ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF DETERMINANTS OF ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG PEOPLE LIVING WITH HIV/AIDS AT DEBRE MARKOS REFERRAL HOSPITAL

By
Mulugeta Tesfa(BSc PH)

Advisor:
Professor Ahmed Ali

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Assessment of Determinants of Adherence to Antiretroviral Therapy Among People Living With HIV/AIDS at Debre Markos Referral Hospital

Approved by the Examining Board

Dr. Jemal Haider _____

Chairman, Dean of School of Public Health

Professor Ahmed Ali _____

Advisor

Dr. Hailu Yeneneh _____

External Examiner

Dr.Hibret Alemu _____

Internal Examiner

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ACRONYMS

AAU - Addis Ababa University

AIDS- Acquired Immune-deficiency Syndrome

ART- Antiretroviral Therapy

ARV- Antiretroviral Drugs used for the treatment of HIV infection.

CSA- Central Statistics Agency

FGD- Focused Group Discussion

HAART- Highly Active Antiretroviral Therapy

HCP- Health care providers

HIV- Human Immune Deficiency Virus

IRB - Institutional Review Board

NGO- Non-governmental Organization

PLWHA- People Living with HIV and manifestations of AIDS

UNAIDS- Joint United Nations Program on HIV/AIDS

WHO- World Health Organization

ABSTRACT

Background: At the end of 2009, there were about 33.3 million [31.4 million –35.3 million] people living with HIV globally. About one million people live with HIV in Ethiopia. More than five million people are now receiving HIV treatment. In Ethiopia 1.1million people live with HIV at end of 2009. Total number of PLWHA on treatment as of March 2010 was 186,607 with a coverage of 64% of those in need. The advent of highly active antiretroviral treatment (HAART) has dramatically improved the prognosis for HIV-positive patients. The efficiency of antiretroviral therapy depends on a near perfect level of patients' adherence. Antiretroviral treatment adherence levels of $\geq$ 95% optimize patients` outcomes and minimize antiretroviral drug resistance.

Objectives : The objective of this study was to assess the level of adherence and its determinants for antiretroviral treatment among people living with HIV/AIDS on highly active antiretroviral therapy(HAART) at Debre Markos Referral Hospital in East Gojjam Zone.

Methods: A cross sectional survey design using both quantitative and qualitative methods was used to conduct this study. Systematic random sampling technique was used to select participants for the quantitative assessment. A total of 528 people living with HIV/AIDS and treated with highly active antiretroviral drugs were involved to examine sets of variables using an interview method and card review to address some variables.

Result : Out of the 528 participants, 312(59.1%) were females. The mean age was 36 $\pm$ 9.5 years and ranged from 18 to 75 years. The adherence level based on seven days recall self-reported dose adherence was 94.5%. Independent predictors of HAART adherence reported in this study included: residence i.e. living in urban areas was (AOR: 4.348; 95% CI: 1.725,10.960; p =0.002) times more likely to be adherent than living in rural areas, and the odds of satisfaction obtained from health change after starting ART(AOR: 6.967; 95%CI: 1.03,37.251; p=0.023) higher than odds of no satisfaction. Presence of child under their care(AOR:0.227; 95% CI: 0.103, 0.742; p=0.011) times less likely to adhere than absence of child under care and substance and alcohol users(AOR: 0.325; 95%CI: 0.11,0.951; p=0.040) times less likely to adhere than non-users. This study also showed that being away from home, busy with other things, forgetting, lack of transportation were common causes for missing of doses to the study participants.

Conclusion and Recommendation: The result of this study showed that living in rural areas and absence of satisfaction obtained from health change after starting of antiretroviral treatment, presence of children under care and substance use were negative predictors for adherence. Therefore, emphasis should be given on these factors to improve adherence.

1. INTRODUCTION

1.1. Background

UNAIDS(Joint United Nations Program on HIV/AIDS) estimates that there were 33.3 million [31.4 million –35.3 million] people living with HIV at the end of 2009 compared with 26.2 million [24.6 million– 27.8 million] in 1999 a 27% increase (1). Sub-Saharan Africa, where the majority of new HIV infections continue to occur, had an estimated 1.8 million [1.6 million–2.0 million] people in 2009 (1). The number of annual AIDS- related deaths worldwide was steadily decreasing from the peak of 2.1 million [1.9 million–2.3 million] in 2004 to an estimated 1.8 million [1.6 million–2.1 million] in 2009. The decline reflects the increased availability of antiretroviral therapy, as well as care and support to people living with H IV, particularly in middle and low-income countries; and also a result of decreasing incidence starting in the late 1990s (1).

More than five million people are now receiving HIV treatment. In 2009 alone, 1.2 million people received HIV antiretroviral therapy for the first time an increase in the number of people receiving treatment of 30% a single year (1)

In Ethiopia, HIV/AIDS was first recognized in the mid-1980s, at about the same time as in other countries in the region (2). HIV-AIDS epidemic is heterogeneous with marked regional variations (3). An estimated 1.1 million people live with HIV in Ethiopia. The total number of PLWHA on treatment as of March 2010 was 186,607 with a coverage of 64% of those in need(4) The Government of Ethiopia launched free ART in January 2005. The number of patients on ART before 2005 was only 9,000 and those were mainly paying patients (4).

Successful antiretroviral treatment is dependent on sustaining high rates of adherence. The minimum level of adherence required for antiretroviral (ARV) therapy to work effectively is 95% (5). Once treatment has started, continued monitoring and support for adherence is necessary (6).

Non-adherence to ART can vary from missing one dose of a medication to missing a single dose of all three or four medications to missing multiple doses or all doses for a day or week (7). Not observing instructions regarding dietary or fluid intake or not taking medications at prescribed time intervals also constitutes non- adherence (8).

Adherence is the term used to describe the patient's behaviour of taking drugs correctly in the right dose, with the right frequency and at the right time. A critical aspect of adherence is the patient's involvement in deciding how and when to take the drugs.

Adherence is one of the key determinants of treatment success. Poor adherence leads to virological failure, evolution of drug resistance and subsequent immunologic failure. Hence treatment adherence counselling on first clinic visit is necessary to prepare the patient in order to maximise adherence. This pre-treatment patient counselling involves counsellors, clinicians, nurses, pharmacists, families etc.(9). This study was done to supplement studies done on adherence by determining level of adherence and identifying the influencing factors in the study area.

1.2. Statement of the problem

The clinical goals of HIV treatment are optimally accomplished through consistent high-level of adherence to HAART and sustained suppression of the viral load. The most common cause of ARV treatment failure is poor adherence. There should be strict adherence to treatment and adherence to the recommended regimens should be $\geq$ 95% to avoid development of ARV drug resistance. This means that missing > 3 doses per month is associated with an increased risk of drug resistance and failure. Resistant viruses can spread and affect ARV therapy. The transmission of ARV drug resistant strains is of increasing concern in countries where ARV is widely used (10).

In Ethiopia, lost to follow up to ART service was 27% by March 2010 [3]. Hence, drug resistance and the large number of patients lost to follow up are critical challenges facing the ART program (3).

Therefore , this study can contribute by identifying the main factors that hinder adherence and based on findings it is possible to design strategies in order to maximize adherence.

1.3. Rationale of the Study

In the presence of ART, improving quality of life related to health in PLWHA is an urgent priority. Inorder to achieve this, patients` adherence to ARV combination therapy is a crucial component of successful treatment outcome.

The rationale for selecting this problem area was due to the fact that identification of determinant factors for ARV therapy, adherence amongst patients receiving ART at health facilities is so significant to prevent drug resistance which could occur due to non- adherence and to improve quality of life of HIV/AIDS patients.

There are studies in Ethiopia on ART adherence status and influencing factors. Most of them were done in other parts of the country. Little was done in the Amhara Region and no study was conducted in East Gojjam Zone. Hence, there was a need to do this research on this topic. The outcome of this study are believed helped to identify the main factors that influence ART adherence and assist designing strategies to improve adherence amongst ART user AIDS patients.

2. LITERATURE REVIEW

2.1. Magnitude of ART users

At the end of 2009, 36% (about 5.2 million) of the 15 million people in need of ART in low- and middle-income countries were receiving antiretroviral therapy(1). An additional 1.2 million people received antiretroviral therapy in 2009, bringing the total number of people receiving treatment in low- and middle income countries to 5.2 million, a 30% increase over 2008(1). Fewer people were dying from AIDS- related causes, while about 14.4 million life years have been gained by providing antiretroviral therapy since 1996 (1).

Adherence is a complex health behaviour that is influenced by the regimen prescribed, patient factors, and characteristics of healthcare providers (11). Adherence support should begin before therapy is initiated and must be incorporated into every clinic visit (11).

Ensuring good adherence and retention in care continue to be two of the biggest challenges facing antiretroviral treatment programme scale up. Good adherence to medication, to clinic visits and to pharmacy visits are very important in ensuring the best possible outcomes for patients (12). Patients who do not adhere to treatment are more likely to develop drug resistance and require more expensive second-line treatment, or will fall ill as a result of treatment failure and require hospital care (12). Very high levels of adherence (> 95%) are required for ART to be effective long term and to prevent the emergence of resistant viral strains (12). In resource-limited settings where older first-line therapies are being used, the development and transmission of drug-resistant strains of HIV will greatly limit the treatment options available (13).

2.2. Measurement Methods of Adherence of ART

No gold standard or best practice appears to exist for monitoring adherence(14). Methods of assessing adherence are self- report, pill count and clinical or biological markers. Patient self-reporting is basically subjective, but it is used as a measure to assess adherence (14) . Self-reported adherence measures (i.e.,

missing any doses in a recent period (one day, three days, seven days), which is relatively easier to assess) would be useful both in clinical management of individual patients and in monitoring adherence in patient populations (12). A systematic literature review conducted elsewhere showed that 84.6% of studies assessed adherence using patient self-reported adherence levels over a specified period (15). Adherence to ARVs can decrease over time, particularly when the patient is feeling better and decides that he/she no longer needs to take the medications regularly (14). A study showed that most adherence failures occur early in the course of treatment (16).

A study done in south west Ethiopia indicated a rate of self- reported adherence of 231(72.4%) (13). For non-adherence, reasons given for missing drugs were running out of medication/drug 9(27.3%), being away from home 7(21.2%) and being busy with other things 7(21.2%) and the rest of the reasons included simply forgetting, having no food to eat with the medication (13). There were patients missing their drug intake related to a state of well-being feeling experienced (17).

The rate of self-reported adherence from four hundred twenty seven patients was 70.8% (5). The majority (98.8%) of the study participants who reported using memory aids (18) were adherent. A study conducted in Togo showed that of the patients using a reminder, 69.4% stated using a watch and/or alarm clock to remember the time of drug intake, while 27.9% referred to parents' recall(17).

2.3 . Determinants of ART Adherence

2.3.1. Socio-demographic determinants

In a study done in India , socio- demographic indicators were not found to predict adherence behaviour (12), although some studies have found that male sex, older age, higher income and higher education and literacy correlate with better adherence (19). Adherence was higher among male patients than women (89.5% vs 57.4%). Having an HIV-positive spouse or a spouse on HAART did not positively correlate with adherence (20). Study on long- term ART adherence conducted in Sub-Saharan Africa with a prospective cohort design, reported that sex (female), undisclosed HIV status, not satisfied with support in

taking ART medicines, low level of education, living below poverty limit (<US$ 2/day) were significantly associated with non-adherence (21), (22). Non-adherence was significantly higher among unemployed respondents and among less-educated respondents with non-formal education and primary education compared to better educated with secondary and tertiary education (23).

A cross-sectional study supported by qualitative assessment conducted in Addis Ababa explored that odds of adherence among respondents who attended tertiary educational level was 5.56 higher than illiterate (24). A study conducted in Uganda , self-reported major reasons cited for missed visits were travel and financial constraints because of the long distance involved in travelling to the clinic, and forgetfulness. Other reasons included being too ill to come to clinic, depression; commitments with work or other activities and being discouraged to return because of the long delays at the clinic (25). There was association of overall adherence of ART with WHO stage, average family income, getting family support and sex (24). Most of the patients who failed to take drugs on time were in the age group of 36 to 45 years (26). Majority were either divorced, widowed or separated and had secondary or post-secondary education did not take drugs on time (26).

2.3.2. Family Related Determinants

A report from one prospective cohort study showed that the mean time on ART was twenty three months(22). Only 40% of the respondents had a formal treatment supporter(volunteer helper to AIDS patient), while 50% had friends or family members helping them to remember their medicines(21) The majority , 60% were satisfied with the support they received from family and friends (21) and another study showed that 83.1% the of respondents had family support (13). The participants commented that social support from a variety of sources (families, friends, organizations, their doctor and support groups) was an important factor in assisting them to adhere to their drug regimen and higher social support scores were associated with higher adherence (5), (18), (20). Patients who got family support were two times [2.12(1.25-3.59)] more likely to adhere than those who didn't get family support as an independent predictor of adherence(19).

But to the contrary, another study showed some patients reported that they were persuaded by their spouse and family to stop therapy, or not to seek therapy at all (12). On some occasions, parents would stop taking ART in order to concentrate on their children`s therapy if newly initiated (27).

2.3.3. Knowledge Status about ART

A study showed that good information and behavioural skills were associated with higher adherence (13). A result from a qualitative study conducted in India revealed accessing care from the public sector, were unaware of their HIV diagnosis and reported receiving medications for some other illness (12).

Most mentioned many concepts around the combination treatment with different degrees of misconceptions and lack of clarity. But most importantly, all stressed the need and importance of strict adherence, though they did not know exactly the consequences of non-adherence(25). Thirty two percent knew the benefits of the regimen before starting ART and 94.1% thought that ART had benefited them by improving their quality of life or improving their symptoms (28).

In another study all respondents had a perfect knowledge of the treatment schedule (number of tablets per dose, the number of daily intakes and the times of drug intake) (17). Most of the participants, (80%) had positive attitude towards the effects of ART on their health status and 44% believed that treatment could cure HIV and 38% were unaware of possible ART side effects (21) .

2.3.4. Disclosure Related Determinants

Lack of disclosure of HIV status within the patient`s social network was also associated with non-adherence (29). A study conducted in Cameroon, reported 88% of the participants disclosed their HIV status to at least one person and 83% declared they were satisfied by family or friends support (21).

A study conducted in north west Ethiopia showed that 85.3% had disclosed their sero-status (to family members, friends and/or neighbours) (19). Of the respondents 90.9% disclosed their HIV status to at least one person (13). But a study in Ilorin, Nigeria, indicated that majority of the respondents did not disclose their

HIV status to anybody while, 47 (18.6%) and 52 (20.6%), respectively, disclosed to their spouses and others (relatives, friends, co-workers) (20) and most participants described taking their medications in a hidden manner in order to prevent unwanted disclosure of their HIV status to others (30).

2.3.5. Alcohol and Substance use

Several factors are associated with adherence. Active alcohol or drug use has been found to be associated with lower adherence (12). One study showed that, of those who failed to adhere, 30% used alcohol. Seventy percent said they never consumed alcohol and only 0.6% admitted to ever using any social drugs (heroin, marijuana, cocaine, chat) (21).

A study conducted in Jimma indicated that only few(9.5%) were in active substance use (18) and another study also showed that only 3.8% in active substance use (28). A qualitative study in Zambia explored that most of the patients seen in the clinic denied taking alcoholic beverages (31). But with further questioning most stated that their alcohol intake was infrequent and irregular. Some participants admitted drinking alcohol and of those, over 50% had treatment interruptions as a result of forgetting to take doses after heavy drinking. Those patients still smoking, respond that their substance abuse did not lead to any discontinuation of therapy(31). Those actively using drugs took 59% of doses versus 72% for nonusers, and those drinking alcohol took 66% of doses versus 74% for non-drinkers(27).

2.3.6. Patient Health Care Provider Relationship

Initiation of ART without proper counselling by health care workers also led some people to default from their therapy (32). Counselling sessions were conducted for the most part by counsellors. Patients were generally not involved in the decision-making and this has contributed to not adhering to treatment since taking the drugs does not go in line with their lifestyle. The timing of the doses is not arranged with the patients' participation and this effectively imposes something on the patient that they are either unwilling or unable to comply with their treatment (32). In a study done in Yirgalem, almost all (98.6%) had a good relationship with and 82.1% felt they had open discussion with their doctors (28).

2.3.7. Drug regimen and side effects

Many antiretroviral medications have specific instructions such as take with food, take on an empty stomach, or take with plenty of fluids to be strictly followed to ensure the effectiveness of the drug. In one cohort study, 397 (74.1%) reported that they were required to follow these necessary instructions (33). Of those men, 71% reported always following the instructions. Only 24 men reported that they followed the instructions half the time or less. However, 92 men (23%) noted that their instructions conflicted among the drugs within their regimen (34). Most of the men with lower adherence had missed a prescribed dosage during the last four days (19.7%) (24). Studies showed the linear relationship between an increasing number of ART related side effects, fear of side effect and feeling sick or ill at that time and non-adherence (13), (17). For the dose, schedule and food adherence indicator, using herbal medicines for HIV was associated with lower adherence (5). Patients with more antiretroviral doses per day adhered less well (27).

A metha-analyis study showed that food-related restrictions i.e. inability to take medications on an empty stomach, and greater adherence when eating well, were associated (15). Side- effects were experienced by 209 (52.3%) of the patients at baseline. However, after 3-months follow up period only 78 (20.4%) reported having side effects. Twenty eight (7%) of the study subjects at baseline were hospitalized after they started HAART. Of those, 24 (88.9%) were hospitalized at least once; the rate being two times higher among non-adherent than adherent individuals (18).

3. CONCEPTUAL FRAME WORK OF ADHERENCE

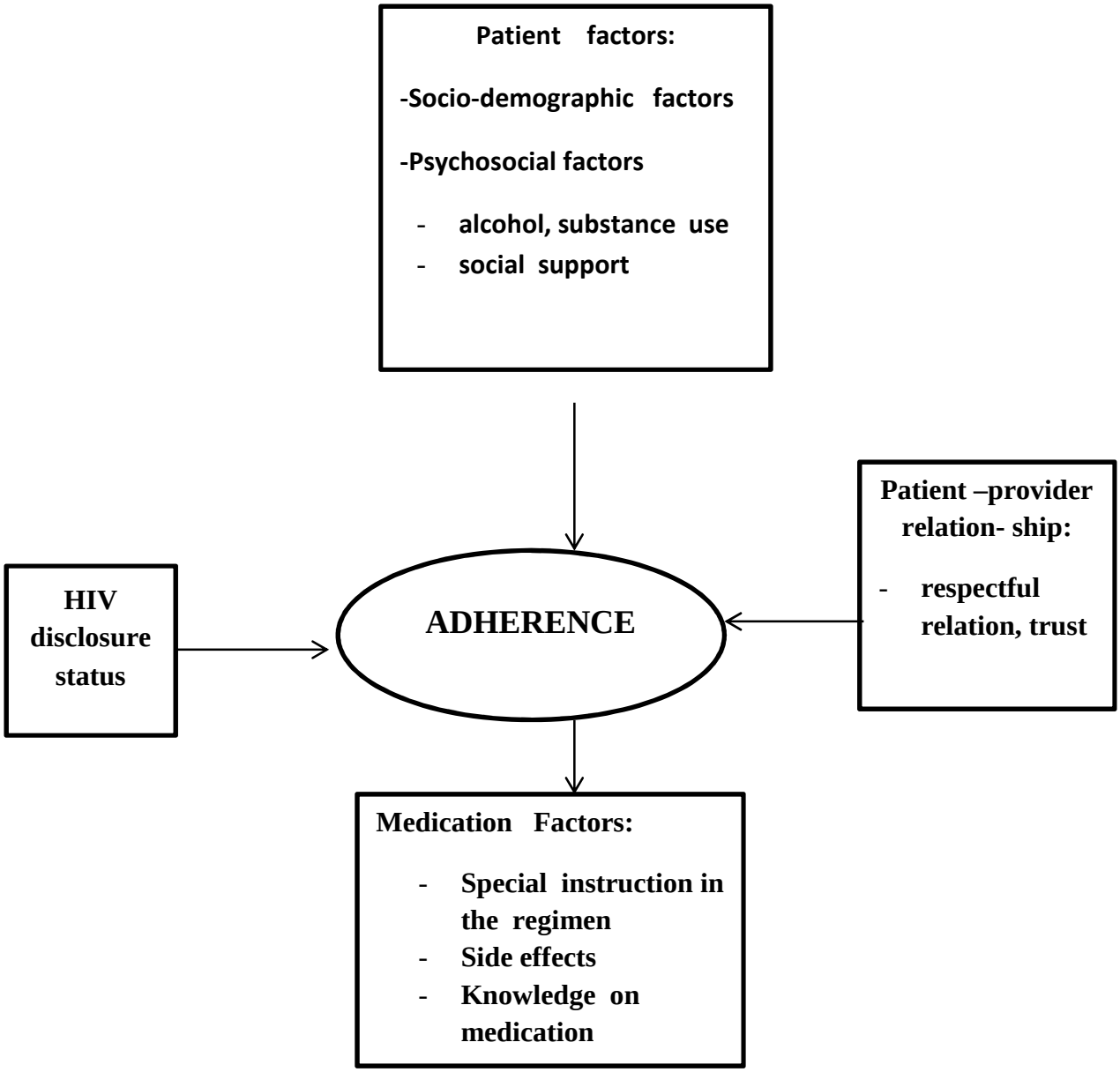

Figure 1: Factors that influence ART adherence.

4. OBJECTIVES

4.1. General Objective

- The main objective of this study was to assess the current ART adherence status and its determinant factors among people living with HIV/AIDS (age ≥ 18 years) attending ART clinic.

4.2. Specific Objectives

- To assess the current adherence status to antiretroviral therapy.
- To identify determinant factors for ART adherence.
- To assess the association between adherence and quality of life from the perspective of the treatment.

5. METHODOLOGY

5.1. Study Area

The study was conducted at Debre Markos Referral Hospital particularly in ART clinic from January 01 up to January 30, 2012. Debre Markos is the capital of East Gojjam Zone, Amhara Region, North West Ethiopia. It is situated 300 km from Addis Ababa. According to the 2007 CSA report, the total population in the Zone was 2,152,671 [33]. In the Zone there were two hospitals (one district and one referral hospital), 93 health Centers and 385 health posts . Debre Markos Referral Hospital is under the Amhara Regional Health Bureau and serves for about 3.5 million people, including the neighbouring woredas from others Zones. In the Hospital, ART was initiated in September 2006, and up to July 30 2011, 2317 adult patients were on ART. Of those, 992 were males and 1325 were females. There were 268 children (<18 years) on ART.

5.2. Study Design

A cross sectional study with quantitative and qualitative components used to assess adherence status and its determinants among HIV-infected persons on ARV therapy.

5.3. Population

5.3.1. Source Population

The source population constituted all people living with HIV/AIDS (PLWHA) who had follow up in Debre Markos Referral Hospital.

5.3.2. Study Population

All People living with HIV/ AIDS who were on highly active anti-retroviral treatment (HAART) at Debre Markos Referral Hospital ART Clinic whose ages were $\geq$ 18 years at the study time.

5.4. Sample Size Determination

For the quantitative study

The sample size was calculated using single population proportion formula. It was calculated using the 72.4 % proportion (72.4 % of respondents considered to be adherent) which was reported from a study conducted in south west Ethiopia [13]. This prevalence was used to calculate the sample size. A precision of 4% and with 95% confidence level was considered.

$$n = \frac{z(\alpha/2)^2 \, p(1-p)}{d^2}$$

Where

n = the desirable calculated sample size

Z(α/2) = Critical value at 95 % level of significance (1.96)

p = Proportion of HIV/ AIDS patients who adhere to ARV treatment

1-p = q= Proportion of HIV/AIDS patients who do not adhere to ARV treatment

α = Type one error (0.05)

d= Acceptable marginal error (precision of measurement)

p= 0.724

q= 0.276

d= 0.04

$$n = \frac{(1.96)^2 \times 0.724 \times 0.276}{(0.04)^2}$$

= 480

The calculated sample size was 480 which after adding 10% for non-response rate gave an overall sample size of 528.

For the qualitative study

For the focus group discussion (FGD), participants who ful filled the inclusion criteria were selected based on purposive sampling.

In this study, six focus group discussions were conducted and each had eight participants overall 29 females and 19 males participated and each FGD took 30-35 minutes. This number of FGDs were determined after we assured that there was saturation and redundancy of information with those FGDs. Six in-depth interviews were also conducted with key informants (health professionals); three females and two male nurses and one female health officer who were working in the ART clinics. Interviews were conducted using open ended questions. Both the focus group discussions and in-depth interviews were conducted by the principal investigator.

5.5. Sampling Procedures

5.5.1. Sampling method

The study area was selected by purposive sampling method.

5.5.2. Sampling technique

The study participants were selected from a list of patients in the registration using systematic random sampling technique. The interval "K" was used to select participants among patients from the sampling frame . It was identified by dividing the total number of patients (P) who had follow up during that study period to the required sample size i.e. K= P/s . when the selected interval was absent the next subject was included .

Lottery method was used to identify the first unique ART number, as a starting point to select study subjects.

5.5.3. Sampling frame

The sample frame was the list of PLWHO who were on ART in the registration.

5.6. Inclusion and Exclusion Criteria

5.6.1. Inclusion Criteria

PLWHA who were on ART and whose ages were ≥ 18 years.

5.6.2. Exclusion Criteria

Those PLWHA on ART whose ages were < 18 years , unable to hear, unconscious and mentally disabled.

5.7. Study Variable

5.7.1. Independent variables

The independent variables were socio-demographic factors, socio-economic status, social support, alcohol and substance use, herbal medicine use , patient provider relationship, disclosure and knowledge on ART.

5.7.2. Dependent variable

Adherence to HAART among PLWHA.

5.8. Data Collection, Processing and Analysis

5.8.1. Data Collection Method

Both quantitative and qualitative methods were employed. For the quantitative data, a structured questionnaire was developed after reviewing relevant literatures for data collection. The data collection instrument was pre-tested before the actual data collection. Face to face interview was employed and also to address few questions patients` records were reviewed. The questionnaire contained information on socio-demographic (age, sex, occupation, marital status, educational level), socio-economic variables (income), social support, active substance and alcohol use, disclosure of HIV sero-status, use of memory aids , regimen related variables (dosing schedules and frequency, diet related instructions and side effects), adherence to treatment information. Health professionals working in the ART clinic were trained to collect data and the collected data was checked by trained supervisors and the Principal Investigator daily.

Qualitative data were collected by the principal investigator from FGDs of patients and in-depth interview, with health professionals who were working in the ART clinic using open-ended semi-structured questionnaire. The investigator moderated the discussions, recorded each discussion and finally transcribed data from the audio record.

5.8.2. Data Processing

Quantitative data was edited, cleaned, coded and entered into Epi- info window version 3.3.2 and analysed using SPSS- for windows version 16.0. Descriptive statistics i.e. frequencies were run to check for outliers. For the qualitative data, each session was recorded by tape recorder after getting consent from the participants discussed and summary was written for each discussion.

5.8.3. Data analysis

Descriptive statistics was done to assess basic client characteristics. Chi- square test and their p-values at the level of significance of 5% were used to assess statistical associations between dependent and independent variables. Odds ratios (OR) and their 95% confidence interval were used to look into the strength of association between the dependent and independent variables. Bivariate analysis was done to determine presence of statistically significant association between explanatory variables and the outcome variable. All explanatory variables that had association with the outcome variable in bivariate analysis at $p \leq 0.200$ were included in the final model and multivariate logistic regression model was constructed with adherence and the independent variables to identify the predictors.

Qualitative data was gathered using audio tape record and notes from the FGDs and in-depth interview. The investigator transcribed it to English word for word by listening the tape recorder several times and main concepts were identified, summarized and analysed using verbatim analysis.

5.9. Data Quality Management

To assure quality of the data, the questionnaire were pre- tested on PLWHA (5% of the sample size 528 i.e. 26 patients) at Debre Markos Health Center who were on ART and no significant amendment was made. The interviews were conducted in private rooms to keep confidentiality and ease clients. Training was given for the supervisors and data collectors before the data collection. The overall activity was controlled by the principal investigator . All completed questionnaires were examined for completeness and consistency each day by the principal investigator and supervisor.

5.10 Operational Definitions

1. **Adherenc**e – the extent to which a client's behaviour coincides with the prescribed regimen. It means taking the correct dose of drugs at the correct time and in the correct way(1)

2. **Adverse effect: -** an unwanted effect caused by the administration of drugs. (2)

3. **Highly Active Antiretroviral Therapy (HAART)** :- the name given to treatment regimens used to aggressively suppress viral replication and progress of HIV disease. The usual HAART regimen combines three or more different drugs.(3)

4. **ART-unit** :- A unit in hospitals responsible for counselling, investigating, and treating HIV infected persons with antiretroviral drugs.

5. **Self-reported time adherence :-** where a person said to be time adherent, always follow scheduling instructions, otherwise non-adherent. Patients' self-report of whether any antiretroviral medication had been skipped on the previous day, the previous three days and the previous seven days before the interview was assessed. (1)

6. **Self-reported dose adherence:-** A person is said to be dose adherent when he/she took $\geq$ 95% of the prescribed doses correctly, otherwise non-adherent (self-reported dose adherence).(!)

7. **Combination Therapy**- Treatment of HIV infected people with three or more antiretroviral drugs.

8. **Quality of life** :- Quality of life is a multi-dimensional concept, but in this study, quality was measured in terms of client ability to do his/her daily activities as before.

5.11. Ethical Consideration

The ethical concern of this study was maintaining the confidentiality of the study participants. Ethical clearance was obtained from the Institutional Review Board (IRB) of Addis Ababa University, School of public Health. After obtaining ethical clearance from IRB of Addis Ababa University , Debre Markos Referral Hospital was informed about the objective of the study through a support letter from AAU, School of Public Health. Written permission was obtained from the Hospital administration before starting data collection. Informed consent was obtained from study participants who were interviewed during the data collection period and also they were informed about the purpose of the study, as they have full right to refuse, withdraw or completely reject part or all of their participation in the study. To keep the confidentiality of the patients, personal identifiers were not included in the data collection format (only unique ART number was used).

5.12. Dissemination of Study Findings

Findings of this study will be communicated to concerned bodies, like AAU School of Public Health, East Gojjam Zonal Health Department and Debre Markos Referral Hospital. In addition, findings will be presented in seminars and symposium as well as published in journals to access others.

6. RESULTS

6.1. Results of the Quantitative Study

Socio-demographic Characteristics

A total of 528 adult PLWHA participated in this study. Out of those study participants, 312 (59.1%) were females. The largest number of the participants , 211(40%) were in the age group 25-34 years and 172(32.6%) in age group 35-44 years**(**Table 1). The mean (SD) age of the respondents was 36(9.5) years, ranging from 18-75 years. The majority of the participants 238(45.1%) were married, and those divorced and separated 140(26.5%), widowed 87(16.5%) and the rest 63(11.9%) never married. Almost all participants were Amhara 524(99.2 %) by ethnicity. The largest number were urban dwellers 431(81.6%) and 97(18.4%) lived in rural areas. Most of the participants were Orthodox Christians 498(94.3%) while Muslims were 23 (4.4%) and others 7(1.3%). Regarding educational status, 162(30.7 %) illiterate, 52(9.8%) able to read and write, elementary and secondary level 216(40.9%) and tertiary 98(18.6%). One hundred fifty two (28.8%) were unemployed, government employees114(21.6%) and merchant and petty traders 116(22%, house wife 51(9.7%), private organization employees 32(6.1%), farmers 35(6.6%), pensioned 25(4.7%), and the rest were students 5(0.5%). The majority of the participants 278(52.7%) had monthly income $\leq$ 420 Birr, 135(25.6%) had 421-999 Birr and 115(21.8%) had monthly income $\geq$ 1000 Birr. The mean monthly income was 626.50 ETH Birr. Three hundred eighty one(72.2%) had monthly income less than the mean monthly income . The median monthly income was 400.00 ETH Birr.

Table 1: **Socio -demographic characteristics of PLWHA on ART at Debre Markos Referral Hospital, January 2012.**

Characteristics		Frequency	Percent (%)
Sex			
	Male	216	40.9
	Female	312	59.1
Age			
	18-24	31	5.9
	25-34	211	40.0
	35-44	172	32.6
	45-54	92	17.4
	≥55	22	4.1
Marital status			
	Single	63	11.9
	Married	238	45.1
	Divorced	125	23.7
	Separated	15	2.8
	Widowed	87	16.5
Ethnicity			
	Amhara	524	99.2
	Others	4	0.8
Residence			
	Urban	431	81.6
	Rural	97	18.4
Religion			
	Orthodox Christian	498	94.3
	Muslim	23	4.4
	Others	7	1.3
Educational status			
	Illiterate	162	30.7
	Read and write	52	9.8
	Primary level and Secondary level	216	40.9
	Certificate and above	98	18.6
Occupational status			
	Government employee	114	21.6
	Private employee	32	6.1
	Merchant (including petty traders)	116	22.0
	Farmers	35	6.6
	Pension	25	4.7
	House wife	51	9.7
	student	3	0.5
	unemployed	152	28.8
Income	≤ 420	278	52.7
	421-694	104	19.7
	695-999	31	5.9
	≥1000	115	21.8

Social Support

Out of 528 study participants, 305(57.8%) reported that they had supporter (Table 2). Regarding sources of their support, 158(51.8%) from family, 76 (24.9%) from NGO, and from their friends 52(17%) and the rest from relatives 47(15.4 %). Regarding the type of support ; 150 (49.2%) obtained financial /material support, 71(23.3%) Information/advice, 201(65.9%%) health care support. Of the 305 who had support, 227(74.4%) responded that they were satisfied with the support provided and 78(25.6%) were not satisfied. Among the respondents, 429 (81.3%) have their own children and of those 351(81.8%) have children at present under their care.

Table 2: Social support for PLWHA on ART at Debre Markose Referral Hospital, January 2012.

Characteristics	Frequency	Percent(%)
Have social support (n=528)		
Yes	305	57.8
No	223	42.2
Source of support (n=305)		
Family	158	51.8
Friends	*52*	17
Relatives	47	15.4
NGOs	76	24.9
Type of support		
Financial/material	150	49.2
Advice/Information	71	23.3
Health care	201	49.2
Satisfaction from support		
Yes	227	74.4
No	78	25.6
Have children (n=528)	429	81.3
Yes	99	18.7
No		
Presence of child under care (n=429)		
Yes	351	81.8
No	78	18.2

Knowledge and Attitude on ART

Among 528 respondents, 394 (74.6%) had knowledge / information about HIV/ AIDS before their illness(Table 3). And similarly 276 (52.3%) heard about ARV drugs before their illness. The sources of their information included; 437(82.8%) from health personnel, 165(31.2%) radio, 156(29.5%) TV, 27(5.1%) from newspaper, 33(6.3%) their families, 34(6.3%) friends and 53(10%) from those who were taking the ARV drug.

Of the 528 study participants, 518(98.1%) knew the number of tablets that should be taken from each ARV drug at each dosing time and 8(1.5%) did not know, 2(0.4%) were not sure whether they were correct or not . Five hundred sixteen (97.7%) knew the consequences of non –adherence to ART and only 12(2.3%) did not know. Five hundred seven(96%) ever thought their susceptibility because of non- adherence and 9(1.7%). Five hundred eight(96.2%) believed that they need to take their ARV drugs throughout their life time , 5(0.9%) did not believe and the rest 15(2.8%) were not sure whether they need to take the drug throughout their life time or not.

Two hundred twenty (41.7%) recognized side effects of ARV drugs and 308(58.3%) did not. From those 220 who faced side effects, 77 (35%) had vomiting, 45(20.5%) headache ,89 (40.5%) GI intolerance, 110(50%) rash, 87(39.5%) depression, 28(12.7%) delirium and 23 (10.5%) had diarrhoea (Figure 1). The measure they took when those side effects occurred, 186(84.5%) consulted their health care providers immediately, 24(10.9%) continued until their next appointment date , 9(4%) stopped drugs immediately and only one person decided to stop the drug completely. Five hundred twenty two (98.9%) participants reported that their daily doses should not be missed and 6(1.1%) did not know. Among the participants, 508 (96.2%) knew that they can be protected from AIDS related diseases by proper taking of their ART and only 7(1.3%) did not believe on this and 13(2.5%) did not know whether ART they can or cannot be protected from AIDS related diseases . Five hundred seven (96%) believed that they were taking the best drug for their illness but 13(2.5%) did not believe and the rest 8(1.5%) did not know whether they were taking best drugs or not.

Table 3: **Knowledge and attitude of PLWHA on ART at Debre Markos Referral Hospital, January 2012.**

Characteristics		Frequency	Percent (%)
Knowledge/information gained about HIV/AIDs			
	Before illness	394	74.6
	After Illness	134	25.4
Knowledge/information gained about ART			
	Before illness	276	52.3
	After illness	252	47.7
*Source of information on ART:	Health personnel	437	82.7
	Friends	33	6.2
	Television	156	29.5
	Radio	165	31.2
	News paper	27	5.1
	From those who take ARV drugs	53	10
	Know number of tabs to be taken Yes	518	98.1
	No	8	1.5
	Not sure	2	0.4
Do you know consequences to non-adherence of ART?			
	Yes	516	97.7
	No	12	2.3
Perceived susceptibility to non-adherence	Yes	507	96
	No	9	1.7
	Missing	12	2.3
Believe taking best drug for your illness	Yes	507	96
	No	13	2.5
	Do not know	8	1.5
Adverse effect (side effect)	Yes	220	41.7
	No	308	58.3
Measures taken when side effects occurred	consulted	186	84.5
	Continue until appointment	24	10.9
	Stopped immediately	9	4
	Stopped completely	1	
Daily doses should not be escaped.	Yes	522	98.9
	No	6	1.1
ART prevents AIDS related diseases	Yes	508	96.2
	No	7	1.3
	Don't know	13	2.5
Believe that ART should be taken throughout life time :	Yes	507	96
	No	13	2.5
	Don`t know	8	1.5

*since it was a multiple response question , the sum is different from 100%.

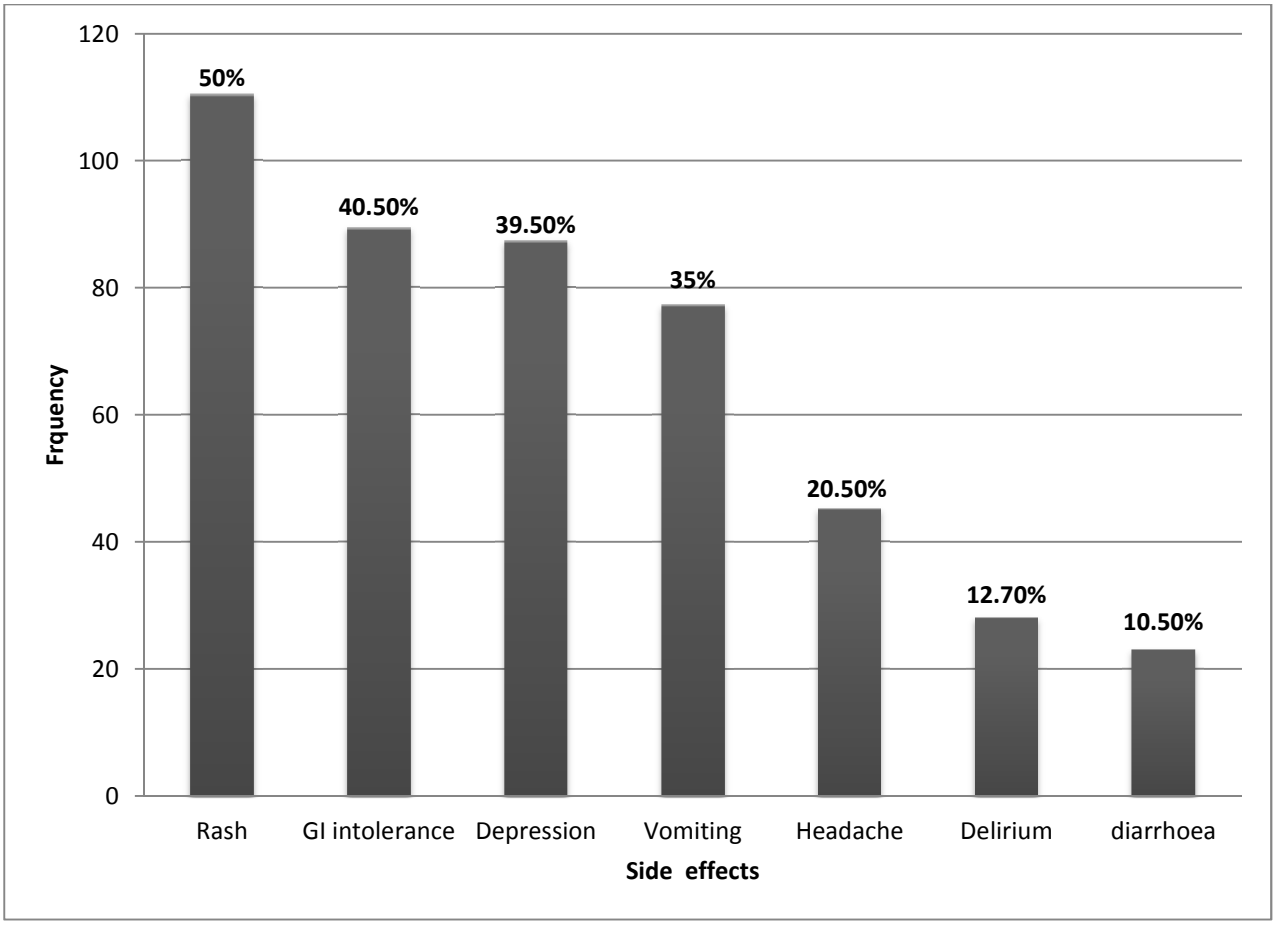

Figure 1: Side effects of ARV drugs experienced by PLWHA at Debre Markos Referral Hospital, January 2012

Disclosure of HIV sero-status

Most of the participants, 479(90.7%) had disclosed their HIV sero- status to at least one person(Table 4). Out of those who disclosed , 260(54.3%) disclosed to their partner and 176(36.7%) to children, 180(37.5%) to parents , 191(39.8%) to bothers/sisters, 126(2.3%) to relatives, and 181(37.7%) to friends. And from those who disclosed their HIV sero- status, 428(89.4%) believed that disclosing helped them to adhere with their treatment. Only 51(10.6%) responded it was not helping for their adherence.

Three hundred seventy eight (71.6%) participants reported that they had partner and from those who had partner, 216(57.1%) had HIV positive partner(concordant result), 64(16.9%) responded that their partner`s HIV sero – status was negative (discordant result) and 32 (8.5%) reported the partner was not tested and the rest 66(17.5%) responded that they did not know whether their partner was tested or not. From the two hundred sixteen

those who had HIV positive partner, 154 (71.3%) partners were on ART and 62(28.7%) did not start ART(Table 4).

Table 4: Disclosure status of PLWHA on ART at Debre Markos Referral Hospital, January 2012.

Category		Frequency	Percent (%)
Disclose HIV status	Yes	479	90.7
	No	49	9.3
*Disclosing to:	Partner	260	49.2
	Children	176	33.2
	Parent	180	34.1
	Sister/brother	191	36.1
	Relatives	126	23.9
	Friends	181	34.3
Disclosing helps to adhere n=479	Yes	428	89.4
	No	51	10.6
Partner HIV status n=378			
	HIV positive	216	57.1
	HIV negative	64	16.9
	Not tested	32	8.5
	I don`t know	66	17.5
Partner on ART n=216			
	Yes	154	71.3
	No	62	28.7

* Disclosure has multiple response, hence the sum is >100%.

Adherence Status

Out of the 528 study participants, 506(95.8%) responded that they did not miss their drug a day before the interview but 22 (4.2%) had missed (Table 5). Five hundred five(96.2%) reported that they did not miss doses in the last three days whereas 20 (3.8%) reported that they missed taking their drug in the last three days and 499(95.5%) reported that they did not miss their drug in the last seven days but 29(5.5%) missed their drug in the last seven days (Figure 2).

Regarding the number of doses missed, 501(94.9%) did not miss any of the doses, 19 (3.6%) missed one dose and 8(1.5%) missed two doses yesterday. Three days recall; 503(95.3%) did not miss any of the doses, 14(2.7%) missed one dose, 5(0.9%) missed two doses and 5(0.9%) missed six doses in the last three days. When we see the seven days adherence, 499(94.5%) did not miss any of the doses in the last seven days and 14(2.7%) had missed one dose, 5(0.9%) missed two doses, 1(0.2%) missed three doses, 2(0.4%) missed six doses 1(0.2%) missed nine doses , 1(0.2%) missed 10 doses and 5(0.9%) missed 14 doses. Concerning to time adherence, only 4(0.8%) report that they never followed the given specific time schedule and 496(93.9%) followed regularly their given specific time schedule(time adherent) and 28(5.3%) report they followed their specific time schedule irregularly.

Out of the 528 participants, 420(79.6%) responded that their drug intake had a special instruction(i.e. with food or water) and 92(17.4%) reported their treatment did not have special instruction but 16(3%) did not know whether it had a special instruction or not.

Among those 420 who reported that their drug intake had a special instruction, 5(1.1%) reported that they never followed the instruction and 318(75.7%) followed their special instructions regularly and 97(23.1%) followed irregularly. From 528 participants, 49(9.3%) responded that they had missed their drugs during the last weekend and 479(90.7%) did not miss in the last weekend.

Four hundred eighty five (91.9%) used at least one type of reminder aids to remind their drug taking time, 43(8.1%) did not have any type of reminder. Among those who used reminders, 414(78.4%) used alarm, 44(8.3%) reminded by family, 3(0.6%) by pill box, 2(0.4%) written schedule, 22(4.2%) used other methods of reminders whereas 43(8.1%) did not have any type of reminder. Four hundred thirty six (82.6%) were not taking medication

other than their ARV drugs while 92(17.4%) were taking other medication in addition to their ARV drugs.

Regarding the motivation that encouraged them to adhere to their ART, the majority 432(81.8%) were motivated by improvement of their illness with ART, 183(34.7%) reported because of increasing body weight, 169(32%) improving CD4 cell count, 218(41.3%) fear of consequences of non-adherence, 93(17.6%) support from family and relatives, 183(34.7%) support from health personnel, 312(59.1%) because their functional status was improved.

Out of 528 participants, 199(37.7%) had been on ART for more than three years , 195 (36.9%) for one to three years , 78(14.8%) for six to twelve months and the rest 56(10.6%) had been for less than six months duration. The mean and duration on HAART was three months (Figure 3).

Table 5: Adherence status of PLWHA on ART at Debre Markos Referral Hospital, January 2012.

Category	Frequency	Percent(%)
Take medication at specific time		
Never	4	0.8
Regularly	496	93.9
Irregularly	28	5.3
Special instruction	420	79.6
Yes	92	17.4
No	16	3.0
Don`t know		
How often you follow special instructions:	5	1.1
Never	318	75.7
Regularly	97	23.1
Irregularly		
Doses missed in last weekends	49	9.3
Yes	479	90.7
No		

Reminders used		
Pill box	3	0.6
Written document	2	0.4
Watch bell/alarm	414	78.4
Family	44	8.3
Others	22	4.2
Don`t have any	43	8.1
Source of motivation to adherence		
Health personnel	183	34.7
Improving functionality	312	59.1
Support from family	93	17.6
Fear of non-adherence consequence	218	41.3
Get better from illness	432	96
CD4 increment	169	32
Weight increment	183	34.7

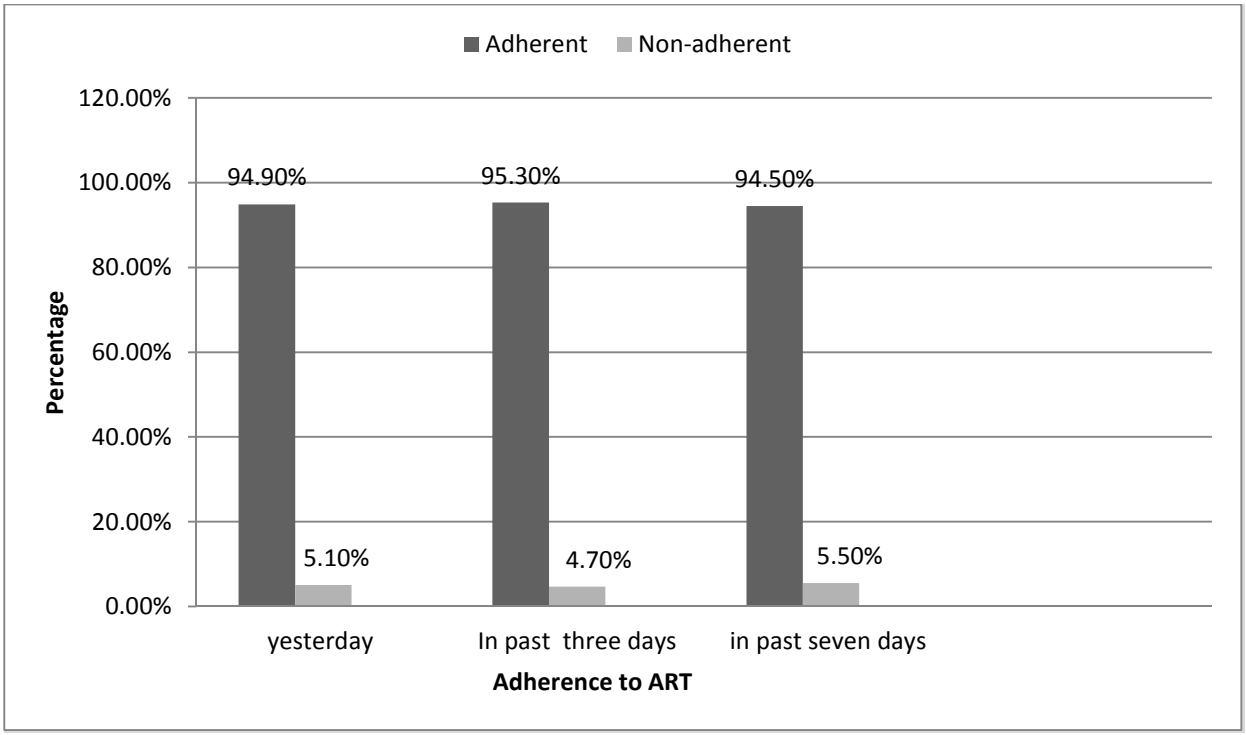

Figure 2 : Self-reported adherence for doses among PLWHA on ART at Debre Markos Referral Hospital, January 2012.

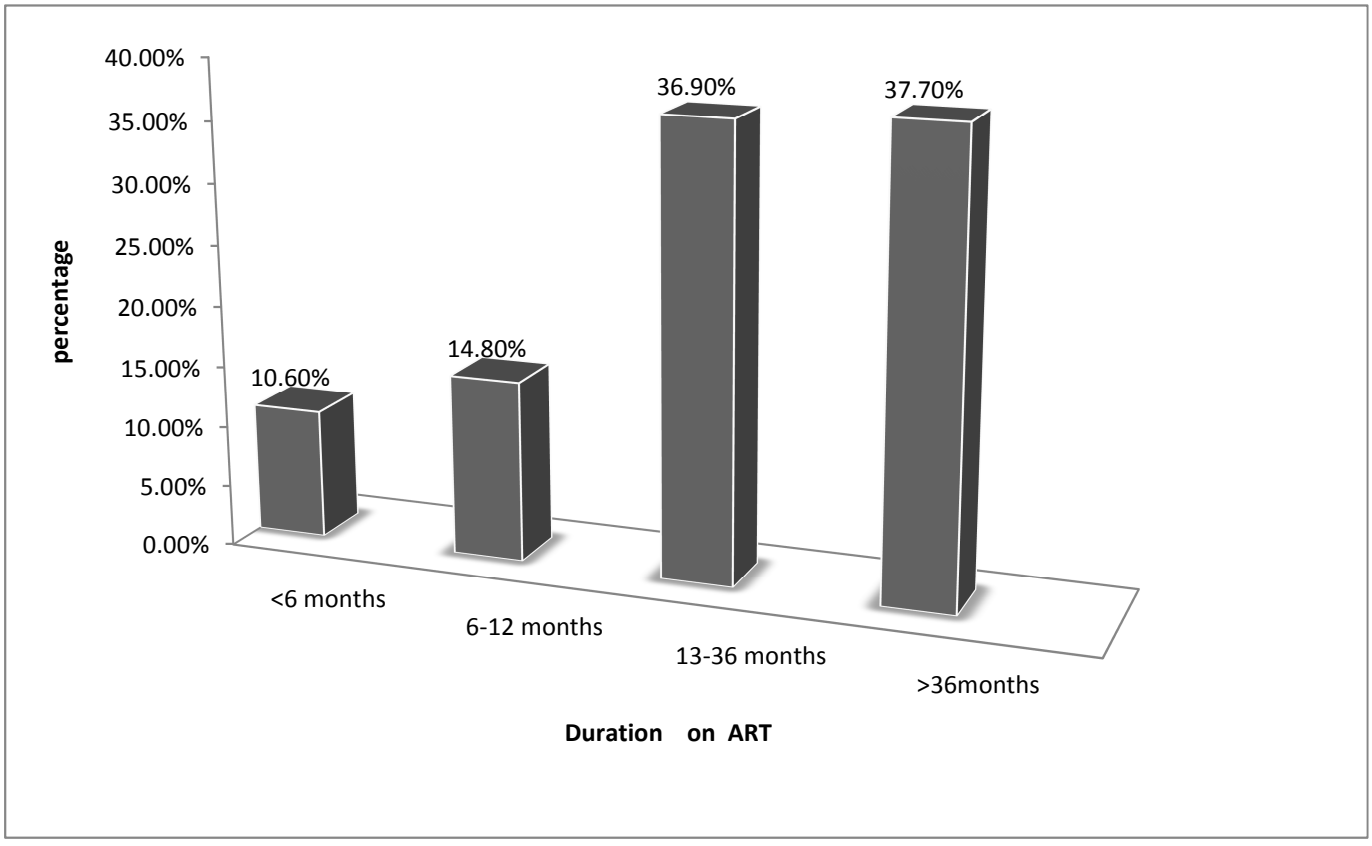

Figure 3: Duration of PLWHA on ART at Debre Markos Referral Hospital, January, 2012

Reasons for missing doses within a month

When we looked at reasons for missing doses within a month , out of 528 participants, 43 (8.1%) reported being away from their home, 35(6.6%) missed because they were busy with other duties, 35(6.6%) reported forgetting, 17(3.2%) said they had run out of medication (Figure 4). Lack of transportation 12(2.3%), holly water 12(2.3%), depression 11(2.1%), alcohol 9(1.7%), fasting 9(1.7%), current illness 7(1.3%) and fear of side effects 5(0.9%) were also reasons for missing their doses since the last one month (including the last three days)..

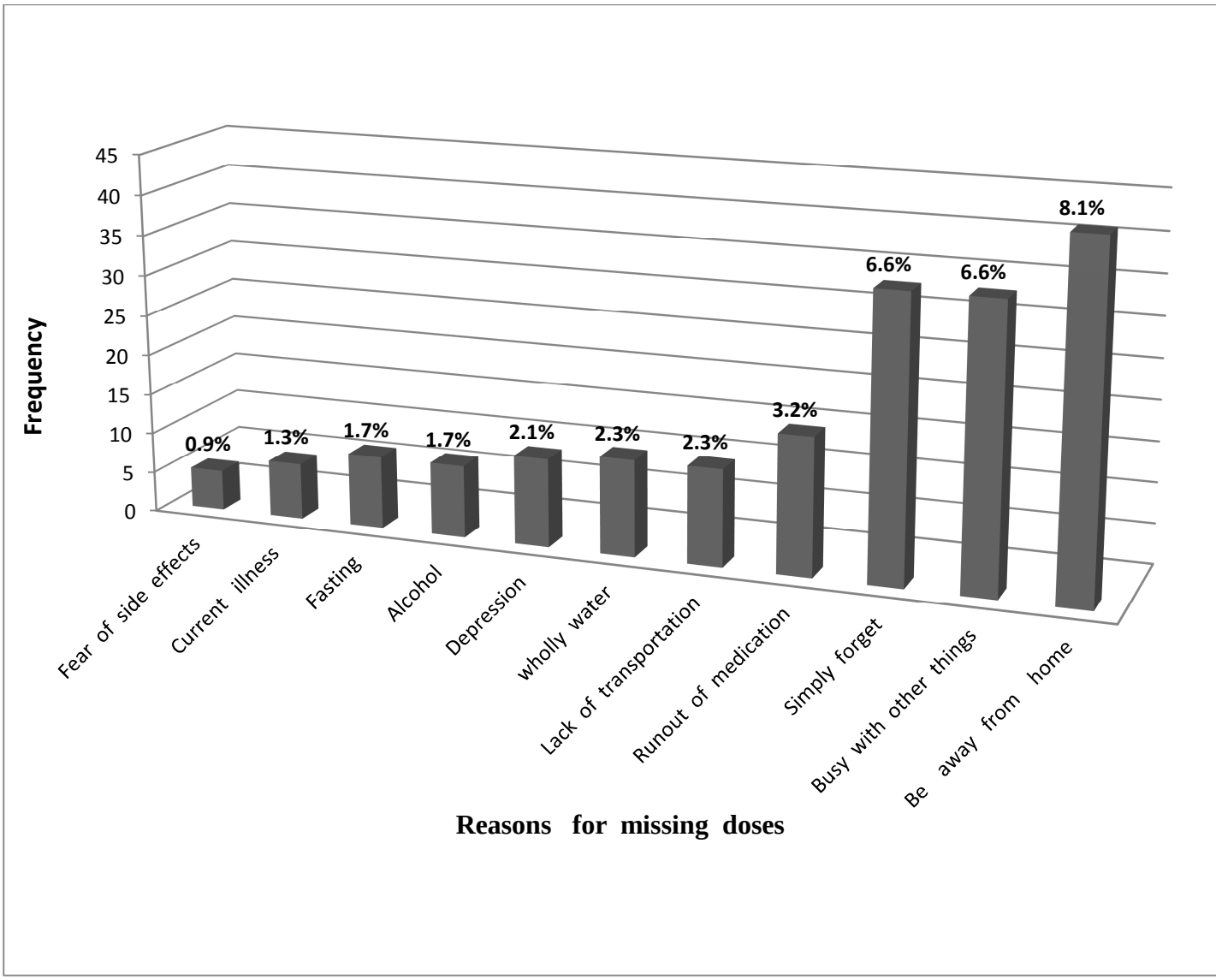

Figure 4: Reasons for missing of doses for PLWHA on ART at Debre Markos Referral Hospital, January 2012.

Alcohol and substance use

Most of the participants, 469(88.8%) were not active substance users, 59(11.2%) had history of active substance use(Table 6). Out of those who had history of active substance use, 56(94.9%) alcohol users, and only 1(1.7%) respondent was chat user and 2(3.4) were cigarette users. But no one reported on hashish use.

Regarding the frequency of substances used, 4(6.8%) reported they used substances regularly and 55(93.2%) used substances irregularly and 9(15.3%) missed their drug when they took substances but 50(84.7%) did not miss their drug when they took substances.

Out of the nine who missed their drug when they took substances, two of them reported that they missed taking drugs always when they took the substances and six of them responded that they missed drugs sometimes when they took substance and the rest three did not give response how often they missed their drugs while they were taking substances. Out of the 59 substance users , 11(18.6%) planned to give up taking substances early (soon) and 30(50.8%) planned to stop through time and the rest 18(30.5%) were not sure whether they would stop or not in the future.

Table 6: Alcohol and substance use of PLWHA on ART at Debre Markos Referral Hospital, January 2012

Category	Frequency	Percent (%)
Have history of active substance use		
Yes	59	11.2
No	469	88.8
Types of substances		
Alcohol use	56	94.9
Cigarette	2	3.4
Chat	1	1.7
Hashish	0	0
Frequency of substance use		
Regularly	4	6.8
Irregularly	55	93.2
Dose miss after substance use		
Yes	9	15.3
No	50	84.7
Frequency of missing after substance use:		
Always	2	22.2
Sometimes	6	66.7
No response	1	11.1
Plan to stop substance use		
Early soon	11	18.6
In the future	30	50.9
Not sure	18	30.5

Patient-health care providers relation

The largest number of participants, 517(97.9%) mentioned that the relationship with their health care providers was based on respect and trust(Table 7). Only 10(1.9%) reported that they did not get respect and attention during their visit. One participant did not respond on this issue. Out of the 528 respondents, 507(96%) were satisfied with the service they obtained from their health care givers, but 21(4%) were not satisfied. Regarding the frequency of visiting their health care providers, 169(32%) visited every month, majority of the participants 278(52.7%) visited every two months , 76(14.4%) every three months and 5(0.9%) had variable visiting period. Five hundred five (95.6%) were comfortable with their appointment dates and the clinic(rooms).

Table 7: Relation between PLWHA on ART and their health care providers at Debre Markos Referral Hospital, January 2012.

Response Items	Frequency	Percent (%)
Patient-health personnel relationship		
With respect	517	97.9
Don`t give attention	10	1.9
No response	1	0.2
Satisfactied with health personnel service		
Yes	507	96
No	21	4.0
Visiting frequency		
Every month	169	32
Every two months	278	52.7
Every three months	76	14.4
Variable	5	0.9
Comfortable with date and place of visit		
Yes	505	95.6
No	23	4.4

Treatment outcomes

The health status of the respondents at the time of the study was assessed using treatment outcomes such as WHO disease stages, CD4 count before and after treatment and health change gained after ART.

Five hundred eight (96.2%) were satisfied with health change they attained after starting ART and only 20(3.8%) were not satisfied (Table 8). The reasons they mentioned for their satisfaction included; 449(88.3%) being able to work, 236(46.5%) reduced hospitalization, 138(27.2%) weight increase, 157(30.7%) reduction of fever, 63(12.4%) reduced frequency of diarrhoea. The largest number of the participants , 435(82.4%) did not have history of hospital admission and 93(17.6) had history of hospitalization within a year.

Based on the review of patient records, 33(6.2%) were at stage I, 61(11.6%) at stage II, most of the participants, 371 (70.3%) started their ART at stage III of WHO disease classification and the rest 63(11.9%) at stage IV (Table 8). Five hundred twenty(98.5%) were on first line regimen treatment and only 8 (1.5%) were on second line regimen.

The mean and median weights before starting ART was 49kg and 50kg respectively. Similarly the mean and median weight after starting ART was 55kg.

Table 8: Treatment out comes of PLWHA on ART at Debre Markose Referral Hospital, January 2012.

Category	Frequency	Percent(%)
Satisfaction with health change after ART Yes	508	96.2
No	20	3.8
Health changes obtained after ART		
Being able to work	449	88.3
Reduced hospitalization	236	46.5
Weight increment	138	26.9
Reduced fever	157	30.7
Reduced diarrhea	63	12.4
History of hospitalization within a year Yes	93	17.6
No	435	82.4
WHO staging at initiation		
Stage 1	33	6.2
Stage 2	61	11.6
Stage 3	371	70.3
Stage 4	63	11.9
Current line of regimen First line	520	98.5
Second line	8	1.5
Mean weight before ART 49kgs		
Mean weight before ART 50kgs		
Mean and median weights after ART 55kgs		

Out of 528 participants, 273(51.7%) were able to work, 139(26.3%) were only ambulatory and 116(22%) bed-ridden before starting their treatment(Figure 5). Most of the participants, 508(96.2%) reported that they were able to do their work after starting treatment, 14(2.7%) were ambulatory and only 6(1.1%) were bed-ridden

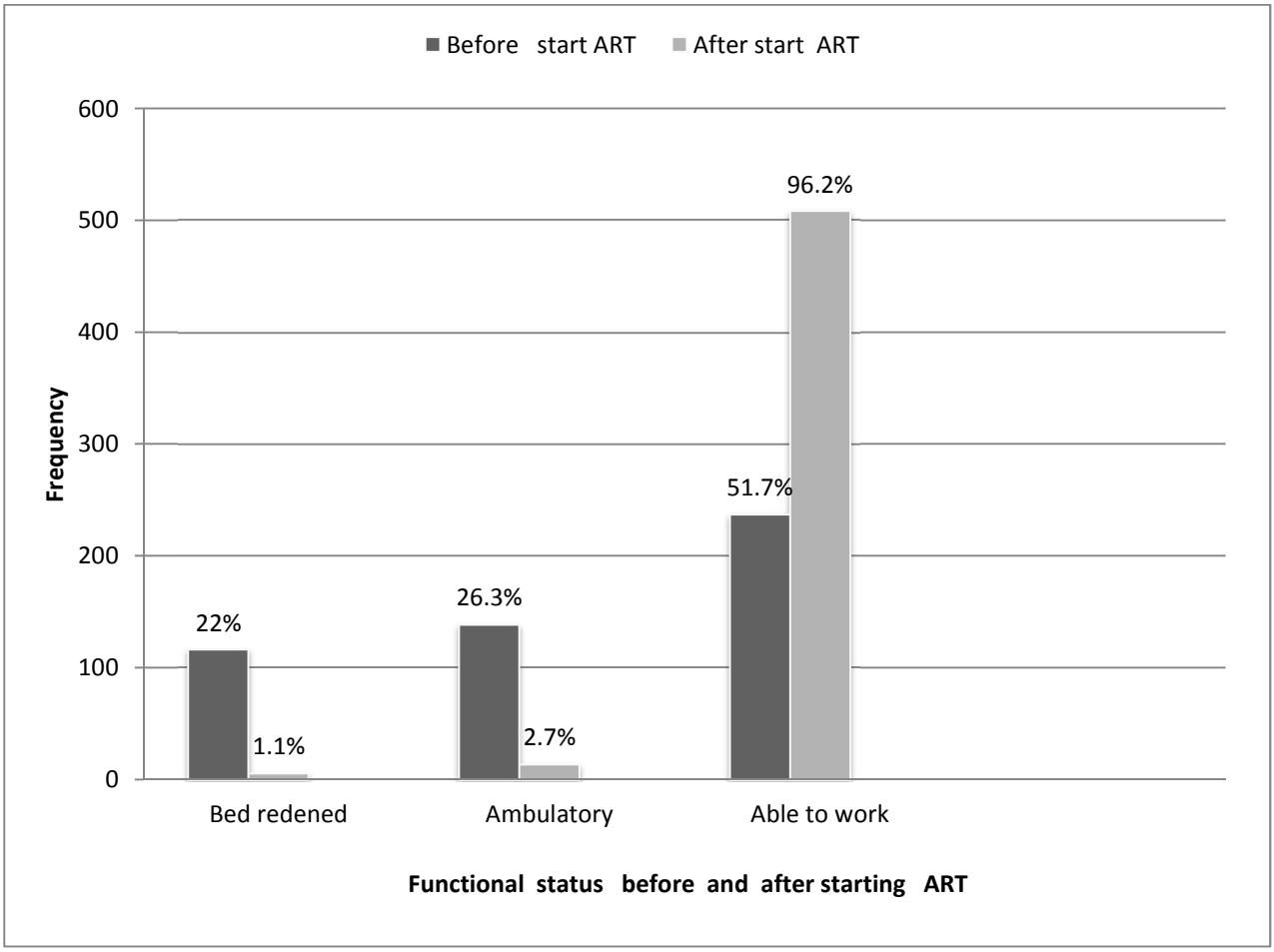

Figure 5: Functional status of PLWHA before and after initiation of ART at Debre Markos Referral Hospital, January 2012.

The records reviewed showed that majority of participants 403(76.2%) started ART treatment at CD4 count <200 cells/mm^3, 125(23.8%) at 200 - 350 cells/mm^3 (Figure 6). The mean and the median CD4 counts before ART were 150 and 136 cells/mm^3 respectively with ranges from 2 to 619 cell/mm^3. The CD4 count after initiation of ART; most of them 218(41.3%) had CD4 cell count >351 cells/mm^3, 161(30.3%) had CD4 cell count 200-350 cells/mm3 and 91(17.2%) had <200 cells/mm^3 whereas 58(11%) did not have new CD4 cell count since they had less than six months duration of treatment. The mean and median CD4 counts after ART were 358 and 337 cell/mm^3 respectively ranges from 17-985 cells/mm^3 (Figure 6).

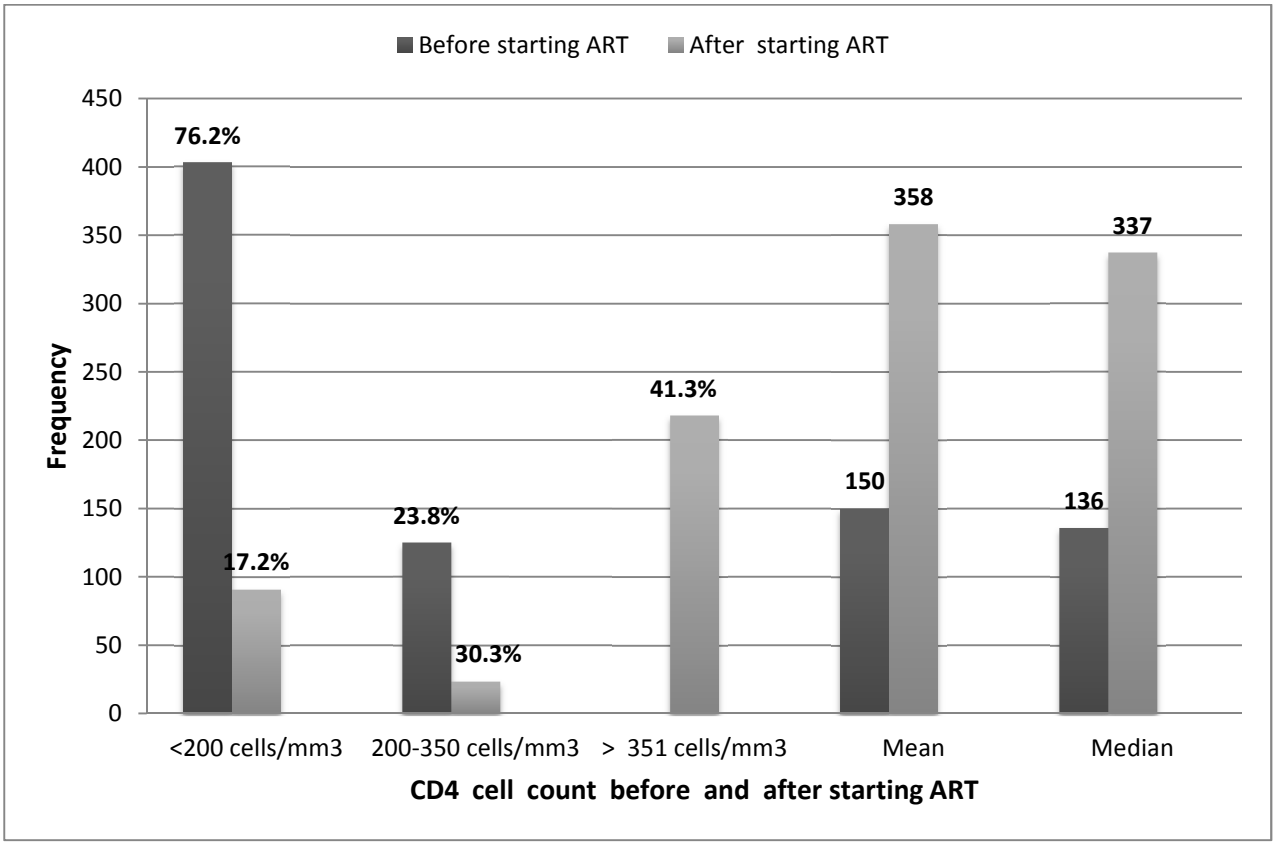

Figure 6: CD4 cell count of PLWHA before and after initiation of ART at Debre Markos Referral Hospital, January 2012.

Table 9: Shows the crude ORs and p-values for selected variables identified as determinants of adherence, which were significantly associated with the dependent variable in the bivariate analysis. The variables that showed significant association with adherence in the bivariate analysis at $p< 0.05$ were residence ($p =0.002$), substance use ($p=0.001$), believe ART should be taken throughout life time ($p=0.008$), presence of child under care ($p=0.011$), satisfaction obtained from health change after ART [$p=0.038$] but side effects of ARV drugs[$p=0.061$], partner HIV-sero status[$p=0.115$], duration on ART[$p=0.115$]. But variables that were not found to be statistically significantly associated with adherence at $p< 0.005$ included: relation with their health providers, disclosure, social support, know consequence of non –adherence and perceived their susceptibility, and all variables included under socio demographic.

The odds of being adherent was four times more likely among urban than rural patients. The odds of being adherent was 0.247 times less likely among substance users than non-users. The odds of being adherent was three times more likely among those who satisfied from health change obtained after ART than who did not satisfy. The odds of being adherent was two times more likely among who had positive partner than those who had negative partner.

Table 9: Factors affecting adherence to HAART; results from bivariate analysis on ART at Debre Markos Referral Hospital, January 2012.

Variables		COR	95%C.I	P-value
Residence				
	Urban	**4.014**	**1.861,8.657**	**0.000**
	Rural	**1**	**-**	**-**
Substance use				
	Yes	**0.247**	**0.107,0.573**	**0.001**
	No	**1**	**-**	**-**
Believe ART be taken life time				
	Yes	**4.830**	**1.503,15.517**	**0.008**
	No	**1**	**-**	**-**
Satisfaction with health change gained after ART				
	Yes	**3.997**	**1.081,14.783**	**0.038**
	No	**1**		**-**
Side effect of ARV drug occurred				
	Yes	**0.484**	**0.226,1.035**	**0.061**
	No	**1**	**-**	**-**
Presence of child under care	**Yes**	**2.965**	**1.247,7.049**	**0.014**
	No	**1**	**-**	**-**
Duration of HAART				
	≤1year duration	**1**	**-**	**-**
	>1year duration	**0.535**	**0.246,1.165**	**0.115**
Partner result	**Positive**	**2.204**	**0.825,5.882**	**0.115**
	Negative	**1**	**-**	**-**

COR= crude odds ratio **CI= confidence interval**

Table 10: show variables significantly associated with ART adherence in the bivariate analysis at P< 0.05 and variables with p< 0.20 were also checked again in multivariate logistic regression. The variables that were found to be associated with adherence in the bivariate analysis and remained significantly associated with adherence in the final model of binary multivariate logistic regression included: residence(p =0.002), presence of child under care(p=0.011), substance use[p=0.04] and satisfaction obtained from health change after starting ART[p=0.023].

Table 10: Logistic regression model that predict adherence to HAART in multivariate analysis at Debre Markos Referral Hospital, January 2012.

Variables		AOR	95%C.I	P-value
Residence	**Urban**	**4.348**	**1.725,10.960**	**0.002**
	Rural	**1**	**-**	**-**
Substance use				
	Yes	**0.325**	**0.111,0.951**	**0.040**
	No	**1**	**-**	**-**
Believe ART be taken life long				
	Yes	**1**	**-**	**-**
	No	**0.596**	**0.123,2.880**	**0.520**
Satisfaction with health change gained after ART				
	Yes	**6.961**	**1.301,37.251**	**0.023**
	No	**1**	**-**	**-**
Side effect of ARV drug occurred				
	Yes	**0.573**	**0.223,1.474**	**0.248**
	No	**1**		
Presence of child under care		**0.277**	**0.103,0.742**	**0.011**
	Yes	**1**	**-**	**-**
	No			
Duration of HAART				
	≤1year duration	**1**		
	>1year duration	**0.535**	**0.193,1.489**	**0.231**
Partner result	**Positive**	**3.879**	**0.830,18.123**	**0.085**
	Negative	**1**	**-**	**-**

AOR= adjusted odds ratio

6.2. Results from the Qualitative Study

6.2.1. In-depth Interview

All informants reported that adherence level of patients to ARV drugs in the hospital can be taken as very good. The reasons they gave were: decreasing defaulters, the marked reduction in morbidity and mortality.

Almost all of them assessed their patients` adherence by self- report method(i.e. asking patients whether they missed medications or not). Informants mentioned reasons why their patients missed their doses. Some of the most common reasons reported were ; being away from their home, busy with routine duty, fear of stigma, family separation (e.g. divorce especially when discordant result occurred), lack of support, lack of transportation and to some extent holly water and fasting. The respondents also said that almost all patients` had good knowledge and positive attitude towards their medication. They reported that their patients knew the types of medications and the time to be taken.

All informants reported that there was a good relationship between them and their patients and they interact with each other like a family member. All informants expressed discomfort on the rooms where the service was delivered because they were narrow and no sufficient waiting area for the patients. However, they did not have effect on clients` adherence. But they thought that both patients and themselves were at risk of acquiring infections like tuberculosis. One informant reported that most of the government employed patients were uncomfortable on discontinuation of weekend clinic service. Because weekends were convenient for them since they did not ask permission from their organization especially for those who came from other districts and those who did not disclose their HIV sero- status to their immediate supervisors.

6.2.2. Focus Group Discussion(FGD)

The FGDs showed that most of the participants mentioned different reasons for missing of their doses like being away from home, being busy with other things, feeling healthy, alcohol taking, herbal medicine and some reported that they did not want others to know.

A 37-year old male respondent said that " recently I restarted my treatment after I defaulted for the past six months since I felt that I was healthy and started herbal medications to be free from HIV. The traditional healer treated me by giving medication in the form of steam for three consecutive days in the morning and

evening. But from time to time I became weak and seriously sick and hence I came back again to this hospital. In addition to this, I have a habit of drinking alcohol and chewing chat and most of the time when I was taking those I missed medication".

Most of the participants reported that they faced side effects of ARV drugs, like headache, rash, delirium, insomnia, nausea , vomiting and GI discomfort at the initiation of the treatment. Despite these side effects , almost all participants reported that they never stopped their medication; rather they immediately consulted their health care providers.

Participants mentioned that combined medications decreased pill burden and it made easier for their drug intake and that also encourages them to adhere better than previous times when many tablets were taken.

A 35-year old female who started her ART seven years back said " During the previous years I was taking three tablets in the morning and three tablets in the evening and that was challenging for me since taking that many tablets per day was difficult; and in addition to that awareness of people was not as good as today and there was fear of disclosure; I was taking tablets especially in the office only when it was convenient for me not to be seen by friends. But now it is combined as one and even I can swallow it with my saliva most of the time if I am in office".

Almost all of the participants stated that their quality of life has changed after starting ART. They witnessed that there is reduction of morbidity, physical and social dependency and perceived having good future.

A female respondent reported that " before starting ART, I was seriously ill and bed-ridden, my body ulcerated and extremely wasted, but now I am doing my usual duties normally and able to support my family, teach my children and I can say that ART is our life".

A 60- year old male respondent also said "even though I was not seriously ill, I was very disappointed and hence I did not like to work as previous since I felt I am on the way of dying; I never thought that I can live up to now. But after starting ART with the help of professionals, my mind has changed and now I am doing my usual activities with a good motivation and full of future".

Almost all participants reported that the relationship between them and their health care providers was based on mutual respect and trust and satisfied with the service they obtained.

Some of the participants mentioned some points that may affect their adherence, like quality of information given at the time of ART initiation (unnecessary exaggeration and frustrating information), loose follow up counselling from professionals for those who had been on ART for long period of time and discontinuation of weekend clinic service.

A 47-year old male respondent mentioned that " *in order to encourage adherence, especially at the time of ART initiation, the quality of information given by professionals shall not be frustrating. Rather information should be motivating to start ART because during my first counselling session, I was advised that it is better not to start the treatment than missing doses. At that time, I was very discouraged and I decided even to take the drugs that were given after one week".*

A 38-year old female respondent who has been on ART for nine years said " counselling should also be continuous for persons like me who have been on follow up for years. Because in this clinic what I have observed is that if we follow the treatment for long time and if we are assumed to be educated much attention is not given".

Some participants reported that previously they could collect their medication in the weekend and that was very comfortable especially for those who are employed because no need to ask permission. But currently, weekend service was interrupted and becomes challenging for some of them who came from other woredas and for those who undisclosed their HIV sero-status to their immediate supervisors.

7. DISCUSSION

The efficacy of antiretroviral therapy depends on a near perfect level of patients' adherence. Antiretroviral therapy adherence levels of ≥ 95% optimize patients` outcomes and minimize HIV drug resistance (13).

In this study, HAART adherence was assessed through patient's self-report method and adherence was considered for those participants who adhered to their dose ≥ 95% and doses covered below 95% considered as non-adherent. The assessment of the adherence level by self –report seems to be an acceptable method in Africa and more common since it is easy and cost effective. A systematic literature review conducted elsewhere (15) showed that 84.6% studies assessed adherence using patient self-reported adherence levels over a specified period. This method has, however some limitations (the length of interview, the subjectivity of patient statements). The fact that the interviewers were known to the patients, that they were technical staffs of the hospital and patients may be afraid of being criticized for their poor adherence by them can make them overestimate their adherence level. Therefore this should be considered in the interpretation of this study findings.

Findings of this study showed that socio–demographic characteristics were not found to be significantly associated with adherence, except that of residence in which the odds of being adherent was four times higher in urban residence than rural residence and it was statistically significantly associated with adherence to ART (p=0.002, 95% CI = 1.725,10.960 and AOR= 4.348). This finding was consistent with studies done elsewhere(27,29,35) which showed that residence was significantly associated with adherence. A study conducted in South Africa revealed that adherence among urban residents was found to be almost three times greater than that of rural residents (5) . Some self- reported adherence studies showed that age under 35 years, being female, having formal education (higher education status) were negatively and statistically significantly associated with adherence to ART (36) and lower levels of education, living below the poverty limit (US$ 2/day) were associated with higher adherence (37) and, adherence was higher in males than females patients (P < 0.01) (21,22) and older age was found to be significantly associated with adherence (20,29) and monthly income (33).

Occupation, income and educational levels were significantly associated with adherence to ART (15,21,38). There was also a study that showed no association was observed

between non-adherence to ART and gender, age, marital status, educational level and place of residence(39).

Our study showed that the majority of participants , 57.8% had support. Of these, 74.4% satisfied with the support they received, and this was higher compared to that in Sub-Saharan Africa 60%(21). Family was source of support for 51.8% of participants. On the contrary, study done in India observed, some patients reported that they were intimidated by their spouse and family to stop therapy, or not to seek therapy at all (12). Our study did not show significant association between social support and adherence. This was similar to finding of a cross-sectional study conducted in Addis Ababa and Debre Zeite(23) . It is also in agreement with study conducted in Sub Saharan Africa (27) that showed those who had more social support were no more adherent than other patients and similarly study done in Togo(17). There was a study that showed that patients who had family support were two times more likely to adhere than those who didn't (13). This difference might be due to the fact that in our study, adherence was measured in terms of dose adherence but in the previous study, it was measured based on overall adherence (i.e. dose, time and food adherence) used. Even though our study failed to show association, this finding should not be misinterpreted to suggest that social support was not a means to improve adherence, because the odds of those supported was (X^2 =1.11) times higher than the non-supported. This study showed, presence of child under their care was statistically significantly associated with adherence to ART (AOR=0.227, P=0.011). This was consistent with the study that showed a better adherence to HAART was observed among the respondents, who had – no a child under their responsibility (40).

This study revealed that most of the participants had a good knowledge and positive attitude towards ART. Those who ever thought their suitability were more adherent than those who did not(X^2=2.14)and those who perceived that they are taking best drug for their illness were more likely to adhere(X^2 = 1.87). This was in agreement with the studies conducted in Togo (17) and Rwanda (41) in which nearly all (94%) believed ART was very effective. Result of our study showed that those participants who did not believe ART should be taken throughout their time (AOR=0.596; 95%CI=0.123,2.880) were less likely to adhere than those who believed and this was similar to findings of studies conducted elsewhere (36,40).

The result of this study revealed that most of the participants, 90.7% disclosed their HIV sero- status to at least one person. It was higher compared to studies done in Nigeria where 60.5% of the respondents failed to disclose their HIV status to anybody(20) and in Botswana 69% of patients kept their HIV status a secret from their families(37). This difference in magnitude could be due to time factor, i.e. the other studies were done years back when stigma was high as compared the present study. But it was similar with studies that showed 90.9% (13) and 82.7% (19) disclosed their HIV results. This was because these studies were done recently. Our study did not show significant association between adherence and disclosure, similar to finding of a nationally representative cross-sectional study that was conducted in Ruanda (41). A study conducted in Australia showed that those who had disclosed their status to close friends were more likely to report difficulty taking ART than those who had not disclosed their status (35). But there were studies that showed disclosure was significantly associated with better adherence (21,29,42). The possible explanation for this difference could be due to the difference in methodology because we used cross-sectional study design while those studies that showed association were used follow up study design. Finding of this study showed that those who had HIV positive partner were three times more likely to be adherent than those whose partner tested HIV negative (AOR=3.897;95%CI: 0.830,18.123). There was a study which showed having an HIV-positive spouse or a spouse on HAART did not positively correlate with adherence(20). This may be related to the high rate of nondisclosure of HIV status among those in the previous study.

The adherence rate in our study was assessed based on the seven days recall of self – reported dose adherence and it was 94.5%. This was similar to a study conducted in south west Ethiopia 95% (13) and Ruanda 94% (43) and higher when compared to studies in Nigeria (44%, 54%), Togo (62.2%) , Botswana(70.8%) and United State 71% (adherent in a month) adhere by patient self-report adherence with 95% of prescribed doses(17,20,27,33,37) respectively. The mean adherence rate of a patient was 84.62% (38) and 82.3% in North west Ethiopia (19).

Result of this study revealed that 93.9% of the respondents were time adherent and 75.7% food adherent and which was similar with study conducted in south west Ethiopia with 79.9% time and 89.7% food adherence (13).

This study explored reasons of participants for missing their doses. These included: being away from home, busy with other things, forgetting, run out of medication, lack of presentation and others. Although the percentage was low in our study, reasons for missing doses were similar with other study findings (12, 27, 43).

In our study, only 11.2% of the participants reported that they had history of active substance use(alcohol, cigarette and chat) and from those, only 9(12.3%) missed their drug when they took substances. This was similar to that of a study conducted in south west Ethiopia, where 7.2% of the participants took at least one type of substance (13), but it was very small compared to a study done in Zambia where over 50% had treatment interruptions as a result of forgetting to take doses after heavy drinking (31). Our study showed those who used alcohol were less likely to adhere than non-users and it had a significant association with adherence(AOR=0.325; 95%CI=0.107,0.573). It was supported by studies done elsewhere(27, 41, 43).

This study showed that 91.9% of the participants used at least one type of memory aid to take their medication at specific time, but there was no significant association with adherence. This was similar with study that showed number the of reminder used by the patient was weakly related with adherence (22).

Our study findings revealed that 97.9% of participants had good relationship with their health care givers, based on mutual respect and trust and 96% were satisfied with the health care providers service. This was in agreement with the study conducted in Botswana (37) in which 96% had good relation with health care providers and 94.4% were satisfied with the health care providers service (19).

Quality of life is a broad concept but in this study quality of life assessed in terms of clients ability to do their daily activities as before (better health condition they obtained after starting ART). This study showed that majority of the respondents, 96.2% were satisfied with better health change they obtained after starting ART. Satisfaction obtained after starting ART was significantly associated with adherence. This was consistent with study done in North West Ethiopia, where 98.2% of the respondents thought that HAART had benefited them by improving their quality of life or improving their symptoms (19) and 73% agreed that antiretroviral medications improved the quality of people's lives (27), a prospective cohort study conducted among children in South Africa, where the vast

majority of caregivers, 93% believed that ART medication was improving their child's health (41).

This study showed that most of the participants, 70.3% started their ART at stage III of WHO disease classification and this was higher than that of a study done in Ethiopia(13). Our finding also showed that 76% started ART treatment at CD4 count < 200 cell/mm^3 and it was similar to another study in Ethiopia[13], where 71.1% had a CD4 count of ≤ 200 cells/mm^3 at the start of treatment. Patients with higher CD4 counts and better perceptions of their health are likely to have witnessed greater improvements in their health as a result of taking ART (5).

8. STRENGTHS AND LIMITATIONS OF THE STUDY

8.1. Strengths

- An attempt was done to obtain the largest possible sample size to increase the precision.
- Applying both quantitative and qualitative methods to the study increases the reliability of the finding.

8.2. Limitations

- Since the study was conducted only at a single health facility, the results may not be generalizable to other areas .
- Using only one method of measurement i.e., Self-report might over estimate adherence, since it is exposed to social desirability bias.
- Quality of life was measured based only in terms of physical and social dependency.

9.CONCLUSION

Adherence to ARV drugs is crucial for the success of therapy in patients who are on ART. The adherence rate in this hospital was assessed based on seven days recall of self- report of dose adherence and it was 94.5%. Most of the participants had good knowledge and positive attitude towards their treatment. Some of the most common causes for missing doses were being away from home, busy with other duties, simply forget, lack of transportation, feeling better from their illness after starting ART was also found to be among other causes for non-adherence. Discontinuation of weekend ART clinical service created inconvenience for employed patients.

A better adherence to HAART was observed among the respondents, who were living in urban areas, those satisfied from change obtained after ART, who had no children under their care and non- substance users in the final model in multivariate analysis.

Even though partner HIV status and duration on HAART lost their association in multivariable analysis those who had positive partner were more adherent and those who took for more than one year were less adhered.

10. RECOMMENDATIONS

Based on findings of this study, we recommend that :

- Strong attention and frequent counselling should be given especially for those patients who are coming from rural areas, those who use alcohol, those who did not get early improvement since they are at risk of being non –adherent for their treatment.
- Attention should be given to those participants who had HIV negative partner.
- Proper counselling should be given on all possible reasons that cause missing doses and also their possible solutions should be discussed with patients at the initiation of ART.
- Health facility should arrange weekend services to make it convenient for those who are employed and coming from other district.
- Continuous counselling should be given even for those who have been on ART for long time and who are educated since adherence should remain dynamic .

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12. ANNEXES :

12.1. Information Sheet

Good morning/ good afternoon. My name is _____. I am working as data collector in this study that assesses antiretroviral treatment adherence status and its associated factors in the ART unit of Debre Markos Referral Hospital. We are working for an investigator doing his thesis for the partial fulfilment of master's degree in public health. We would like to ask you few questions about your ART adherence and factors that attributed for your non-adherence of antiretroviral treatment. This will help us to assess the antiretroviral therapy adherence status and to identify factors which contribute for ART non-adherence based on your answer to our questions.

You have full right to refuse, withdraw or completely reject part or all of your participation in the study. But we encourage your full participation as the answers you give on this form are very important to this study and to plan ways to help other people who has problem of adherence. We need also to take some information from your records archived in the ART unit of this hospital. We would like to assure you that all of your responses to our questions will be kept confidential throughout the study process. Any of your information you provide will be used only by the research team and , by no means, will be revealed to a third party. We will ask you questions in a place where other people or conditions couldn't interfere. We would like to assure you that your participation on this research will not affect any of your treatment and other benefit that you get from any organization. We would be thankful if you spend some time with us answering questions related to the issues described above. The interview will take 25- 30 minutes.

May I get your permission to continue my interview?

Yes… 1 No … 2 ---- Stop

If there are any questions, rights and complaints, you can contact the principal investigator through the following address :

Mulugeta Tesfa Mobile: 09 11 93 54 72 Email: mulugetatesfa27@yahoo.com

CONSENT FORM

I have read the information sheet above and clearly understood the purpose and anticipated benefit of this research. I hereby need to assure with my signature below that I have signed without any coercion or forceful by the research team, have decided to voluntarily participate in the study to contribute my part in the effort being made for the betterment of ART service.

Unique ART ID No----------

Signature ----------

Identification Number- ----------

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

Supervisor name---------- signature----------

Date of Interview----------

12.2. English Version Questionnaire

Part - I : Socio- Demographic Questions

No	Questions	Codes and Answers
101	Sex of respondent (Don`t ask)	1. Male 2. Female
102	Age	_____years
103	Marital status	1. Single 3.Divorced 5.Widowed 2. Married 4. Separated
104	To which ethnic group do you belong ?	1. Amhara 3. Agew 4. 90. Other(specify)___ 2. Tigirie. 4. Oromo
105	Residence	1. Urban 2. Rural
106	Which religion are you following?	1. Orthodox 3. Catholic 90.Other(specify)____ 2. Muslim 4. Protestant
107	Educational level	1. Illiterate 3. Secondary5. Certificate and above 2. Read and write 4. Primary level
108	What is the personal monthly income (Birr)	-------ETH. Birr 88. Don` know
109	The current occupational status	1. Government employee 5. Pension 2. Private employee 6. Housewife 3 . Merchant 7.Student 4 . Farmer 8. Unemployed .

Part- II: Social support

No	Questions	Codes and Answers	Skip
201	Do you have support from other person/ organization ?	1.Yes 2.No →	**206**
202	Who supports you?	1.My family 3.Relatives 90.Others(specify)___ 2.Friends 4.NGO`s	
203	What types of supports do you get from your supporter?	1. Material / financial 3. Care 2. Information/advice 90. Other (specify)	
204	Are you satisfied with their support?	1. Yes 2. No	

205	Do you have a child ?	1. Yes 2. No ⟶	301
206	At present is there a child under your care?	1. Yes 2. No	

Part- III : Knowledge and Attitude (Beliefs) Regarding HIV, HAART

No	**Questions**	**Codes and Answer**	**skip**
301	When did you become aware of HIV/AIDS ?	1. Before my illness 2. After my illness	
302	When did you hear about ARV therapy?	1.Before my illness 80. No response 2.After my illness	
303	What was your source of information about Antiretroviral drugs ? you can have more than one answer.	1.Healthcare provider 5. Family 2.Radio 6. Peer / friends 3.TV 7.From those who are taking the drug 4.Newspaper 90. Other(specify)___	
304	Do you take your ART at specific time always ?	1. Yes 2. No	
305	When you take ART, the daily doses should not be escaped.	1. Yes 2. No	
306	You need to take ART to prevent AIDS related diseases .	1. Yes 2. No 88. Don't know	
307	Do you believe that ART should be taken throughout the rest of your life?	1. Yes 2. No 88. Don`t know	
308	For how long have you been on HAART	_____months	
309	Do you know the number of tablets per dose from each ARV drugs should be taken ?	1. Yes 88. I am not sure 2. No	
310	Did you recognize any adverse effect (side effect) of the ARV drugs?	1. Yes 2. No ⟶	313
311	Which of the following symptoms did you experience? More than one answer is possible.	1. Vomiting 5. Depression 2. GI intolerance 6. Diarrhea 3. Headache 7. Delirium	

		4. Rash 90.Others_____	
312	What measures did you take when you developed side effect?	1.Immediately stopped taking tablets 2. Continue until the date of appointment 3.ImmediatelyI reported to clinician 4. Plan to dropped out permanently	
313	Do you think that, you are taking the best drugs for your disease?	1. Yes 2. No 88. Do not know	
314	Do you know about of consequences to non-adherence of ART?	1. Yes 2. No →	401
315	Have you ever thought of your susceptibility to have the consequences of non-adherence if you miss /skip any ART doses?	1. Yes 2. No	

Part-IV: HIV Disclosure Status

No	**Questions**	**Codes and answers**	**Skip**
401	Have you disclosed your HIV sero status ?	1. Yes 2. No →	404
402	For whom did you disclose your HIV status?	1. Partner 5. Relative 2. Children 6. Friend 3. Parent 90. .Other(Specify)___ 4.Brother/sister	
403	Do you think that disclosing your HIV status helps you to adhere to your ARV drug intake?	1.Yes 2.No	
404	What is your partner HIV sero status?	1. Tested HIV negative → 2. Tested HIV positive 3. Not tested 88. Don`t know	501
405	Is he/she taking ART?	1. Yes 2.No 88. Don`t know	

PART- V : Adherence Assessment

No	**Questions and filters**	**Codes and Answers**	**skip**
501	Did you miss taking any of your ARV drugs		
	Yesterday?	1. Yes 2. No	
	In the last 3 days	1. Yes 2. No	

	In the last 7 days?	1. Yes 2. No	
502	How many doses did you miss taking		
	Yesterday?	_____	
	In the last 3 days?	_____	
	In the last 7 days?	_____	
503	Most anti-HIV medications need to be taken on a schedule, such as " two times a day" or " three times a day" how closely did you follow your specific schedule over the last three days?	1. Never 2. Regularly 3. Irregularly	
504	Do any of your anti-HIV medications have special instructions, such as ; taking with food" or " on an empty stomach" or " with plenty of fluids"	1. Yes 2. No → 88.Don't know →	506
505	How often did you follow those special instructions over the last three days?	1. Never 2. Regularly 3. Irregularly	
506	Some people find that they forget to take their tablets on the weekend days. Did you miss any of your anti-HIV medications last weekend; last Saturday or Sunday?	1. Yes 2. No	
507	What types of schedules do you use for memory aids in order to take medication as prescribed?	1. Pill boxes 2. Written schedules 3. Watch bell (alarm clock) 4. Family 5. Don't have any memory aids 90.Other(specify)_____	
508	What motivates you to adhere to your ARV drugs? You can have more than one answer.	1. Increasing of your body weight 2. Improving of your CD4 count 3. Get better from your illness 4. Improving of your functional status 5. Fear of consequence of non-adherence 6. Support from family and relatives 7. Support from health care providers	

PART - VI : - Reasons for Skipping the Doses

Reasons for skipping the doses since the last one month (Including for the last 72 hours adherence history). NB: More than on answer is possible.

No	**Questions and filters**	**Coding Category**	
601	**What caused you to miss dosage of ARV medications?**	**Yes**	**No**
A	Had no food to take with medication?	1	2
B	Were away from home?	1	2
C	Were busy with other things?	1	2
D	Simply forgot?	1	2
E	Had too many tablets to take ?	1	2
F	Not wanting others to know their HIV status ?	1	2
G	Felt like the drugs are too toxic/ harmful and want to avoid sideeffects (either real or anticipated) ?	1	2
H	Fell asleep /slept through dose time ?	1	2
I	The presence of concurrent diseases or illnesses ?	1	2
J	Felt depressed / overwhelmed ?	1	2
K	Run out of tablets?	1	2
L	Feeling fine or healthy ?	1	2
M	Had alcohol at specified times ?	1	2
N	Not fully understanding (complicated) the regimen and its requirements?	1	2
O	Transportation problems to go to clinic ?	1	2
P	Having doubts about HAART efficacy?	1	2
Q	It was fasting days ?	1	2
R	Using holly water ?	1	2
S	Taking herbal medicines		
T	Other(specify) _____	1	2

Part- VII : Alcohol and Substance

S.no	**Questions**	**Answer**	
701	Do you have history of active substance use?	1.Yes 2.No →	801
702	Which substance do you use? You can have more than one answer.	1. Alcohol 4. Hashish 2. Cigarette 90.Other (specify)_ 3. Chat.	

703	How frequently do you take the substance?	1.Always 90.Others(specify)____ 2. Some times	
704	Is there time of missing your ART drugs because of substance use?	1.Yes 2. No	
705	How often you miss your ART drug taking of these substsnce/s?	1. Always 80. No response 2. Some times	
706	What is your plan in the future to give up active substance use?	1.To stop soon 88.I am not sure to sto 2.To stop in the future 80. No response	

Part- VIII: Patient Providers Relationship

NO	**Questions**	**Codes and Answers**	**Skip**
801	What types of interactions (relationships) do you have with your clinician?	1. Trust each other/ good relationship 2. They don`t give me attention 80. No response	
802	Are you satisfied with the support ?	1. Yes 2. No 80. No response	
803	How frequent do you visit your health personnel ?	1.every month 3. every three months 2.every two months 4. Variable/irregular	
804	Are you satisfied in the scheduling appointments and confidentiality of the treatment unit?	1. Yes 2. No	

PART- IX: Treatment Outcomes

No	**Questions and filters**	**Codes and Answers**	**Skip**
901	Before you start taking ART		
	A How much was your body weight?	_____Kg.	
	B What was your functional status?	1. Working 2. Ambulatory 3. Bed-Ridden	
902	What is your current		
	A . body weight?	_____Kg.	
	B . functional status?	1. Working 2. Ambulatory 3. Bed-Ridden	
	C. CD4+ count	_____µl	
903	Are you satisfied by the changes/ improvements you obtain for your treatment ?	1.Yes 2.No	
904	What clinical benefit do you get?	1.Able to work 4.Reduction of hospitalization 2.Weight gain 5.Reduced frequency of diarrhoea 3.Reduced fever 90..Others(specify)___	
905	Do you have history of admission during the last one year?	1. Yes. 2. No	
906	Are you taking any other medication	1.Yes	

	with your ARV drugs?	2. No	

(For the data Collector) next are some statements that you are expected to genuinely treat before completed your inquiry)

No	**Questions and filters**	**Answer**
907	Check from the record the respondent's clinical AIDS stage	_____
908	Check from the record the respondent's CD4+ cell counts before(s) he/she starts ART	_____
909	Check from the record the respondent's CD4+ cell counts after he/she starts ART (the current one)	_____
910	What is the current line of regimen that the patient takes ARV drugs?	1.1st line regimen 2.2nd line regimen

We would like to express our respect to you for your interest motivate to participate this study.

Thank you!!!

English Version for Focus Group Discussion and In-Depth Interview Guide

Information Sheet

Introduction: Welcome to the interview

Good morning/good afternoon. My name is Mulugeta Tesfa . I came from AAU and I am doing a thesis for the partial fulfilment of master's degree in public health. We are here to discuss the antiretroviral treatment adherence and its related factors. There is no right or wrong answers; all comments: both positive and negative, are most important. We would like to have many opinions and views. I would like this to be open interview, so feel free to express your opinion honestly & openly. I would like to confirm that all your comments are confidential and used for research purpose only. Your name will not be recorded to protect the confidentiality. Are you willing to participate in the interview? Yes / No

Thank you for your willingness

I. Guideline for Focus Group Discussion among ART user AIDS patients

1. How do you explain the level of your ART adherence ?
    a. What are the factors most important in your ART adherence ? Why?
    b. Which of the mentioned factors are less addressed in your daily ART intake? Why?

c. What should be done to improve your ART adherence in this hospital?

2. How common/rare is missing your ART drugs?

a. What are the reasons for missing your ART drugs?

b. Whom do you consult in case of treatment problems?

c. What should be done to encourage your adherence to ART?

3. Does taking combination of ARV treatment change the quality of your life, if so, in what ways?

4. How do you explain your satisfaction on ART service?

a. What are the factors that affect you satisfaction?

b. How do you describe your relation- ship with health care providers ?

1. Do you have any additional general comment on ART service?

II. Guideline for in-depth interview with health professionals.

1. How do you explain the level of ART adherence of your clients at this hospital ?
2. How do you assess the ART adherence of your clients?
3. What do you suggest to enhance knowledge of your clients on consequences of ART adherence, the types of dugs they take, doses and schedules on drug taking?
4. How common/rare is missing drugs among PLWHA on ART in this hospital? Why?
5. What are the changes in health status observed in client's who started receiving ART?
6. What is the relation between health workers and ART users in this hospital?
7. How do you explain the work load you have in the ART unit ? why?
8. How do you explain client's satisfaction receiving ART services at this hospital?
9. Do you have any additional comment on adherence of ART service

12.3. Amharic Versions Questionnaire

በደብረ ማርቆስ ሪፈራል ሆስፒታል በኤች አይ ቪ /ኤድስ ታካሚ ህሙማን ላይ የእድሜ ማራዘሚያ መድሃኒቶች አወሳሰድና ተያይዘዉ ስላሉ ችግሮች በተመለከተ ለሚደረግ የዳሰሳ ጥናት የተዘጋጀ መጠይቅ።

<u>መግቢያ፡</u>

በቅድሚያ ወደ መጠይቁ እንኳን ደህና መጡ።

ስሜ _____ይባላለል። አሁን በኤች አይ ቪ ኤድስ እድሜ ማራዘሚያ መድሃኒቶች አወሳሰድና መድሃኒቶችን በታዘዘዉ መሰረት ላለመጠቀም ያሉትን ችግሮች በማጥናት ከአዲስ አበባ ዩኒቨርሲቲ ሁለተኛ ድግሪዉን ለመስራት እዚህ ሆስፒታል ለመጣዉ አጥኝ መረጃ እየሰበሰብን እንገኛለን። አሁን የግል ባህሪዎን በተመለከተ ጥያቄዎችን አቀርባለሁ። በመጠይቁ ላይ ስምም ሆነ ሌላ የእርስዎን ማንነት የሚገለልፅ ማነኛዉም ነገር አይጠቀስም። በመጠይቁ ወቅት መመለስ የማይፈልጉትን ማነኛዉም አይነት ጥያቄ መተዉ ወይም በማነኛዉመ ሰአት ማቋረጥ ይችላሉ። ሆኖም ግን የሚሰጡት መረጃ ወደፊት ስለበሽታዉም ሆነ እድሜን ለማራዘም በሚወሰዱ መድሃኒተቶች ማንኛዉንም እርምጃ ለመዉሰድ ሆነ ለሚደረግ ቀጣይ ክትትል ጠቀሜታዉ የጎላ ስለሆነ በቅድሚያ ለሚያደርጉት ትብብርና ለሚሰጡት ትክክለኛ ምላሽ ምስጋናችን ከልብ የመነጨ ነዉ።

በድጋሜ ላረጋግጥልዎት የምፈልገዉ ነገር ጥያቄዎችን በተመለከተ የሚሰጡት ምላሽ ሚስጥራዊነቱ የተጠበቀ ሆኖ ሳለ ሙሉ ጠቀሜታዉ ለምርምር ስራዉ ነዉ። ዉይይቱ ከ 15-20 ደቂቃ ይፈጃል።

ስለዚህ በዚህ ጥናት መሳተፍ ፈቃደኛ ነዎት?

መልሱ አዎ ከሆነ ወደ ሚቀጠለዉ ገፅ ይለፉ ። አልፈልግም ከሆነ አመስግነዉ መጠይቁን አይጀምሩ።

ፈቃደኝነቱን ያረጋገጠዉ መረጃ ሰብሳቢ

ስም _____

ፊረማ _____

የመጠየይቁ መለያ ቁጠር _____

መጠይቁ የተደገበት ቀ ን _____

የጥናቱ ተቆጣጣሪ ሰም/ ፊርማ _____

የስምምነት መስጫ ቅፅ

አኔ ከዚህ በታች የፈረምኩት ስለጥናቱ አላማ ተረድቸ አስፈላጊ መሆኑን በማመን በጥናቱ ለመሳተፍ ያለመንም ተፅእኖ በራሴ ፈቃድ ተሳታፊ መሆኔን አረጋግጣለሁ።

የ ኤ አር ቲ መለያ ቁጠር…….ፊርማ……ቀን……

ክፍል 1 ፡- አጠቃላይ የግለሰቡ መረጃ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች
101	ጾታ	1. ወንድ 2. ሴት
102	እድሜዎት ስንት ነዉ?	_____
103	የትዳር ሁኔታዎ ምንድን ነዉ?	1. ያላገባ 4. የተለያዬ 2. ባለትዳር 5. ባል/ሚስት የሞተባት/በት 3. የፈታ
104	ብሔርዎት ምንድን ነዉ?	1. አማራ 4. ኦሮሞ 2. ትግሬ 90. ሌላ _____ 3. አገዉ
105	የመኖሪያ ቦታዎ የት ነዉ?	1. ከተማ 2. ገጠር
106	ሐይማኖትዎ ምንድን ነዉ?	1. ኦርቶዶክስ 4. ካቶሊክ 2. እስልምና 90. ሌላ 3. ፕሮቴስታንት
107	የትምህርት ደረጃዎት ስንት ነዉ?	1. ምንም ያልተማረ 2. ማንበብና መፃፍ የሚችል 4. ሁለተኛ ደረጃ 3. አንደኛ ደረጃ 5. ሠርትፊኬትና ከዚያ በላይ
108	የወር ገቢዎ ስንት ነዉ? /በብር/	_____ብር 88. አላዉቀዉም
109	በምን አይነት የሥራ ሁኔታ ላይ ይገኛሉ?	1. የመንግስት ስራ 5. ጡረታ 2. የግል መስሪያቤት ተቀጣሪ 6. የቤት እመቤት 3. ንግድ 7. ተማሪ 4. ግብርና 8. ስራ አጥ

ክፍል 2፡ የቤተሰብ ሁኔታን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
201	ድጋፍ የሚያደርግልዎት ሰዉ / ድርድት አለ?	1. አዎ 2. የለም →	206

202	ድጋፍ የሚያደርግልዎት ማን ነዉ? ከአንድ በላይ መልስ መስጠት ይቻላል	1. ቤተሰብ 4. ግብረ ሠናይ ድርድት 2. ጓደኞቸ/የስራ ባልደረቦቸ 3. ዘመዶቸ 90. ሌላ (ይጠቀስ) -----	
203	ምን አይነት ድጋፍ ነዉ የሚደረግልዎት?ከአንድ በላይ መልስ መስጠት ይቻላል	1. የገንዘብ / ቁሳቁስ 3. የጤና እንክብካቤ 2. የምክር / መረጃ መስጠት . 90. ሌላ (ይጠቀስ)	
204	በሚደረግልዎት እርዳታ ረክተዋል?	1. አዎ 2. የለም 80 መልስ አልተሰጠም	
205	ልድ አለዎት ?	1. አዎ 2. የለም →	301
206	አሁን ከእርስዎ ጋር የሚኖር ልጅ አለ/አሉ?	1. አዎ 2. የለም	

ክፍል 3፡ እዉቀትንና አመለካከትን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	
301	መጀመሪያ ስለ ኤች አይ ቪ ኤድስ የሰሙት መቸ ነበር?	1. ከመታመሜ በፊት 2. ከታመምኩ በኋላ	
302	ስለ ፀረ-_ኤች አይ ቪ (የእድሜ ማራዘሚያ) መድሃኒት የሰሙት መቸ ነበር?	1. ከመታመሜ በፊት 2. ከታመምኩ በኋላ	
303	ስለ ፀረ-_ኤች አይ ቪ (የእድሜ ማራዘሚያ) መድሃኒት ግንዛቤ ያገኙት የት ነዉ? ከአንድ በላይ መልስ መስጠት ይችላሉ።	1. ከጤና ባለሙያ 5. ከቤተሰብ 2. ከሬድዮ 6. ከጓደኛ 3. ከቴሌቪዥን 7. መድሃኒቱን ከሚወስዱት 4. ከጋዜጣ 90. ሌላ (ይጠቀስ)-------	
304	መድሃኒትዎን ሁልጊዜ በታዘዘዉ ሰአት ነዉ የሚዎስዱት?	1. አዎ 2. አይደለም	
305	መድሃኒትዎን ሲዎስዱ መቋረጥ እንደሌለበት ያዉቃሉ?	1. አዉቃለሁ 2. አላዉቅም	
306	በኤድስ ምክንያት ሊከሰት የሚችለዉን የጤና ችግር የፀረ-_ኤች አይ ቪ መድሃኒት በመዉሰድ መከላከል ይቻላል?	1. አዎ 2. የለም 88 አላዉቅም	
307	የፀረ-ኤች አይ ቪ መድሃኒት ለወደፊቱ በሕይወት ዘመንዎ ሁሉ መወሰድ አለበት ብለዉ ያምናሉ?	1. አዎ 2. የለም 88 አላዉቅም	
308	ለምን ያህል ጊዜ የፀረ-_ኤች አይ ቪ መድሃኒት ተጠቅመዋል?	_____ ወር/ ወራት	
309	የፀረ-_ኤች አይ ቪ መድሃኒትዎን ሲዎስዱ ከእያንዳንዱ አይነት እንክብሎች ምን ያህል መወሰድ እንዳለብዎት ያዉቃሉ?	1. አዉቃለሁ 2 . አላዉቅም 3. እርግጠኛ አይደለሁም	
310	የፀረ-_ኤች አይ ቪ መድሃኒትዎን ሲዎስዱ ያደረሰብዎት የጐንዮሽ የጤና ችግር ነበር?	1. አዎ 2. የለም →	313

311	የትኛዉ አይነት የሕመም ምልክት ተከስቶ ነበር? ከአንድ በላይ መልስ መስጠት ይቻላል	1. ትዉከት 5. ድብርት 2. የራስ ህመም 6. ተቅማጥ 3. የጨጓራ ህመም 7. kezute 4. የቆዳ ላይ ሽፍታ 90 . ሌላ_____	
312	ችግሩ ሲከሰት ምን እርምጃ ወሰዱ?	1. ወዲያዉኑ መድሃኒቱን አቋረጥኩ 2. የቀጠሮ ቀን እስከሚደርስ keteleku 3. ወዲያዉኑ ሃኪሜን አማከርኩ 4. ሙሉ በሙሉ ለማቋረጥ ወሰንኩ	
313	አሁን ለህመምዎ ጥሩ መድሃኒት እየሰድሁ ነዉ ብለዉ ያስባሉ?	1. አዎ 2. የለም 88 . አላዉቅም	
314	የፀረ-_ኤች አይ ቪ መድሃኒትን በአግባቡ ባለመዉሰድ ሊያስከትል የሚችለዉን የጤና ችግር ያዉቃሉ?	1. አዎ 2. የለም →	401
315	የፀረ-_ኤች አይ ቪ መድሃኒትዎን በአግባቡ ባለመዉሰድዎ ሊደርስብዎት የሚችለዉን የጤና ችግር አስበዉ ያዉቃሉ?	1. አዎ 2. የለም	

ክፍል 4፡ የ ኤች አይ ቪ ቫይረስ ዉጤትን ስለመግለፅ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
401	የ ኤች አይ ቪ ቫይረስ በደምዎ ዉስጥ መኖሩን ለሌላ ሰዉ ነግረዋል?	1. አዎ 2. የለም →	404
402	ለማን ነዉ የነገሩት? ከአንድ በላይ መልስ መስጠት ይችላሉ።	1. ለባለቤቴ/ ለፍቅረኛዬ 5. ለዘመድ 2. ለልጄ / ጆቸ 6. ለጓደኛ 3. ለወላጆቸ 90. ሌላ__ 4. ለወንድሜ/እህቴ	
403	ዉጤትዎን መንገርዎ መድሃኒትዎን በትክክል ለመዉሰድ አግዞኛል ብለዉ ያምናሉ?	1. አዎ 2. የለም 88. አላዉቅም	
404	የባለቤትዎ / ጓደኛዎ የደም ምርመራ ዉጤት ምንድን ነበር?	1. ቫይረሱ በደሙ ዉስጥ አልተገኘበትም → 2. ቫይረሱ በደሙ ዉስጥ ተገኝቶበታል 3. አልተመረመረም → 88. መመርመሩን አላዉቅም →	501
405	ባለቤትዎ የፀረ-ኤች አይ ቪ መድሃኒት ይጠቀማሉ?	1. አዎ 2. የለም 88. አላዉቅም	

ክፍል 5 ፡ የፀረ-ኤች አይ ቪ መድሃኒት አጠቃቀምን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
501	መድሃኒትዎን በቅርቡ ያልዎሰዱት መቸ ነበር?		
	ትናንትና	1. አዎ 2. የለም	
	ባለፉት ሶስት ቀናት	1. አዎ 2. የለም	
	ባለፉት ሰባት ቀናት	1. አዎ 2. የለም	
502	መድሃኒትዎን መዉሰድ ከነበረብዎት ጊዜ ምን ያህሉን ነዉ ያልወሰዱት?		
	ትናንት	_____ ጊዜ	
	ባለፉት ሶስት ቀናት	_____ ጊዜ	
	ባለፉት ሰባት ቀናት	_____ ጊዜ	
503	አብዛኛዎቹ የፀረ-ኤች አይ ቪ መድሃኒቶች የሚዎሰዱት በቀን ሁለት ጊዜ ወይም ሶስት ጊዜ ነዉ። እርስዎስ በዚህ መሰረት በትክክል አየዎሰዱ ነዉ?	1. መመሪያዉን በፍፁም አልከተልኩም 2. መመሪያዉን በትክክል ተከትያለሁ 3. መመሪያዉን አንዳንድ ጊዜ ብቻ ተከትያለሁ	
504	የሚዎስዷቸዉ የፀረ-ኤች አይ ቪ መድሃኒቶች ዉስጥ ልዩ የአዎሳሰድ መመሪያ ያላቸዉ (ከምግብ በፊት ከምግብ ጋር ፡ ብዙ ዉሃ መጠጣት) አሉ?	1. አዎ 2. የለም → 88 አላዉቅም →	506
505	ባለፉት ሦስት ቀናት ዉስጥ ምን ያህል መመሪያዉን ተከትለዉ ወሰዱ?	1. መመሪያዉን በፍፁም አልከተልኩም 2. መመሪያዉን በትክክል ተከትያለሁ 3. መመሪያዉን አንዳንድ ጊዜ ብቻ ተከትያለሁ	
506	አንዳንድ የፀረ-ኤች አይ ቪ መድሃኒት ተጠቃሚዎች በበአላት ቀናት / ቅዳሜና እሁድ /መድሃኒታቸዉን ይረሳሉ። እርስዎስ ባለፉት ቅዳሜና እሁድ እረስተዋል	1. አዎ 2. የለም	
507	መድሃኒትዎን በሰአቱ መዉሰድ እንዲችሉ ለማስታዎስ የሚጠቀሙት ምንድን ነዉ?	1. በመድሃኒቱ እቃ 2. የተፃፈ መመሪያ ፕሮግራም 3. የሰአት ደዎል 4. Family 5. ምንም የለኝም 90. ሌላ_____	
508	መድሃኒትዎን በደንብ ተከታትለዉ እንዲዎስዱ የሚያበረታታዎ ሁኔታ ምንድን ነዉ?	1. የክብደትዎ መጨመር	

	ከአንድ በላይ መልስ መስጠት ይቻላል	2. የ ሲዲ ፎር ቁጥርዎ መጨመር 3. ከህመምዎ መዳንዎ 4. ስራዎትን መስራት ስላስቻለዎ 5. ከመድሃኒቶች መቋረጥ ጋር የሚመጣዉን ችግር በመፍራት 6. ከቤተሰብዎና ከዘመድ የሚደረግልዎት ድጋፍ 7. ከጤና ባለሙያ የሚደረግልዎት ድጋፍ	

ክፍል 6፡ ለመድሃኒት መቋረጥ ምክንያቶች በተመለከተ

ባለፈዉ አንድ ወር እንዲሁም ባለፉት ሶስት ቀናት ጊዜ ዉስጥ ለመድሃኒት መቋረጥ ምክንያቶች ናቸዉ የሚሏቸዉን ከዚህ በታች ከተዘረዘሩት ዉስጥ ይጥቀሱ።

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	
		አዎ	የለም
601	መድሃኒትዎን እንዳይወስዱ ያደረገዎት ምክንያት ምን ነበር?		
A	መድኃኒት ለመዉሰድ ምግብ ስላልነበረ?	1	2
B	ከመኖሪያ ቤቴ ርቄ ስለነበር	1	2
C	ስራ በዝቶብኝ ስለነበር	1	2
D	በመርሳት	1	2
E	የምዎስደዉ መድሃኒት ብዙ ስለሆነ	1	2
F	ሌሎች ሰዎች እንዲያዉቁ ስለማልፈልግ	1	2
G	መድሃኒቱ የጤና ችግር ስላመጣብኝ/ ያመጣብኛል ብዬ ስለሰጋሁ/	1	2
H	በመድሃኒቱ መዉሰጃ ሰአት እንቅልፍ ስለሚዎስደኝ	1	2
I	ሌላ ተደራራቢ ህመም ስላመመኝ	1	2
J	ድብርት ስለሚሰማኝ	1	2
K	መድሃኒት ስለጨረስኩ	1	2
L	የጤንነት ስሜት ስለተሰማኝ	1	2
M	የአልኮል መጠጥ ስለጠጣሁ	1	2
N	የመድሃኒቱ አዎሳሰድ ስላልገባኝ	1	2
O	የትራንስፖርት ችግር ስላለብኝ	1	2
P	በመድሃኒቱ ላይ እምነት ስለሌለኝ	1	2
Q	የፆም ጊዜ ስለነበር	1	2
R	ፀበል እየተጠቀምኩ ስለሆነ	1	2
S	የባህል መድሃኒት ስለምወስድ	1	2

ሌላ ካለ ይጠቀስ _____

ክፍል 7፡ የአልኮል መጠጥና አነቃቂ ዕፅ በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
701	በአሁኑ ሰአት የሰዉነት ማነቃቂያ ነገሮችን ይዎስዳሉ?	1. አዎ 2. የለም →	801
702	የትኞቹን አነቃቂ ይጠቀማሉ?	1. የአልኮል መጠጥ 4. ሃሺሽ 2. ሲጋራ 90. ሌላ (ይጠቀስ)_____ 3. ጫት	
703	ከላይ የጠቀሷቸዉን አነቃቂ ነገሮች በየስንት ጊዜ ይወስዳሉ?	1. ሁለጊዜ 2. አልፎ አልፎ 90. ሌላ _____	
704	አነቃቂ ነገሮችን በመዉሰድዎ ምክንያት መድሃኒትዎን ያልዎሰዱበት ጊዜ አለ?	1. አዎ 2. የለም	
705	አነቃቂ ነገሮችን በመዉሰድዎ ምክንያት ምን ያህል ጊዜ መድሃኒትዎን ሳይዎስዱ ቀሩ?	1. ሁለጊዜ 2. አልፎ አልፎ 80. መልስ የለም	
706	አነቃቂ ነገሮችን ለወደፊቱ ለማቆም ያለዎት እቅድ ምንድ ነዉ?	1. አሁኑ ለማቆም 2. በሂደት ለማቆም 3. ለማቆም እርግጠኛ አይደለሁም 80. መልስ የለም	

ክፍል 8፡ በታካሚዉና ጤና ሙያተኛዉ መካከል ያለዉን ግኑኝነት በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
801	በእርስዎና በሃኪምዎ መካከል ያለዉ ግኑንነት እንዴት ነዉ?	1. ጥሩና በመተማመን ነዉ 2. ትኩረት / ክብር አይሰጡኝም 80. መልስ የለም	
802	ሃኪምዎ በሚያደርግልዎት ህክምና እርዳታ ረክተዋል?	1. አዎ 2. የለም 80. መልስ የለም	
803	ከሃኪምዎ በየስንት ጊዜ ይቀርባሉ?	1. በየወሩ 3. በሶስት ወር 2. በሁለት ወር 4. ቋሚ ቀጠሮ የለኝም	
804	የሚስጠዎት የቀጠሮ ቀንና ክትትል የሚያደርጉበት ክፍል ተመችቶዎታል?	1. አዎ 2. የለም	

ክፍል 9፡ ሌሎች የፀረ-ኤች አይ ቪ ህክምና ዉጤትን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
901	የፀረ-ኤች አይ ቪ መድሃኒትዎን ከመጀመርዎት በፊት		
	የሰዉነትዎ ክብደት ስንት ነበር?	_____ ኪሎ ግራም	
	የአካል እንቅስቃቄዎ እንዴት ነበር?	1. ስራ ይሰሩ ነበር 2. ቀላል እንቅስቃሴ ብቻ ነበር 3. አልጋ ላይ ነበር የሚዉሉ	
902	የፀረ-ኤች አይ ቪ መድሃኒትዎን ከጀመሩ በኋላ		
	ክብደትዎ ስንት ነዉ?	_____ኪሎ ግራም	
	የአካል እንቅስቅሴዎ እንዴት ነዉ?	1. ስራ እየሰሩ ነዉ 2. ቀላል እንቅስቃሴ ብቻ ነዉ 3. አልጋ ላይ ነዉ የሚዉሉት	
	የሲዲ ፎር መጠንዎ ስንት ነዉ?	___ ሴል/ ማይክርሊትር	
903	የፀረ-ኤች አይ ቪ መድሃኒትዎን ከጀመሩ በኋላ በጤናዎት ላይ ባገኙት ለዉጥ እረከተዋል?	1. አዎ 2. የለም	
904	ያገኙት ለዉጥ ምንድን ነዉ? ከአንድ በላይ መልስ መስጠት ይቻላል	1 ስራ መስራት መቻሌ 2 በተደጋጋሚ ሆስፒታል መተኛት ቀርቷል 3 ክብድት መጨመር 4 ትኩሳት መቀነስ 5 ተቅማጥ መቀነስ 90. ሌላ _____	
905	ባለፈዉ አነድ አመት ዉስጥ ሆስፒታል ስንት ጊዜ ተኝተዉ ታከሙ ?	1. አልተኛሁም 3. ሁለት ጊዜ 2. አንድ ጊዜ 4. ሶስት ጊዜና በላይ	
906	ከፀረ-ኤች አይ ቪ መድሃኒትዎ በጨማሪ ሌላ የሚዎስዱት መድሃኒት አለ?	1. አዎ 2. የለም	

<u>ለመረጃ ሰብሳቢዉ፡-</u> ከዚህ ቀጠሎ ላሉት መጠይቆች መጠይቁ ከቀረበለት ታካሚ ካርድ በጥንቃቄ ተመለከተዉ ይሙሉ።

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ወደ
907	ታካሚዉ ህክምናዉን ሲጀምሩ የ WHO የጤንነተ ደረጃ / WHO clinical stage/ ስንት ነበር?	ደረጃ _____	
908	ታካሚዉ የፀረ-ኤች አይ ቪ መዳህኒታቸዉን ከመጀመራቸዉ በፊት የሲዲ ፎር መጠናቸዉ ስንት ነበር?	____ ሴል/ ማይክርሊትር	
909	ታካሚዉ የፀረ-ኤች አይ ቪ መዳህኒታቸዉን ከመጀመሩ በኋላ (አሁን) የሲዲ ፎር መጠናቸዉ ስንት ነዉ?	_____ሴል/ ማይክርሊትር	
910	ታካሚዉ አሁን እየወሰዱ ያሉት የመድሃኒት ደረጃ/ line of regimen/ የቱ ነዉ?	1 የመጀመሪያ ደረጃ/ 1st line regimen/ 2 ሁለተኛ ደረጃ/ 2nd line regimen/	

መጠይቁ ከዚህ ላይ ያበቃል ። ስለ ትብብራችሁና ጊዜያችሁን መስዋእት በማድረጋችሁ በጣም እናመሰግናለን !!!

I . የቡድን ዉይይትና ጥልቅ ቃለመጠይቅ ለማካሄድ የቀረቡ ጥያቄዎች።

ለቡደን ዉይይት

1. የኤ አር ቲ መድሃኒት አወሳሰድዎ ሁኔታ

ሀ/ በእርስዎ የመድሃኒት አዎሳሰድ ላይ ችግር እያስከተሉብዎት ያሉት ነገሮች የትኞቹ ናቸዉ? ለምን?

ለ/ ከጠቀሷቸዉ ዉስጥ የትኞቹን ነዉ መቅርፍ ያልቻሉት? ለምን?

ሐ/ መድሃኒትዎን በአግባቡ መዉሰድ እንዲቸሉ በዚህ ሆስፒታል ምን መደረግ አለበት ይላሉ?

2 መድሃኒትዎን የሚያቋረጡበት ሁኔታ ምን ያህል ነዉ?

ሀ/ ለማቋረጥዎ ምክንያቶች ምንድ ናቸዉ?

ለ/ መድሃኒትዎን እየዎሰዱ ችግር ሲገጥምዎት የሚያማከሩት ማንን ነዉ?

ሐ/ የእርስዎን መድሃኒት አወሳሰድ በተገቢዉ ሁኔታ መዉሰድ እንዲችሉ ምን መደረግ አለበት ይላሉ?

3 የፀረ-ኤች አይ ቪ መድሃኒት መዉሰድዎ የአኗኗርዎትን ወደ ተሻለ ሁኔታ ለዉጦልዎታል ? በምን አይነት ሁኔታ?

4 በህክምና አገልግሎይት አሰጣጥ ላይ ያለዎትን እርካታ እንዴት ይገልጹታል?

ሀ/ በአገልግሎቱ ካልረኩ ፡ ምክንያትዎት ምንድን ነዉ?

ለ/ በእርስዎና በሃኪምዎ መካከል ያለዉን ግንኙነት እንዴት ያዩታል?

3 ሌላ ካለ ይግለጹ _____

ዉይይታችንን ጨርሰናል ። አመሰግናለሁ።

ከባለሙያዎች ጋር ለሚደረግ ቃለ መጠይቅ የቀረበ ጥያቄ

1 በዚህ ሆስፒታል ዉስጥ የኤ አር ቲ መድሃኒት የሚከታተሉትን ታካሚዎች ክትትላቸዉን በምን ደረጃ ይገልጹጻል?
2 ታካሚዎች መድሃኒታቸዉን በአግባቡ እየወሰዱ መሆናቸዉን በምን አይነት መንገድ ያረጋግጣሉ?
3 ታካሚዎች ስለ በሽታቸዉና መድሃኒታቸዉ ያላቸዉ ግንዛቤ ምን ያህል ነዉ?
4 ታካሚዎች መድሃኒታቸዉን በአግባቡ መዉሰድ እንዲችሉ ግንዛቤያቸዉን ከፍ ለማድረግ ምን መደረግ አለበት ይላሉ?
5 በዚህ ሆስፒታል ታካሚዎች መድሃኒታቸዉን የማቋረጡ ሁኔታ ምን ያህል የተለመደ ነዉ ብለዉ ያስባሉ?
6 ህክምናቸዉን በአግባቡ እንዳይከታተሉ ያደረጋቸዉ ዋና ዋና ምክንያቶች ምን ምን ናቸዉ ይላሉ?
7 በእርስዎና በታካሚዎ መካከል ያላችሁን ግንኙነት እንዴት ይገልጹታል?
8 ታካሚዎቻችሁ በሚሰጣቸዉ አገልግሎት ያላቸዉ እርካታ ምን ይመስላል?
9 በከፍሉ ዉስጥ በሚሰሩ ሰራተኞች ላይ የስራ ጫና አለ? ካለስ በአገልግሎት አሰጣጡ ላይ የራሱ የሆነ አሉታዊ ተፅዕኖ አስከትሏል ብለዉ ያስባሉ? እንዴት?
10 በኤ አር ቲ የህክምና አገልግሎት አሰጣጥ ላይ ተጨማሪ ሃሳብ አለዎት?

ጥያቄየን ጨርሣለሁ። አመሰግናለሁ።