional Review Board (IRB-MF). Letters of support were written to regional health bureau permission for the study was obtained from RHB and the respective HI. Following this, charts of the patients were reviewed with maximum confidentiality. Oral consent was taken from each study participant's before making the interview. During the interview patients were told about the aim of the interview and possible benefits of the study. In addition, traced defaulters were counseled and brought to the hospital by home care-providers for treatment restart.

4.10. Dissemination of Results

The findings of this study will be circulated to Addis Ababa City Administrative Health Bureau, the school of public health, and to other organizations that have concern in ART service in the region, .The findings will also send for publication in reputable journals.

4.11. Operational Definitions:

Attrition – defined as discontinuation of ART for any reason. It includes Death, Loss to follow-up, Stopping ARV medications while remaining in care.

Transfer to another ART facility is not regarded as attrition—patients who 'transferred out" are, assumed to be retained.

Adherence: The number of doses correctly taken, divided by the number of doses prescribed for a given period. The definition is based on the number of doses missed or delayed for more than 90 minutes in a specified time period by self report and on any appointment missed .Adherence is

considered good if the patient had taken >95% (misses only </=2 doses/30 doses) of the prescribed doses correctly.

Combination therapy: two or more drugs or treatments used together to achieve maximum result.

Loss to follow up (LTFU) -is defined as being absent from clinic visit for >=3months (after single or more visit) after the initiation of combined ART.

Opportunistic infection: the term is applied to infections with bacteria, viruses, fungi or protozoa to which individuals with a normal immune system usually not susceptible these organisms take advantage of the opportunity provided by immunodeficiency.

True defaulter: is a person who is traced to be alive and has discontinued the ART voluntarily due to various reasons.

5. RESULTS

5.1 Description of Study Subjects

Over a period of 36 months (between March 2005 and March 2008), 9336 patients were registered as ever having started on ART at the three public hospital-based ART clinics in Addis Ababa.

Among these 6425 (68.8%) were alive and on ART, 847 (9%) were transferred out to other facilities, 541 (5.7%) have died and 1523 (16%) were recorded as lost to follow up.

Out of the 9336 ever started on ART, 2344 (25%) non-eligible persons (including 24 defaulters whose address was outside Addis) were excluded from the study according to the set exclusion criteria. The remaining 6992 (75%) adult patients age >= 18 years who met the inclusion criteria for the study were taken as the study population. These were all newly enrolled, eligible patients to start ART between Mach 2005 and March 2008.

From those eligible, 3846 (55%) were females and 3146 (45%) were males. All these adult patients were considered eligible for ART based on the WHO ART recommendation and the national ART guideline, which includes a prior AIDS diagnosis (WHO stage 4) disease or CD4 cell count <=200 cells/ml. All were treatment–naïve patients and their treatment regimen consisted of two nucleoside reverse transcriptase inhibitors (NRTI: stavudine and lamivudine or zidovudine and lamivudine) along with a non-nucleoside reverse transcriptase inhibitor (NNRTI-Efavirenze or neivirapine).

All eligible patients at the three selected hospitals access free services (medication clinical or laboratory resources) regardless of their levels of income.

Table 1 - Socio-demographic and socio economic characteristics of the respondent's in the selected three public ART sites in Addis Ababa, March 2005-March 2008

Variables	Category	Interviewed subjects (n=309)
Sex	Female	156 (50.56%)
	Male	153 (49.5%)
Age	18-27	57 (18.4%)
	28-37	144 (46.6%)
	38-47	69 (22.3%)
	48-57	24 (7.8%)
	58-67	15 (4.9%)
Mean Age		36
Education	Illiterate	25(8.2%)
	Read and write	26(8.6%)
	Elementary	90(29.6%)
	Secondary	111(36.5%)
	Tertiary	52(17.1%)
Marital status	Single	113(36.3%)
	Married	123(39.8%)
	Widowed	45 (14.6%)
	Divorced	25 (8.1%)
Employment status	Employed	148 (48.5%)
	Unemployed	157 (51.5%)
House hold income/month	< 350	162(54.5%)
	351-500	44(15%)
	501-1000	53(18%)
	>1000	38(13%)
Distance	Nearest(<=5km)	221(71.5%)
	Furthest(>5Km)	88 (28.5%)

5.2. Lost to Follow Up

According to the chart review the overall rate of lost to follow up among 6992, patients initiated ART between March 2005 and March 2008, was found to be 21.4 %.

5.2.1. Socio-demographic characteristics of patients lost to follow up

0f those 1499, lost to follow ups 819 (55) were females and 618 (45%) males. The majority of 1324(88%) them were within economically productive age group i.e. is 18-47yrs and their median age was 35 years.

Five hundred twenty five (38%) of them were married i.e. (56%) men and (44%) women respectively, 12.8% divorced and 15.3% widow/widower but women discontinuing follow up were significantly more likely to be widowed than men (78% vs. 22%) were. The majority of them registered from Kirkos (23%) and Lideta sub-cities (22%).

5.2.2. Clinical and laboratory markers at the start of ART

For all lost to follow-ups the median time between start of ART and date of default was three months. For 212 (14%) of them only one or single clinical visit was recorded that means these patients did not return to the clinic after the first ART initiation visit. (Figure-2 shows Distribution of overall lost to follow up by months).

At the initiation of ART 34.4% lost to follow up were ambulatory (unable to work) and 22.6% bed ridden; the remaining 36% were working and the baseline functional status for the few (7.1%) was missing. Among those categorized as lost to follow ups the vast majority of them (86.6%) were in the WHO stage 3or 4 at the initiation of the ART. (Table 3)

The median initial CD4 count for all discontinuing the follow-up was 80 cells/ml. This is much lower than the recommended 200 cells/ml for eligibility for ART. All registered lost to follow ups were on either of two first lines NRTI/NNRTI at the time of default.

Forty-three of 1499 (2.8%) lost to follow ups reported as having drug side effect during the study period. 436 (29%) registered lost to follow ups had TB co infection and were on anti TB at the start of ART.

2- Rates of lost to follow-ups by Health institution in Addis Ababa (March 2005-March 2008)

Health Institutions	Date of patient observations	No of eligible ever started on ART patients (n=6992)	Recorded lost to follow ups (n=1499)	Successfully contacted lost-to follow ups (n=669)	Interviewed cases True defaulters Rate(n=103)
ZMH	March 2005-March 2008	3809(54.5%)	668(17.5%)	289(43. %)	33(11.4%)
TAH	March 2005-March 2008	1650(23.6%)	671(40%)	295(44%)	49(16.6)
Yekatit 12	Sep. 2005-March 2008	1533(22%)	160(10%)	85(53%)	21(24.7%)
Total		**6992**	**1499(21.4%)**	669(44.6%)	**103(15.4%**

Six thousand six hundred ninety two patients were newly initiated on the ART between March 2005 and March 2008, at the three treatment sites of whom 1499 (21.4%) were categorized as lost to follow up during the same period.

Most of the patients that were lost to follow up (40%) were reported from TAH. ZMH has the highest uptake of ART compared to TAH within the same period (55%vs 24%) but constitute almost the same amount of lost to follow ups (44.6%) among the totals (Table 2 shows distribution of LTFUS by HI).

The recorded total rate of lost to follow ups was 21.4%.However, after active tracing the true lost to follow-up (defaulter rate) is found to be 15.4% among those successfully traced (n=669).

Table 3- characteristics of patients on ART who were classified as lost to follow ups from the three hospitals in Addis Ababa March 2005-March 2008

Characteristics	ZMH	TAH	Yekatit 12	All
Median age	35	35	32	35
Female patients	373 (56%)	357 (53%)	89 (55.6%)	819 (54.6%)
Indication for ART				
WHO clinical stage 3	322 (49%)	296 (46%)	89 (56%)	707 (49%)*
WHO clinical stage 4	248 (38%)	262 (41%)	46 (29%)	556 (38%)*
WHO clinical stages 1&2 with CD4 count <200	71(12%)	76 (23%)	20 (15%)	167 (13%)*
Median (range time between starting & stopping ART) in months	1.9	4.4	3.4	3.0
TB/HIV co infection	200 (30%)	187 (28%)	48 (30%)	435 (29%)**

*WHO clinical stage missing information for 41 cases (n=1458)
**TB missing information for 270 cases (n=1259)

5.3. True Outcome Status during Defaulter Tracing Visit

Of the 1499, patients who were reported as discontinuing the follow-ups193 (12.8%) of them had no properly registered contact address on their clinical charts and were completely untraceable. The rest 1306 (87%) had either their telephone number or complete home address were recorded. Moreover, active tracing was tried for all of them and 709 cases successfully traced. Among them 504 of them traced through home visit and 205 through telephone calls.

From the contacted participants, 136 (19%) were actually contacted. For the five hundred seventy three LTFUS who were not met at home during home visit, relatives 467 (66%) and neighbors 106 (15%) were contacted respectively and asked about the patients true outcome status.

From neighbors' contact, 40 defaulters had changed their address and their true outcome status is unknown. Finally, 669 defaulters were successfully contacted and their outcome status established.

Of the total 669 successful contact 198 (29.5%) of them were found to be alive 471 (70 %) were found to be dead. Out of those who died 337 (72%) of them died while on treatment and the rest 134 (28%) after defaulting their treatment (Table 4).

The group traced to be living (n=198) was compared with the group traced to be deceased (n=471). Characteristics associated with death was lower baseline CD4 cell count, advanced HIV disease

(WHO stage3/4), baseline poor functional status and TB/HIV co infection in 1/3 of them at the start of treatment.

Table 4-characteristics and out come status at the default-tracing visit of patients on ART who were classified as lost to follow ups from the three hospitals in Addis Ababa March 2005-March 2008

Outcome status	ZMH	TAH	Yekatit 12	All
Total alive	78 (12%)	81 (12%)	39 (24%)	**198 (13.2%)**
Alive and on ART at different clinics (in out of AA and abroad)	26 (33.3%)	43 (53%)	16 (41%)	85(43%)
Alive &on ART at the same clinic	3 (3.8%)	5 (6.2%)	2 (5%)	10 (5%)
Alive but had stopped ART (Defaulters)	49 (62%)	33 (40.7%)	21(54%)	103 (52%)
Deceased	217 (46%)	208 (44%)	46 (10%)	**471 (31%)**
While on treatment	160 (74%)	144 (69%)	33 (72%)	337 (72%)
After defaulting	57(26%)	64 (31%)	13 (28%)	134 (28%)
Untraceable (total)	371 (45%)	383 (46%)	80 (9.6%)	830 **(55.4%)**
Incorrectly registered address	130 (67.3%)	53 (27.4%)	10 (5%)	193 (23.2%)
Wrong contact address	221 (37%)	312 (52.3%)	64 (10.7%)	597 (72%)
Change of address/family moved	20 (50%)	18 (45%)	6 (5%)	40(4.8%)

Among those who are traced and found alive individuals (n=198), one hundred three (n=103) had stopped their medication voluntarily due to various reasons. Among the untraceable lost to follow ups 193 (23%) of them have no properly registered contact address in their charts (130 (35%) of them from ZMH, 53 (14%) from TAH and 10 (12.5%) from Yekatit 12).

Five hundred ninety seven   (72%) LTFUS among the untraceable could not be contacted because, either their contact telephone number or home address was wrong or they were unknown by the given addresses. (Table 4) .Out of them 322 (54%) were females and 275(46%) males. These groups had similarly a low median CD4-cell count and advanced HIV disease at the start of the ART. 162 (21%) of them had active TB and were on anti TB at the start of ART. Among them 221 (37%) were followed in ZMH, 312(52.3%) in TAH and 64 (10.5%) in Yekatit 12 Hospital

Fig. 2 Time Distribution of Lost to follow up from the three hospitals in A.A March 2005-March 2008
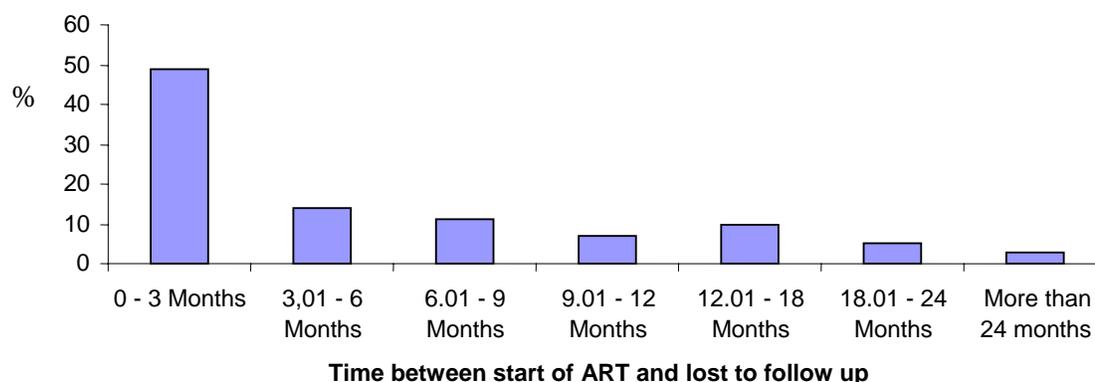
As it is presented in figure 1, almost 50% of lost to follow ups were recorded within the first three months after the commencement of ART. As the time of follow up increases the number of lost to follow ups declines significantly which indicates the first 3 months are the most crucial moment for better treatment outcome.

Table 5 - Distribution of lost to follow-ups by health institution and different sub cites in Addis Ababa March 2005-March 2008

Sub-city	No. defaulters/HI				Outcome		
	ZMH (n=605)	TAH (n=659)	Yekatit 12 (n=158)	All (n=1422**)	Traced alive (n=198)	Traced Deceased (n=456)*	True defaulters (n=103)
Kirkos	332 (55%)	13 (1.9%)	1 (1.3%)	346 (24%)	45 (22%)	135(30%)	32 (31%)
Lideta	3 (0.5%)	325 (49%)	0	328 (23%)	40 20%)	118 (26%)	16 (16%)
Bole	13 (2%)	211 (32%)	12 (7.5%)	236 (17%)	34 (17.2%)	61 (13.3%)	13 (13 %)
Arada	11 (1.8%)	61 (9.3%)	116 (73%)	188 (13%)	39 (20%)	62 (14%)	20 (19%)
Akaki Kality	169 (28%)	3 (0.4%)	0	172 (12%)	20 (10%)	47 (10%)	10 (10 %)
Yeka	39 (6.4%)	14 (2%)	26 (16.5%)	79 (5.5%)	9 (4.5%)	18 (4%)	7 (7%)
Nefasilk Lafto	20 (3.3%)	12 (1.8%)	0	32 (2%)	7 (4%)	3 (0.6%)	1 (0.9%)
Kolefe Keranio	6 (1%)	10 (1.5%)	0	16 (1.3%)	1(0.5%)	4 (0.7%)	1 (0.9%)
Gulele	5 (0.8%)	6 (0.9%)	2 (1.3%)	13 (0.9%)	2 (1%)	5 (0.8%)	1 (0.9%)
Addis Ketema	7 (1.1%)	4 (0.6%)	1 (0.6%)	12 (0.8%)	1 (0.5%)	3 (0.6%(	2 (2%)

5.4. Reasons for Defaulting

Overall the commonest reason for patient remaining being lost to follow up is death, this being the case for471 (70%) of the (n= 669) successfully traced. One hundred ninety eight patients (29%) were still alive and of those 85 (43%) had transferred themselves to another ART clinics within or outside Addis Ababa or traveled abroad without informing the clinic where they registered. Ten (5%) patients who were misfiled as, defaulter by the clinic staffs still had follow-ups at the same clinic and were active users of ARV. The remaining 103(52%) had stopped therapy due to various reasons.

By using open-ended question cases (true defaulters) were asked for their reasons of defaulting from antiretroviral treatment and the most frequently mentioned reasons for defaulting were (Table 6):

1. Religious beliefs/spirituality/alternative healing (35%)

2. Lack of food/shelter or money (7%)

3. Fear of treatments side effects (4%)

Table 6 – Reported Reasons for Defaulting From ART Sites
(Addis Ababa March 2005 -March 2008)

Reasons	Number	Percent
Clinic transfer/physical relocation	85	43%
Religion/Spirituality/alternative healing	69	35%
Absence of food /shelter/money	14	7%
At the same clinic misfiled	10	5%
Treatment side effect	7	4%
Treatment fatigue/Loss of hope	6	3%
Healthy feeling	5	2%
Fear of stigma	2	1%
Total	**198**	**100**

5.5. *Matched Case-Control and Multivariate Analyses*

Matched case –control analysis was done on 103 cases and 206 controls. The matched cases and controls were compared by employment status, educational level, martial status, attitude towards the treatment center, knowledge about the duration of ART, family support for the patient, average monthly household income, disclosure status, cost incurred for clinic visit and distance from the health facilities.

Factors significantly associated with defaulting in the bivariate analysis were:

1. Employment status (OR=4.22 with 95%CI of 2.45 to 7.11);

2. Average monthly household income 351-500 birr/month (OR=0.34 with 95%CI0.153 to0.75), 500-1000birr/month (OR=0.34 with 95%CI 0.17 to0.72) and >1000birr/month OR=0.36with 95%CI 0.005 to0.27).

3. Attitude towards the treatment center (OR=0.52 with 95% CI of 0.3 to 0.9);

4. Family support (OR= 0.55 with 95%CI of 0.33to 0.91);

5. Marital status (being widowed) (OR= 2.97 with 95%CI 1.48 to 5.96); and

6. Educational status (education level secondary and above (OR=0.33 with 95% CI 0.14, 0.88 and 0.24 with 95% CI 0.07 to 0.55 respectively).

There was no significant difference between cases and controls with regard to knowledge about the duration of the treatment, disclosure status and cost incurred for clinic visit and distance from the HI. In addition, in order to know the independent effect of each specific variable in the prediction of defaulting, logistic regression was done using SPSS version 12.This was done to control the confounding effect the determinants may have on each other's. In the analysis the factors that remained independently associated with defaulting were employment status (AOR=2.16 with CI of 1.09to 4.22) and household income above 1000 birr (AOR=0.09 with CI of 0.011 to 0.73)

Table 7 - Variables evaluated for possible association with defaulting from ART in the three public ART sites in Addis Ababa March 2005-March 2008.

Variable	Case n=103	Control=206	*OR(95%CI)	AOR (95%*CI)	p-value
Employment status					
Employed	26	121	1	**1**	**0.024**
Unemployed	77	85	4.22 (2.45, 7.11)	**2.162 (1.108, 4.22)**	
Education					
Illiterate	14	13	1	1	
Read and write	18	11	1.27 (0.43,3.74)	1.76 (0.53, 6.44)	
Elementary	33	57	0.54 (0.23,1.31)	1,12 (0.53, 3.099)	
Secondary	29	82	0.33 (0.14,0.88)	0.70 (0.24, 2.03)	
Tertiary	9	43	0.24 (0.07, 0.55)	0.043 (0.28, 3.91)	
Marital Status					
Single	37	76	1.45 (0.82, 2.54)	1.21 (0.61, 2.41)	
Married	31	92	1	1	
Widowed	24	24	2.97 (1.48, 5.96)	1.84 (0.81, 4.21)	
Divorced	11	14	2.33 (0.96, 5.67)	2.21 (0.74, 5.90)	
Knowledge about duration of ART					
Adequate	91	205	0.001 (0.000, 263,859)	0.001(0.000, 3.8E07)	
Inadequate	5	0	1	1	
Attitudes towards ART clinics					
Positive	66	166	0.52 (0.30, 0.9)	0.73 (0.38, 1.41)	
Negative	30	39	1	1	
Average HH income/month					
<350	70	92	**1**	1	
351-500	9	35	0.34 (0.153,0.75)	0.68 (0.28,1.66)	0.45
501-1000	11	42	0.34 (0.17,0.72)	0.71 (0.28,1.72)	0.43
>1000	1	37	0.36 (0.005,0.27)	**0.09 (0.011,0.73)**	**0.025**
Family support					
Positive	51	139	0.55 (0.33, 0.91)	0.59 (0.31, 1.14)	
Negative	44	66	1	1	
Disclosure					
Disclosed	77	176	0.68 (0.36, 1.30)	0.98 (0.46, 2.41)	
Not disclosed	18	28	1	1	
Cost incurred					
Yes	85	181	1.03 (0.48, 2.19)	1.33 (0.56, 3.15)	
No	11	24	1		
Distance					
Near	78	146	1,28 (0.45,1.34)	0.83 (0.44,1.61)	
Far	25	60	1		

*OR=Mantel-Hanzhel matched Odds Ratio

6. DISSCUSSION

The high reported levels of adherence and viral suppression with ART represent considerable successes of the rollout programs across Sub-Saharan Africa. However, these data are based only on those who remain in care and under follow-up. Losses to follow-up accounted for the majority of attrition from ART treatment programmes in sub-Saharan Africa (16).

High rates of loss to follow-up would significantly limit the effectiveness of the ART and other preventative strategies. For evaluation and management of antiretroviral treatment programs, it is important to effectively to track loss to follow ups and address the pressing question of why patients drop out and what conditions will be needed to retain them.

This study shows that the over all loss to follow up rates from ART from the selected - three public ART sites in Addis Ababa for the period of 36 months is 21.4%. Even though there is a wide range of variation in retention in different ART cohorts, a recent study revealed that 25% of people starting HIV treatment programs in Ethiopia are no longer receiving treatment after two years due to lost to follow up (36).

The great majority loss to follow ups happened in the first three months after the initiation of ART and the significant risk factors associated with early loss to follow up were advanced HIV disease i.e. .WHO stage 3 and 4 disease and CD4 count below 50cells/ml which is in consistent with many studies in the SSA (31, 32).

Studies of treatment programmes in resource-limited settings found high rates of loss to follow-up. For example, in the urban primary health care setting of Lusaka, 3406 (21%) of 16 199 patients

starting ART in 2004–2005 were more than 30 days late for a scheduled pharmacy appointment. An evaluation of the HIV Drug Access Initiative of the Ministry of Health of Uganda and the Joint United Nations Programme on HIV/AIDS (UNAIDS), in which patients paid reduced prices for their medications; found that 114 (24%) of 476 patients were lost to follow-up in the first year. (20, 32).

The present study tried to trace 1499 lost to follow up patients in the congested urban situation and found out among those successfully traced large proportions of them (70%) had been died. Majority (72%) of them died while taking their ARVs regularly and the reasons of death were difficult to ascertain because most of them had died at home.

However, the study found out that about 1/3 of those traced to be deceased had also current TB and were on both anti TB and ART. Their base line CD4 count for1/3 of them was below 50 therefore, it is probable that the burden of co-morbidities and late commencement of treatment at very low CD4 counts, could have contributed to their early mortality.

Few programmes in resource-limited settings systematically assess the reasons patients are lost to follow-up, but surveys found that a substantial proportion had died. For example, among 727 patients lost to follow-up at the Lighthouse Clinic in Lilongwe, Malawi, 30% died. Another smaller study from northern Malawi investigated the fate of 253 patients lost to follow-up and reported that 50% had died. In Lusaka, Zambia also among 801 patients, traced 46% had died (18, 27, 30). A similar study, which was done in Amahara region at Feleg Hiwot hospital in Baherdar showed (29) majority of LFTU ART patients that were traced in retrospect were dead. Therefore, Patients who

are lost to follow-up can add a substantial bias to the survival estimates and risk factors for death following initiation of HAART. Specifically, they are likely to have died but, are misclassified as lost that can produces substantial bias on the outcome of HAART and suggest that death rates following initiation of HAART reported in developing countries may be underestimated.

The present study finds out a significant and worrying proportion of patients who were subsequently lost to follow-ups is untraceable. The main reason is the wrong address in the ART register. With the details obtained on the patient file at default, tracing visit the patient has resulted unknown with the given address or nobody knows that person with the given name. Either the patients did not give a correct address or the details obtained by clinic staff were insufficient or unclear.

Another cause for failure to trace could be the fact that, until recently, because the study hospitals have no any active tracking mechanisms of LTFU, so for most patients from the time of default and to the current home visit/telephone call is much longer. As different studies show (27), the longer patients stopped attending clinic appointments the more likely she/he will be untraceable. For other registered 13% lost to follow-ups contact details were completely missing or were insufficient in the patient files.

Even though the rate of untraceable found in the present study is much higher compared to other studies, this finding is common in most SSA studies. A study from Malawi tried to trace 252 defaulters through home visit and found out 28% of them could not be traced due to in correct address on the ART register. A more recent study From Mali could not find 13% LTFU among

493 because of lack of information due to incomplete patient files (30). The untraceable groups had a low median CD4-cell count and advanced HIV disease, suggesting that some may also have died.

Overall, the findings of the present study indicate that ART clinics need to ensure the address recorded for the patient is correct, updated and complete and use of effective electronic patient tracking mechanism in order to facilitate contact tracing when it becomes necessary. In the present study among the group traced to be, living physical relocation and clinic transfers accounted for 43% of those discontinuing ART, almost all reported continuation of ART at a different clinic and the majority of them at public health center and hospitals. In a similar study which was done in Johannesburg, South Africa (33) non death loss or physical relocation and clinic transfers accounted for 25% of those discontinuing ART, with >2/3 of those patients reporting continuation of ART at a different clinic. This finding can be explained by the easy accessibility of free ART service at the different levels of HI and parts of the country due to program scale up. In the current study, opting for religious beliefs, spirituality and alternative healing were among the most frequently mentioned reasons for treatment interruption. Especially the majority of them seek alternative healing from holly water. This showed that psychosocial factors unrelated to knowledge or attitude towards ART sites playing the role for treatment default. In order to ensure adherence to therapy in communities' clinics must take into consideration the psychosocial and religious practices and norms of the people. This finding is inconsistent with the study done in Nigeria where the main reasons for default among loss to follow ups include opting for spiritual/faith/alternative healing (24). A recent study, which was done on loss to follow ups at the national level, revealed that seeking alternative healing from holy water as the main reason for treatment default (36).

Another finding of the current study is the significant protective effect of employment status. The study reveals the risk of being defaulter was higher for those with out work. Even though a study about the association of employment status and default from ART is not found during the literature review ,a study from South Africa (33) on lost to follow ups also observed nearly two third of patients not returning to the clinic reported as being un employed. The present study suggests that if a person has no work or is unemployed he/she could be more likely to be non-adherent to treatment. This can be due to economical and psychosocial problems associated with unemployment and such condition may lead to attrition.

Another finding of the current study, which strengthens the pervious finding, is the significant effect of absent or low average monthly household income on treatment default. Those patients with absent or very low average monthly household income are more likely to stop treatment as compared to those who have regular and adequate household income.

To the open-ended question also, 7% of the defaulters gave lack of foods and financial constraints as a reason for default. Moreover, a recent study at a national level on reasons for loss to follow ups revealed that economical problem comprises 70% of the reasons for loss to follow up (36)

Another result found in the present study was the insignificant effect of family support as possible factor for defaulting. This finding is contrary to the expectation. Even though family support has no significant association for treatment default in this study, the effect of this factor is still very important. In the bivariate analysis, association between treatment default and family support is being observed. Studies have already confirmed that the level of support received from family

members and close social networks strongly influences individual behaviors and decisions regarding treatment (34).

 Another explanatory factor for this finding could be the national ART guideline (7) strongly recommends encouraging disclosure to family members, friends or support groups during adeherhance counseling , to spent time and to have multiple encounter with the patients ,their family and treatment supporters to explain the nature of the treatment

 These adherence strategies most likely help the majority of patients to disclose and get support from their family members or the community.

6.1. Strength and Limitations of the Present Study:

6.1.1. Strengths

- There is no sufficient information about lost to follow-ups from ART in Ethiopia. This study tried to explore and provide insight on the actual magnitude and main reasons of defaulting from ART in the urban set up.

- Clinical and socio demographic factors that are identified as predictors of lost to follow up from ART will alert the treating health professionals

- Highly qualified ART facility nurses and trained data collectors performed the data collection.

- Trained home and community-based workers performed active tracing through home visit by using the pre-tested structured questionnaires. Strict supervision was made throughout the course of data collection.

- Finally, logistic regression was done to come up with unbiased estimates

6.1.2. Limitations

- Non-randomized purposive sampling was rendered to identify the study area and a limited number of treatment facilities providing ART services in the city were included. These study areas were selected with assumption that it is convenient for the intended study with limited time and cost.

- Records of the past events might be incomplete with respect of variables that have importance for the study. For instance, it was difficult to assess the role of drug side effects on predicting loss to follow ups due to insufficient information inside the patients chart.

- Since tracing adequate portion of the defaulters was not successful, it is unknown whether the response from the small portion of the patients interviewed provides a complete and unbiased picture of the range of reasons for loss to follow up.

6.2. Conclusions

The present study is intended to determine the rate and the reasons associated with defaulting from ART and aims to come back with recommendation that ensures better patient retention strategy in the program.

Non-adherence is the most important factor for treatment failure and poor patient treatment outcome. Moreover, treatment interruption creates the development and transmission of drug resistant virus. On top of that, Patients with advanced HIV disease that lost to follow up are at increased risk of dying within relatively short time.

The key findings from this study revel that the over all recorded lost to follow up rate for the study hospitals was 21% within a period of 36 months.

The majority of patients categorized as lost to follow-ups within 3 months after the start of ART and this indicates that the first three months are the most crucial moments for better treatment outcome.

The majority of lost to follow ups that were traced in retrospect were reported dead and the main reason is for being lost to follow-ups was found to be death. Death is associated with base line very

low CD4 count, poor functional status and TB/HIV co infection. .This indicates LTFU and early mortality are the major challenges of ART program in Ethiopia as else where in SSA.

Unemployment and absence or low household income or economical constraints in general are the main determinant factors for treatment default.

The information obtained from portions of defaulters traced and interviewed reveal that many factors can contribute for treatment discontinuations, opting for religious and alternative healing, as the most frequently mentioned motives.

Clinic transfer within and out side the Addis Ababa area without informing the previous clinic staff where patients first registered is also another factor mentioned as being labeled as loss to follow up. The majority of loss to follow ups could not be traced due to wrong addresses included in the ART register.

Addressing the major concerns of patients on treatment as well as effective patient tracing mechanisms to truck those LTFU constitute among the major intervention needs.

6.3. Recommendations

1. All health institutions giving ART service should introduce effective patient tracing mechanism in order to bring patients back to therapy. This needs to be done as soon as possible, as the longer the delay the more likely it is that the patient will be untraceable;

2. ART clinics need to ensure that the address recorded for the patients is correct and updated in order to facilitate contact tracing.

3. The high mortality in lost to follow ups, with low CD4 count, WHO stage 4-disease and baseline

    Poor functional status reveals the need of starting ART before the patient develops AIDS and

    the importance of early diagnoses of HIV infection through promoting and availing HIV

    Counseling and testing in all health facilities;

4. Unemployed and those patients with financial constraints are more likely to discontinue

    treatment more than others are and such patients should identified and properly counseled at the

    start of ART and on going basis. If possible they should be linked with social networks in order

    to get economical support or to participate on income generating activities;

5. Since more patients are opting out for religious/alternative healing clinics must take into

    consideration the psychosocial and religious practices and norms of the people and should give

    ongoing education and counseling on this issue; and

6. Faith based organizations and traditional healers has to be alerted about the importance of the

    problem .Moreover they should participate more actively in educating and returning patients

    back to medical treatment.

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Annexes

8.1 Data   collection Format

Hospital name------------------------------
Code number--------------------------

De number	Name	Unique ART#	sex	age	address Sub city	Kebele	House#	Tele .Number private	contact	Date Rx started	Date Rx stopped	weight	FS	W cli sta
00														
01														
02														
03														
04														
05														
06														
07														
08														
09														
010														
012														

Super visor---------signature-----date--------

Data collector Name------signature-----------date----------------

8.2. **Structured questionnaire English version**

Addis Ababa University Medical Faculty

School of public health

Questionnaire

Reasons for defaulting from antiretroviral treatment programs from public ART sites in Addis Ababa

    01. Name of the hospital------------------

    02. Questionnaire Identification number------------

    General information for the study participants

Greetings! My name is Addis Akalu I am from A.A university Medical faculty, SPH. I would like to inform you that you and I would have a short discussion concerning this study. Before we go to our discussions, I will ask you to listen carefully what I am going to read to you about the purpose and general condition of the study and tell me whether you agree or disagree to participate in this study. I am interviewing patients who are lost to follow up from ART at-----------------hospital (*the name of the hospital will be written*). The purpose of this study is to identify the main reasons why patients are permanently drop out from anti retroviral treatment program from different hospitals in Addis Ababa and you are selected to be one of the participant in this important study. The study will be conducted through interview. The information you give us is strictly confidential and will be used only for the study purposes. A code number will identify every participant and no names will be used. If the report of the results is published only summarized information of the total group will appear

.The interview is voluntary and you have the right to participate or not to participate or to refuse at any time during the interview. Your refusal will not have any effect on services that you or any of your family members receives. However, your participation is very important to fulfill the study, which aims to design improved and effective patient follow up system that enhances patients' compliance to the treatment and ensures better patient out come for those HAART initiated in Addis Ababa public hospitals or in the other public ART sites in the country. If there are things that require clarification Please do not hesitate to ask question.

<u>Informed Verbal consent form</u>

Are you willing to participate in the study?

1. (   ) Yes, I want to participate   2 . (   ) No, I do not want to participate

Thank you!

If the study subject agrees to participate in the study, start the interview.

03. Interviewer signature certifying that the informed consent has been given verbally.

   Name------------------------- signature-------------------

   Code---------------------------

   Date-------------------------month-------------------2009

04. Result codes

1. Completed--------------3.partially completed-----------
2. Refused--------------4.other----------------
05. Cheeked by supervisor
 Name--------------signature------------- date-----------------

For further questions and clarifications please contact PI on tele#0911 405876

<div align="right">IRB-MF tele#011 553-87-34</div>

1. Name of person interviewed--------------------------------code----------

    1.1 Address, sub city-------------------------

    1.2 Kebele and house number------------------------------

    1.3 Tele.number---

2. Name of ART site --code--------

3. Treatment status of patient

    3.1. Defaulter---

    3.2. Non-defaulter---

4. If died when? /filled from informants/--------------------------------

    4.1 while on the treatment---------------------------------------

    4.2 After defaulting treatment--

5. Age of patient--

6. Sex

    6.1. Male_____   6.2 Female----------------

7. Occupation:--

8. Educational level

8.1 Illiterate------------------

8.2 Read and write----------------

8.3 Elementary------------------------

8.4 Secondary--------------------------

8.5 Above secondary ------------------------

9.What is the average monthly income of your family(in birr)?

10. What is the main reason for your treatment interruption?--------------------------

11. Do you incur costs for your clinic visit?

11.1 Yes-------------------- 11.2   No--------------------

12. If, yes for what purpose?

   12.1 Transport-------

   12.2. Laboratory services-------------

   12.3 Food and reception---------------

   12.4 Other (specify)-----------------

13. Knowledge about ART

13.1 Do you know that ART has to be taken life long?

13.1.1 Yes--------------------12.1.2 No---------------------

13.2 If yes, from where do you get the information?

----

14 Attitudes towards the ART clinic

  14.1 If you have, the choice do you prefer to go to public ART sites.

   14.1.1 Yes---------------------------   13.1.2 No----------------------------------

   14.1.3 Do not know-------------------------------

14.2 If yes why?-----------------------------------

 14.2.1 I am well cared in the ART clinic   ——————————   .

14.2.2 The center is near to me---------------------------

14.2.3 The time is convenient to me---------------------------

14.2.4 Its free of charge----------------------------------

14.2.5 Other reasons (specify)

   ——————————————————————————————

 14.3 If not why?

 14.3.2 It is far from my home----------------------------------

 14.3.3 The Opening hours are not convenient---------------------------

 14.3.4 I don't want to be seen in ART clinic--------------------------------------

14.3.5 Other reasons specify---------------------------------

15. Did you have any problem or complaints while you were on ART?

15.1 Yes_____   15.2 No---

16. If yes (Q=13.1), what problems did you have?

   ——————————————————————————————

17.did You ever stopped your treatment?

17.1 Yes   -------------------   17.2No-----------------

17.3 If yes why?

   ——————————————————

18. Did anybody called or come to your home and advice you to resume your treatment?

18.1 Yes----------------------------------

18.2 No--

18.3 If yes, then what did you do?

  ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

  ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

19. Did you get support from your family to complete your treatment?

19.1. Yes---

19.2. No--

19.3 If yes, what kind of support

  ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

  ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

20. Have you disclosed your sero status to your family?

20.1 yes------------------

  20.2   no---------------

20.3yes-------------------

20.3.1 If no why? -----------------------------------

 21.Do you want to resume your treatment?

21.1 Yes-------------------------

 Why‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

21.2 If not, why?

‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

  ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

Name of interviewer:--------------------------

 Signature:‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

8.3. Structured Questionnaire Amharic version

በአዲስ አበባ በዩኒቨርሲቲ የህክምና ፋካልቲ

የህብረተሰብ ጤና ትምህርት ቤት

በአዲስ አበባ የህዝብ የፀረ ኤች ኤ ቪ ማእከል ህክምና የጀመሩ ህሙማን ክትትል

የሚያቋርጡበትን ምክንያቶች ለማወቅ የተዘጋጀ ጥናት

01 የጤና ተቋሙ ስም--------------------

02 የመጠይቁ መለያ ቁጥር-----------------

<u>ስለጥናቱ አጠቃላይ መረጃ</u>

ስሜ .... ይባላል የመጣሁት ከ አ.አ ዩኒቨርሲቲሜድካል ፋካልቲ የህብረተሰብ ጤና ት/ ቤት ነው እኔና እስም ለአጭር ግዜ በውይይት ቆይታ ይኖረናል::

ወደ ዋናው ውይይታችን ከመሄዳችን በፊት ስለጥናቱ አጠቃላይ ሀሳብና ሁኔታ የማነበውን በጥንቃቄ እንዲያደምጡኝ እጠይቅዎታለሁ:: እንደዚሁም በጥናቱ ለመሳተፍ መስማማታችንን ወይንም አለመስማማታችንን ይገለፁልኛል::

እኔ ፀረ ኤች አይ ቪ ሕክምና---------- ሆስፒታል (የ-ሆስፒታሉ ስም ይጠቀሳል) ከጀመሩ በኃላ ክትትላቸውን ወይንም መዳህኒታችን ከአቋራጡ ህመምተኞች ጋር ነው ቃለመጠይቅ የማደርገው:: የጥናቱም ዋና አላማ ለምን እነዚህ ህሙማን ፀረ ኤች አይ ቪ እክምና በተለያዩ አዲስ አበባ በሚገኙ የመንግስት ሆስፒታሎች ከጀመሩ በኃላ ክትትላቸውን ለአንዴና ለመጨረሻ ግዜ እንደሚያቋርጡ ምክንያታቸውን በትክክል ለማወቅ ነው እና እርሶም የዚህ ጥናት ተሳታፊ እንዲሆኑ ከተመረጡት ሰዎች ውስጥ አንዱ ነዎት:: ጥናቱን የሚካሄደው በቃለ መጠየቅ ሲሆን የሚሰጡኝ ማናቸውም መረጃዎች በጥንቃቄና በሚስጥር የሚያዙ ሲሆን ልንጠ ቀምባቸው የምንችለው ለጥናት አላማ ብቻ ይሆናል:: ማንኛውም የጥናቱን ተሳታፊ በጥናቱ ውስጥ የሚለዩት በሚስጥራዊ ቁጥር ብቻ ሲሆን የጥናቱ ተሳታፊ ስም በጭራሽ ብጥናቱ ውስጥ አይጠቀስም:: ቃለመጠየቁም በፈቃደኝነት ላይ ብቻ የተመሰረተ ሲሆን በጥናቱም ለመሳተፍም ሆነ አለመሳተፍ ወይንም ጥናቱንም የማቋረጥ መብትዎ የተጠበቀ ነው:: የእርሶም በጥናቱም አለሳተፍም ማለት እርሶንም ሆነ የእርሶንም ቤተሰቦች ከጤና ተቋሙ በሚያገኙት አገልግሎት ላይ የሚያስከትለው ምንም አይነት ተፅዕና አይኖረም:: ሆኖም ግን እርሶም በጥናቱ ተሳትፈው የሚሰጡትት መረጃ የጥናቱ አላማ እንዲሳካ ይረዳል:: የጥናቱም ውጤት በአዲስአበባ እንዲሁም በተለያዩ የአገሪቱን ክልሎች ያሉ የፀረ ኤች አይ ቪ ሕክምና ተጠቃሚዎች ብቁና የተሻለ የክትትል ፕሮግራም እንዲኖራቸው ለመቅረፅ ከማስቻሉም በላይ ታካሚዎች መዳሃኒቱን በትክክል ሳያቋርጡ በመውሰድና በፕሮግራሙ ውስጥ በመቆየት የተሻለ የሕክምና ውጤት እንዲኖራቸው ይጠቅማል:: ስለጥናቱ ግልጥ ያልሆነ ነገር ካለ ጥያቄ ከመጠየቅ ወደ ሃላ አይበሉ

ከመጥይቁ በፊት የጥናቱን ተሳታፊ ስምምነት ማረጋገጫ ቅፅ

በጥናቱ ውስጥ ለመሳታፍ ፈቃደኛ ነዎት?

1.( ) አዎ እሳተፋለሁ   2( )አይ አልሳተፍም

አመስግናለሁ፦

የጥናቱ ተሳታፊ በጥናቱ ለመሳተፍ ከተስማማ ቃለ መጠይቁን ይቀጥሉ፦

03 ተጠያቂው ባለ ጥናቱ በቂ ማስረጃ ተሰጥቶት በቃለመጠይቁ ለመሳተፍ በቃል
ፈቃደኛ መሆኑን የሚያረጋግጥ የቃለ መጠይቁ አድራጊ ስምና ፈርማ

ስም_____ ፈርማ
ኮድ_____
ቀን_____ ወር_____ዓ.ም

የቃለ መጥይቁ ጠያቂ
04 የወጤቱ ኮድ
ሀ. ሙሉ በሙሉ የተሞላ_____
ለ. በከፈል የተሞላ_____
ሐ. ተጠያቂው ፈቃደኛ አይደለም_____
መ. ሌላ ካለ ይገለፅ _____
05 በተቆጣጣሪው የተረጋገጠ (መጠይቁ በትክክል መሞላቱን ለማረጋገጥ)
ስም_____ ፈርማ _____ ቀን_____

ለተጨማሪ፦መረጃ በዋናው ተመራማሪ ስልክ ቁጥር   0911405876 ያነጋግሩ

በአዲስ አበባ በዩኒቨርሲቲ የህክምና ፋካልቲ የጥናትና የምርምር አረጋጋጮ ና ፈቃጅ
ቦርድስልክ ቁጥር   011 553-87-34 ያነጋግሩ

1. የተጠያቄው ሙሉ ስም--ኮድ------------
. የተጠያቄው ስም--ኮድ------------

       (1.2) አድራሻ፤ ክ/ከተማ --------------------

       (1.3) ቀበሌ እና የቤት ቁጥር----------------

       (1.4) ስልክ. ቁ ------------------------

1. የጸሬ ኤች አይቪ ኤድስ ህክምና ማእከሉ ስም -----------------------------

2. የታካሚው የህክምና ደረጃ -----------------------

     (3.1) የጸሬ ኤች አይቪ ኤድስ የህክምና ክትትል ያቋረጠ ------------የኮድቁጥር-----
-

     (3.2)   የጸሬ ኤች አይቪ ኤድስ የህክምና ክትትል ያላቋረጠ ወይንም

በቋሚነትየሚከታተል------------------የኮድ ቁጥር----------------

3. ከሞተ፤ መቼ? / ከመረጃ አቀባዮች የተሰበሰበ)------------------

       (4.1) በህክምና ሳሉ -----------------

       (4.2) ህክምናውን ካቋረጡ በኂላ ----------------

4. የታካሚው ዕድሜ -----------------

5. ፆታ
    (7.1) ወንድ -----------------
    (7.2) ሴት -----------------

6. ስራ

(8.1) የመንግስት ሰራተኛ---------------

(8.2) አሽከርካሪ/ሾፌር/----------------

(8.3) ተማሪ----------------

(8.4) የቤት እመቤት------------

(8.5) ነጋዴ--------------------

(8.6) ሌላ (ይግለፁ) ------------------

7. የትምህርት ደረጃ
    (9.1) ያልተማረ----------

    (9.2) ማንበብ እና መፃፍ--------

    (9.3) ኤለሜንታሪ (አንደኛ ደረጃ) -----------------

    (9.4) ሁለተኛ ደረጃ ----------------------

    (9.5) ከሁለተኛ ደረጃ በላይ----------------

8. የቤተሰብዎ አማካይ ወርሃዊ ገቢ (በብር)?-------------------------

9. ወደህክምና ማህክሉ ሲመጡ የሚያወጡት ወጪ ይኖራል?

    a.   አለ----------

    b.   የለም---------

10. (ጥያቄ 10) መልሱ አዎ ከሆነ ለምን አላማ?

  11.1 ለትራንስፖርት-------------

  11.2 ለላብራቶሪ ምርመራ----------

  11.3 ለምግብ---------------

  11.4 ለሌላ ነገር(ምክንያቱ ይጠቀስ)---------------

12. ስለ የጹረ ኤች አይቪ ኤድስ ህክምና መድሃኒት ያለዎትን ግንዛቤ በሚመለከት

12.1. የጹረ ኤች አይቪ ኤድስ ህክምና መድሃኒት በሀይወት እስካሉ ወይንም ለ

እድሜ ልክ ሳይቋረጥ እንደሚወሰድ ያውቃሉ?

12.1.1 አዎን --------------------

12.1.2 አይ/ አላውቅም --------------------

12.2 .ጥያቄ(ቁ.12.1) መልሱ አዎ ከሆነ መረጃውን ከየት አገኙት?

_____

13. ስለ የጹረ ኤች አይቪ ኤድስ ህክምና ክትትል ክሊኒክ ያለዎት ዝንባሌ /እይታ/

(13.1) አማራጭ ቢኖርዎት ወደ ህዝብ የጹረ ኤች አይቪ ኤድስ የህክምና ክትትል

ማእከሎች መሄድን ይመርጣሉ?

(13.1.1) አዎ --------------------
(13.1.2) አይ /አልመርጥም/ --------------------

(12.1.3) አላውቅም-------------------

13.2) አዎ ከሆነ ለምን? --------------

(13.2.1) በ የጹረ ኤች አይቪ ኤድስ ህክምና ክትትል ክሊኒክ በጥሩ ሁኔታ እንክብካቤና ህክምና አገኛለሁ --------------

(13.2.2) ማዕከሉ ለእኔ ቅርብ ነው ------------------

(13.2.3) ጊዜው ለኔ አመቺ ነው ------------------

(13.2.4) ከክፍያ ነፃ ነው ------------------

(13.2.5) ሌሎች ምክንያቶችን ይግለፁ -------------------

(13.3) ካልሆነ ለምን?

67

(13.3.1) ከቤቴ እሩቅ ነው-----------------------

(13.3.2) የስራ ሰዓቴ ምቹ አይደለም ----------------

(13.3.3) በ የጾረ ኤች አይቪ ኤድስ ህክምና ክሊኒክ አካባቢ በሌሎች መታየትን

    አልፈልግም------------------------------

(13.3.4) ሌሎች ምክንያቶችን ካሉ ይግለፁ----------------

14. የጾረ ኤች አይቪ ኤድስ ህክምና ክትትል ላይ እያሉ ችግር ወይም ቅሬታ
አለዎት?

    (14.1) አዎ--------------
    (14.2) አይ/የለኝም------------

15. መልሱ አዎ ከሆነ (ጥ.14.) ምን አይነት ችግሮች አለዎት?

    _____

16-ህክምናዎትን / የፀረ ኤች አይቪ መድህኒትዎን አቋርጠው ያውቃሉ?

    (16.1) አዎ ------------------

    (16.2) አይ ------------------
    _____

17. ወደ እርስዎ በመደወል ወይን ወደ ቤትዎ በመምጣት ህክምናዎትን እንዲቀጥሉ
    የጠየቀዎት /የመከረዎት ሰው አለ?

    (17.1) አዎ
    (17.2) አይ/የለም

    (17.3) አዎ ከሆነ እርስዎ ምን አደረጉ?

    _____

    _____

18. መድሀኒትዎትን በየጊዜው እንዲወስዱ እና ሳያቆርጡ እነዲከታተሉ ከቤተሰብዎ

ድጋፍ አግኝተዋል?

(18.1) አዎ------------------------
(18.2) አይ-------------------
(18.3) አዎ ከሆነ፣ ምን አይነት ድጋፍ

_____

_____

19 ኤች ኤቪ በደምዎት ውስጥ እንዳለ ለመቤተሰብዎ በግልፅ አሳውቀዋል?

(19.1) አዎ---------------

(19.2) መልሱ አዎ ከሆነ ለማን? _____

(19.3) አይ---------------

(19.4) አይ/ አላሳወቁም ከሆነ ለምን? _____
----

20. ህክምናዎትን መቀጠል ይፈልጋሉ?

(20.1) አዎ ------------------------

ለምን? ----------------------------------

20.2) አይ-------------------

ለምን-------------------------

የቃለ መጠይቁ አድራጊ ስም--------------------ፊርማ-------------------------------ቀን-----------
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DECLARATION

I the undersigned declare that this thesis is my original work, has never been presented in this or any other university and that all resources and materials used herein have been duly acknowledged.

Name   Addis Akalu (MD)

Signature   _____

Place   Addis Ababa University.

Date of submission_____ _____

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

Name   Dr. Damen H/mariam (MD, MPH, PHD)

Signature   _____