Addis Ababa University

Faculty of Medicine

Department of Community Health

Measuring the Quality Of Life (QOL) of People Living With HIV/AIDS (PLWHA) With Highly Active Antiretroviral Therapy (HAART) in Addis Ababa Zenebework Hospital.

By

Lulseged Tolla

A thesis submitted to the school of graduate studies Addis Ababa University in partial fulfillment of the requirements for master of public health

June 2006

Addis Ababa, Ethiopia

Addis Ababa University

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Dedicated to People Living With HIV/AIDS

AKNOWLEDGEMENTS

Acknowledgements can never be made to all those who have nourished one's intellectual life. Chief among these, in my case, is Dr. Damen H. Mariam, associate professor of public health, who has given me sustenance and has kindled enthusiasm to undertake this research and devoted all his time in correcting, guiding and shaping both my proposal and final paper.

I am also grateful to Dr Melaku Samuel, EPHA-CDC research advocacy officer, for his kind advice and material support.

My heartfelt thanks also go to Dr. Yigremu Abebe, ALERT ARV treatment program coordinator, who has made me collect the data in addition to the constructive advise and reviewing this paper.

My appreciation extends to EPHA-CDC project for funding this research.

IN addition, I would like to give heavy dept of gratitude to my brothers and sisters for their support in any thing possible; Fisseha gets the lion's share.

Finally, heartfelt thanks go to S/r. Abebch Mengesha, S/r. Selome Demissie and S/r. Lemlem Kebede and the data collectors for their patience during data collection.

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Acronyms

AAU: Addis Ababa University

AIDS: Acquired Immune Deficiency Syndrome

ALERT: All African Leprosy Eradication & Rehabilitation Center

ART/ARV: Anti-Retroviral Therapy/Viral

AZT/3TC: Zidovudine/ Lamivudine

CD4 cells: Cells with CD4 marker

CDC: Center for Disease Control

CF: Cognitive Functioning

CMV: Cyto Megalo Virus

EPHA: Ethiopian Public Health Association

HAART: Highly Active Anti Retroviral Therapy

HAPCO: HIV/AIDS Prevention & Control Office

HD: Health Distress

HIV: Human Immunodeficiency Virus

HG: General Health perception

HRQoL: Health Related Quality of Life

KS: Kaposi Sarcoma

MAC: Mycobacterium Avium Complex

MH: Mental Health

MHS: Mental Health Summary score

MOS-HIV: Medical Outcome Study-HIV

PCP: Pneumocystic Cariny Pneumonia

PF: Physical Functioning

PEPFAR: President's Emergency Plan For AIDS Relief

PHS: Physical Functioning Summary score

PLWHA: People Living With HIV/AIDS

QoL (QL): Quality of Life

RF: Role Functioning

SF: Social Functioning

TB: Tuberculosis VT: Vitality

WHO: World Health Organization

ABSTRACT

A cross-sectional comparative study among 768 (262 People Living With HIV/AIDS (PLWHA) on Highly Active Antiretroviral Therapy (HAART) in Zenebework Hospital and 506 their respective neighbors from Kolfe and Nifasilk sub cities) in Addis Ababa was employed between December and February 2006, to assess Health Related Quality of Life (HRQoL), Amharic translated standard Medical Outcome Study-HIV (MOS-HIV) interview questionnaire collected information on health related quality of life while; a pre tested interview questionnaire collected the socio demographic characteristics of both cases and non-equivalent controls. Clinical data for antiretroviral participants was collected using a prepared data extraction form. Some of the items, 11 dimensions and 2 aggregate physical (PHS) and mental (MHS) summary scores of the MOS-HIV were used to evaluate the level and determinants of health related quality of life. The overall response rate was 96.6%. Reliabilty coeffocients were > 0.70, except the general health and vitality scales. MOS-HIV scores for PLWHA on HAART were correlted with pain, energy, cognitve function,vitality, health destress and social funtions. Compared to their neighbors, PLWHA on HAART scored lower mean points for physical functioning, pain, energy, social functioning, vitality, health distress, mental and cognitive functioning dimensions(P<0.000)for all. Between 7..3 to 33.6% of PLWHA on HAART and 3.6 to 11.1% of their neighbors reported substantial impairments in selected items containing Physical and mental functions. Highest proportion (33.6%) of the HAART group admitted health limitation in working at a job or around tie house followed by inability to do moderate activities (27.9%) quite a lot of the time. Those HAART participants with duration of treatment above the median 36 weeks obtained higher mean points than those below for general health (P<0.05), physical functioning (P<0.001) and vitality (P<0.05). PLWHA on HAART in clinical stages 1 and 2 were more likely to score high mean points than those in clinical stages 3 and 4. Significant associations were observed in general health (P<0.05), bodily pain (P<0.0001), physical functioning

(P<0.0001), vitality (P<0.0001), and health distress (P<0.05). After adjustments for confounders high mean Physical Health Summary (PHS) scores were observed in age groups <36 and secondary plus education attendants of the two study groups while, high Mental Health Summary (MHS) scores were related to age less than 36, males, secondary education attendants, employed and high income groups of both PLWHA on HAART and their neighbors. In multivariate analysis education was the only predictor of physical and mental health summary scoring in PLWHA on HAART and their neighbors. In conclusion, patient-reported measures may provide a feasible and reliable method to assess the problems and clinical progress of PLWHA on HAART. Intervention strategies to improve the health-related quality of life of PLWHA on HAART like educational opportunity to allivate employment and economic problems are recommended.

INTRODUCTION

The Human Immunodeficiency virus (HIV) and Acquired Immune deficiency Syndrome (AIDS), pandemic continuous to spread worldwide. Today some 37.8 million people (range 34.6-42.3 million) are living with the virus, which killed about 3 million in 2003 and over 20 million since the first case of AIDS was identified in 1981(1). Sub-Saharan Africa, with only 10% of the total world population, is carrying the burden of 80% of the world HIV infection and AIDS cases (2).

With an estimated 1.5 million people living with HIV/AIDS (PLWHA) and a national prevalence rate of 4.4 % (12.6% urban and 2.6 rural); Ethiopia is one of the hardest hit countries by HIV/AIDS epidemic (3). Ethiopia hosts the fifth largest number of people living with the virus globally. Out of the 1.5 million PLWHA, 817,000 are women and 96,000 are children under 15 years (2).

There are about 537,000-orphaned children due to AIDS. Some 245,000 PLWHA will be in need of Anti Retroviral Treatment (ART) during 2004. Death due to AIDS brought down life expectancy gains from 53 to 46 in 2001. If the current death trend continuous, the projected life expectancy gain to 59 years in 2014 will be reduced to 50 years (4).

AIDS is much more than a health crisis. Its effects extend to nearly every dimension of social and economic life especially in the worst-affected countries. Although the magnitude of the epidemic varies in every country, AIDS primarily strikes adults between the ages of 25 and 45 years-people who were infected in their adolescent and young adult years. AIDS deaths rob

employees from labor force, providers and caregivers from families and teachers from communities (5).

The magnitude of the problem together with the inherent resource constraints studying the effectivenee of an ongoing program is mandatory.

During the past two decades, Quality of life (QoL) has become an important outcome in medical and psychological research. Increasingly, new evidence supports the importance of including patient's assessment of Health-Related Quality of Life (HRQoL) in clinical studies. It is well known that clinical data only show small correlations with patients' judgments (6). Warschburger stressed that a QoL measure offers the possibility to describe the specific emotional problems to extract the relevant influences on the disease process. Our Understanding of these factors is crucial to the development of comprehensive care, therapies and new interventions (7).

Although the burden of HIV-related morbidity and mortality in Africa has been reported, there has been little research on the impact of HIV on peoples' every day lives (8). In Industrialized countries, questionnaire based methods are used with increasing frequency to assess the health status, also referred to as Health Related Quality of life (HRQoL) of people with chronic diseases including HIV/AIDS. These methods of evaluation of HIV therapeutics and to research on health Services, have been rarely used in resource-poor settings such as Africa. The intensity of HIV in Africa, together with increasing expectations for the availability of HIV treatment and services, suggests a need for the assessment of QoL in African population (9).

The level and extent to which clinical parameters and socio demographic factors influence the health related quality of life of people living with HIV/AIDS on antiretroviral therapy have not been studied in our set up.

Therefore, such studies would enable a wider scope in the analysis of the impact of sickness and of the complex therapeutic strategies used permitting us for evaluating which dimensions of the patients' life are most affected and to establish association with different clinical, therapeutic and psychosocial factors (10).

Hence, this research was undertaken with the objective of determining the extent to which the specific treatment-related clinical variables and selected socio demographic factors influence of HRQoL of PLWHA on HAART.

LITERATURE REVIEW

In 1996, a breakthrough occurred in HIV treatment. The development of antiretroviral therapy (ART) has dramatically lowered morbidity and mortality in countries where it is widely available. In New York City, for example, with the highest incidence of HIV and AIDS in the United States, death rates from AIDS and new AIDS cases have both been reduced by half since the introduction of ART. Similar reductions are seen everywhere that therapy is available. ART and other HIV treatment not only keep people alive longer, they also provide a better quality of life, allowing people to return to work and school, take care of their families, and contribute to their communities (11).

In Canada (12), evaluated the relationship between perceived social support and viral load over a 4-year period among 34 adults receiving outpatient medical care for HIV. “Social support in this study emphasized perceptions of accessibility to others with whom to express mutual loving and caring, share activities and openly discuss issues of concern.” Measures were taken at baseline, in year 2, and again in year 4. Result show adults living with HIV infection and who consistently took HAART over a relatively long-term period of time appeared to experience better clinical benefit in terms of viorological suppression if they perceived having positive interpersonal, informational and emotional support available to them. Attempts to illuminate the direction of causation between social support perception and viral load outcome met with some success. Study results suggested a trend in which social support did portend viral load outcomes. However, not all of the criteria for supporting causality were satisfactorily met.

The active community support offered to DOT-HAART patients was key to the dramatic clinical responses visible to everyone, including neighbors, accompaniers, physicians, and nurses. Patients for whom therapy resulted in return to health became known as HIV-treatment successes in their communities and proved to be valuable human resources for HIV prevention activities. In addition, Partners In Health believes that «the stigma associated with AIDS has diminished as a result of the dramatic responses to therapy. Decreased stigma is reflected in an increased willingness of patients to discuss their diagnosis openly, an increased demand for HIV testing, and a reduced number of patients' complaints regarding abusive behavior of family members or neighbors». For example, within the first two years of the program's existence, utilization of the clinic's free HIV counseling and testing services increased by more than 300%. Moreover, in contrast to reported emotional problems among health care workers in areas without available AIDS treatment, staff morale in the HIV Equity Initiative was significantly boosted by the availability of the life-saving therapies. According to Farmer, «small victories that are thought to be big miracles by patients are more rewarding than one could ever deserve.» A more recent review4 in 2003 of key clinical and laboratory parameters compared outcomes among a group of 100 patients who received DOT–HAART based on the clinical criteria of advanced disease (generally bed-bound with significant weight loss) and two other groups, each with 100 HIV-positive patients in whom ARV drugs were deferred because they 1) were deemed less sick (generally ambulatory without significant weight loss) or 2) because they lived too far from the clinic to arrange for an accompanier. Even though the patients in the first group were far sicker than those in the two groups in which HAART was deferred, the first group showed superior improvement in terms of fewer hospitalizations, opportunistic infections, tuberculosis, and

mortality. In addition to the outcomes listed above, the assessment confirmed the reduction of stigma and increased staff morale as favorable results of the program (13).

The benefit of antiretroviral therapy has been documented elsewhere. The variety of treatment options available have decreased opportunistic infections, morbidity and mortality. Social, emotional and informational support on the other hand have decreased stigma, increased disclosure and demand for voluntary counselling and testing and have given better clinical benefits in terms of virilogical suppression. Having the knowledge of these undeniable advantages, what other negative effects do exist? How were they measured?

To begin with, current drug regimens have a number of difficulties . In clinical studies ,only around 70% of those who are placed on HAART achieve the ideal level of suppression of HIV replication (below 50 copies/ml) and in clinical practice this figure may be as low as 50% . Those who fail to completely suppress viral replication show clinical progression with increasing viral load over a period of time. Further, current drug regimens are often complex, difficult to tolerate, have long–term side effects, and raise medical issues such as monitoring and adherence with therapy over time. For chronic therapy, regimens ideally should be simple, tolerable , have few side effects, and afford a good quality of life. Current antiretroviral regimens fall short of these ideals as drug combinations often have: significant long term toxicity such as lipo dystrophy or diabetes associated with protease inhibitors, or peripheral neuropathy associated with nucleoside agents ; Involve a large pill burden and complex ingestion regimens and Often have awkward requirements with respect to time of food intake or in the case of indinavir require a constant high fluid intake. Incidence of side effects in some drugs ranged from a low of 11% in

one study to as high as 64% in another study. People who have experienced high level clinical and virological failure with existing drugs have few if any places to turn. A number of small studies labeled as " salvage therapy" were presented in Chicago, but they could all be summed up as a strategy of " try whatever's left" or "take everything at once," Small uncontrolled studies reported varying degrees of short-term success from four-five-and six-drug combinations. Nothing ,however, even hinted at an effective long–term strategy. Even if a five-or six-drug regimen works in the short-term, it seems unlikely that people could sustain such intensive therapy for long periods. Many people already have difficulty working with three-drug combinations, so the challenges of adherence and toxicity in a five-or six-drug regimen may be overwhelming (14).

Studies of the immune system in people successfully treated for long periods with highly active antiviral therapy (HAART) Show a surprising but still imperfect level of immune restoration. Progress or reversal seems to be occurring in nearly every documented defect of immunity associated with AIDS. The level of resulting immune response is still not comparable to uninfected controls, but this perhaps is too much to ask. Instead, the question might be "is the restored level of immunity sufficient to lead a normal life?" The answer to this question increasingly seems to be yes, with growing evidence that some people are able to successfully withdraw from the use of maintenance and preventive therapies against opportunistic infections. Even if the immune response remains imperfect, it may be adequate. But still, in a Norwegian study on living conditions and quality of life among people living with HIV indicated, worsening physiological conditions than in the average population coupled with complaints of bi-effects of HAART (15).

More over, in a Mexican qualitative sociological study (Herrera, C., et al.) analysis reveals that despite having access to Antiretroviral therapy (ART) and medical care, Mexican PLWHA, rarely adhere correctly to ART. Some of the associated factors were lack of training among the majority of medical personnel, instances of discrimination, difficulties establishing good physician-Patient communication and consequent lack of patient confidence to speak openly about their behavior, and PLWHA decision making about adherence based on previous experiences of sickness & health (16).

Survey on living conditions and quality of life among PLWH was conducted in Norway, 2002; the general income of PLWH is on the same level as the general population, but 44% of the respondents compared with 9% of the general population have problems covering daily expenses. The majority is open about their HIV status towards at least one person, but there has been also a closed world. More than 1/3 of the respondent abstain for sex and experience less physical contact. Th physiological condition is worse than in the average population. PLWH complain bi-effects of the HAART and want to strengthen their immune system through alternative means. There is a demand for a more holistic approach in health services. PLWH are critical towards public services, e.g. labour offices and authorities handling asylum seekers (17).

Qualitative research in South Africa with HIV-positive out-clinic patients shows that disclosure and safer sexual practices have not been taken up by many HIV–positive people without access to ARVs. Rather avoidance coping in the form of non-disclosure was seen by HIV-positive patients to be a rational life-prolonging strategy in so for as it constitute a last resort against stigmatization, hopelessness and despair (18). Contrary to the above a qualitative study (19),

describes the emergence of a particular destructive counterculture in areas of South Africa where by a minority of HIV-infected people like those HIV –positive men who engage in "bare-backing" may be choosing to spread HIV deliberately. And still, Patients taking ARV drugs in Senegal often hide their medicines although most of their families are supportive, some relatives still reject them. Neighborhood or professional relationship still conveys a danger of rejection, especially in content of conflict or competition (20). Expressed multiple fears of AIDS related stigma and discrimination and worries about ability to get married have children and disclosing their need were also major problems of PLWHA with HAART in a Mumbai study (21).

As the quality of life for patients on antiretroviral drugs improves, frequent contact with health care providers may be difficult. In Dakar, missing monthly appointments to obtain antiretroviral drugs was the first reason for non-compliance among patients in their second year of treatment. Most patients had returned to their jobs, often requiring stays far from home, especially for sailors and retailers. A visit to the Hospital to obtain antiretroviral drugs often takes several hours, which is inconvenient for all patients (22).

The variety of treatment options improves the chances of virological success for patients with prior treatment failure, but it also lengthens patients' experience with treatment and their short- and /or long term side effects. Now that some therapeutic options may provide equivalent levels of virologcal success, the assessment of HRQoL in these patients have become priority, for their wellbeing may be influenced not only by their response to treatment but also by other dimensions including treatment related toxicity. At the same time, psychosocial factors may mediate patients' self-perception of their health (23).

To summerize, studies on quality of life of PLWHA on HAART have reported drug side effect, adherence, economic, access to treatment centers and employment problems. In addition, clincal evaluative researches have reported imperfect immune restoration even if patients stay on treatment for long periods. Moreover, worries about marriage, having children and fear of rejection have become serous problems of these people. Now the question is which of the treatment and care setting, which social,economic and demographic part of the community is gaining benefit and which not. How could we assess the the program gaps and fill them.

Therefore, assessing the quality of life of PLWHA that are on HAART is an important tool in the success of prevention and treatment programs, especially in view of current initiatives such as three by five and PEPFAR.

OBJECTIVES

General:

To assess the quality of life of people living with HIV/AIDS on highly active antiretroviral therapy.

Specific:

A) To assess the Quality of Life (QoL) of People Living With HIV/AIDS (PLWHA) on Highly Active Antiretroviral Therapy (HAART) as determined by clinical variables.

B)To identify factors determining the quality of life of PLWHA on ART as compared to their neighbors.

C)To identify the most affected quality of life dimension in PLWHA on HAART as compared to their neighboring comparison group.

D)To evaluate the performance ability of the Amharic Medical Outcomes Study-HIV(MOS-HIV) survey instrument that has been translated from the standard MOS-HIV English version.

SUBJECTS AND METHODS

Description of the study area and subjects.

The study was carried out in ALERT (All African Leprosy Eradication and Rehabilitation Training Center) or Zenebework hospital; a Non Governmental Organization providing Tuberculosis (TB) and Leprosy treatment and rehabilitation services. More over ALERT has commenced free ART since 2004.The non equivalent controls were selected from Kolfe keranio and Nifasilk-Lafto subcities where the study participants are residing.

The Study population consisted two groups: the source population for the ALERT (Study group) included PLWHA on HAART and; that of the comparison group were nearest households or neighbors of the HAART participants residing in Kolfe Keranio and Nifasilk-lafto subcities.

All subjects provided verbal informed consent before participating in the study.

PLWHA on HAART were excluded from participating in the study if they were under 18 years of age, have been on treatment for less than 3 months, had incomplete patient chart, and/or did not provide verbal consent.

Instrument and sample size

This study was a cross-sectional comparative study. For both cases and nonequivalent controls data on demographic and socio-economic variables were collected using a pre tested questionnaire while, clinical variables of HAART group was collected from their hospital charts. In addition, information on health related quality of life variables was also collected by the

standard - Medical Outcome Study-HIV (MOS-HIV) questionnaire. Overveiw of the MOS-HIV scales is presented in table 4.

Sample size for the HAART group was determined using the following eligibility criteria: age >18 years, medical diagnosis of a chronic illness particular to the subject concerned must be not less than 3 months (24,25); as it is assumed that QoL scores for chronic disease patients on drug treatment changes significantly after three months. The definition of a chronic condition adapted is a medical condition that has lasted or is expected to last more than 3 months (26), volunteer (27), on free treatment, have no serious mental illness, currently on follow-up and, had complete patient chart.

As the study focus on measuring health related quality of life in both groups; the proportion of PLWHA on HAART and neighborhood comparison group with good quality of life score in developing countries are found to be between (33%-59.8%) and (49.4%-66.8%) respectively. This study used the average of the two proportion to attain adequate number of participants. And a 1to2 ratio of the size of the two groups was used to decrease variability in some of the independent variables.

Based on the above criteria, sample size was determined by the general formula that has been used by researchers in cross-sectional comparative studies.

The formula was: let $P = \underline{P1 + rP2}$

1+r and

$$n_1 = \frac{[Z\alpha/2\ \sqrt{(1+1/r)\ P\ (1-P)}\ + Z\beta\ \sqrt{P1(1-P1) + P2\ (1-P2)}]}{(P1-P2)^2}$$

Where, P is proportion of outcome of interest in the general population (0.503)

P_1: proportion of outcome of interest in neighborhood comparison group (0.581)

P_2: proportion of outcome of interest in "HAART" group (0.462)

r: is ratio of the size of sample 2 to sample 1,in this case, 1:2

$Z\ \alpha/2$; value of standard normal deviate at level of significance, 1.96 at 95% CI, α=0.05

Z_β; power (1-β),i.e; 80%.

With additional assumption of 20% non response rate the total sample size became 795; 265 for the “HAART” and 530 for “neighborhood” comparison groups.

Sampling procedure

After obtaining the list of 1600 PLWHA on HAART form the hospital records, systematic random sampling was employed to obtain 265 study subjects on ART. The first participant was Identified using (k=6) a currency note, while the neighborhood participants were recruited based on the nearest neighbor to the study subject principle. Adult neighbor to the right and left of study subjects were considered eligible. If there were more than one adult in the nearby

household; the individual that match the cases with regard to age and sex is selected. If there were two or more individuals that match the cases, one of them is randomly selected..

Data collection Tools

Two senior nurses extracted the data on clinical characteristics of PLWHA on HAART according to the selection criteria while, 4 grade 12 complete data collectors collected the demographic and quality of life information of PLWHA and the comparison group (neighbors). The principal investigator supervised the data collection process. Prior to beginning the day's work, every data collector obtained information about the address (Sub city, Keble, Home No and special area (local names) of the study subjects so as to gain access to their right and left neighbors. All data collectors and supervisors took two days training before starting the survey.

Data for both groups were collected in two ways:

1. Relevant clinical data such as CD4+ count, weight…etc. of HAART group were collected from their medical charts.
2. MOS-HIV-QOL survey instrument was administered to PLWHA on HAART and their neighbors.
3. Information on demographic and socioeconomic variables was collected using pre tested interview questinnaires.

In this study selected clinical information has been planned to be extracted form the patient's chart using data extraction sheet. Unfortunately the clinical information registered in the

patient's chart has left much to be desired as the data available are either incomplete or not timely filled. As a result, analysis of certain selected clinical variables was excluded.

Quality of life questionnaire

The study questionnaires measure HRQoL socio-demographic and health information. To measure HRQoL the medical Outcomes Study HIV health survey (MOS-HIV) instrument that has shown good reliability and validity in a wide variety of settings was used. The 35-item questionnaire included 11 dimensions of physical and mental functioning. These are perceived health, bodily pain, QOL, role functioning social functioning ,vitality, mental heath, health distress, cognitive functioning, physical functioning and health transition. Scoring of the MOS-HIV was done by summing and linearly transforming raw scores of the 35 individual items into 11 dimension scores that range from 0 to 100, a higher score indicates better functioning. A physical and mental scores was also calculated (4). The English version of MOS-HIV was translated to Amharic language using standard methods. The intent is to retain conceptual equivalence of questions rather than to perform literal translations. Two independent forward translations and three independent backward translations was performed by Amharic speakers fluent in English (4). Translation of the MOS-HIV into the Amharic language was done using the standard two independent forward and three independent back ward translation (4) by Amharic speaking English language post graduate students of AAU. Questionnaire were administered face - to - face in private rooms for PLWHA and in the homes of comparison group respondents during December-February 2006.

To evaluate responsiveness of Amharic translated MOS-HIV interview questionnaire a three day pretest of 10% sample size was employed in PLWHA on HAART residing in the neighboring Gulele sub city.

Operational Definitions

Perceived Health: Personal evaluation of health in general, including current and prior health, outlook, resistance to illness.

Bodily Pain: Subjective feeling of bodily distress or discomfort.

Physical Functioning: Limitation in Performing physical activities including self-care.

Role Functioning: Performance of usual role activities such as working at a job, housework, childcare, community activity and volunteer work.

Vitality: Personal evaluation of one's energy to do things that one wants to do.

Health Distress: Psychological distress due to health.

Cognitive Functioning: Cognitive problems such as forgetfulness, difficulty in paying attention difficulty in decision making and concentration problems.

Social Functioning: Functioning normal Social activities with family, friends, neighbors, marital functioning and social problems.

Quality Of Life: Personal evaluation of how things have been going for oneself.

Mental Health: Positive and negative psychological states including anxiety, depression, loneliness, positive affect and feeling of belonging.

Health Transition: Patient's current perception of mental and physical health condition.

Item: Specific questions that make up a dimension.

Physical Health Summary (PHS) Score: A summary score containing 6 dimensions that are; Perceived Health, Bodily Pain, Physical Functioning, Role Functioning, Vitality and Health Transition.

Mental Health Summary (MHS) Score: A summary score containing 6 dimensions that are; Health Distress, Cognitive Functioning, Social Functioning, Quality Of Life and Mental Health.

Dimension: A practical & meaningful set of related actions, tasks or areas of life. It relies on standard self report scales that ask about different aspects of life, including physical symptoms, pain and fatigue, ability to carry out chores and care for oneself, mental health, work performance, social activities and general health and well-being.

Data quality control

The performance of the Amharic version of the MOS-HIV was evaluated by examining feasibility, reliability and evidence for validity. Feasibility of conducting quality of life interviews in urban Ethiopian setting was evaluated by examining the presence of missing item responses; interviewer-reported acceptability, and the time and ease of administration. Cronbach's α coefficient was also used to estimate reliability for multi-item scales. In general coefficient >0.70 indicates satisfactory reliability (4).The validity of QoL scores was evaluated in two ways: It is hypothesized that; (1) There would be significant differences of mean scores for HIV-positive and non-HIV participants; (2) QoL scores would differ significantly between groups of participants with varying number of clinical variables.

Variables for the study

Dependent variables (dimensions)

- Perceived health
- Bodily pain
- QOL
- Role functioning
- Social functioning
- Health transition
- Vitality
- Mental health
- Health distress
- Cognitive functioning
- Physical functioning

Independent variables

- Clinical disease stage
- Duration of treatment
- Viral load (CD4+count)

Confounding factors

- Age
- Family size
- Marital status
- Employment
- Income
- Religious affiliation
- Education

Ethical clearance

Ethical clearance was obtained from the ethical clearance committee of Addis Ababa University's, Medical Faculty. All participants have given their verbal consent and all information were kept strictly confidential and a code number was used instead of name .

Data entry processing and analysis

Data entry was performed by the principal investigator and data entry clerks. The principal investigator has processed and analysed the data using SPSS 13 statistical software.

RESULTS

Feasibility and reliability analysis

There was no missing response to the MOS-HIV. The MOS-HIV took approximately 25 minutes to complete and was well tolerated by the responder. Interviewers reported that some respondents had difficulty understanding concepts and ratings stated in physical activity items such as, 'Does your health limit you in the kinds of activities like vigorous, moderate…etc activities' and role function items like; 'Does your health keep you from working at a job or around the house?'

Cornbach's α coefficients were > 0.70 for 6 out of 8 multi-item scales and had values ranging from .57 to .80 for PLWHA on HAART, vitality (.58), General health (.57), Health distress (.571) and Quality of Life (.58).

Correlations between scales

To evaluate how distinct each scale is form other scales in the same matrix, correlations among all scales was computed and compared with reliability estimates (Table 1).

Table 1. Pearson's correlation coefficients for inter-scale association and cronbach's α (On the diagonal) for the eleven MOS-HIV scales Addis Ababa, June 2006.

Scale	GH	BP	PF	RF	SF	MH	VT	HD	CF	QOL	HT	
GH	(.694)											
BP	.735**	(.889)										
PF	.602**	.619**	(.735)									
RF	-.025	.090*	-.080*	(.781)								
SF	.575**	.601**	.574**	.011	(§)							
MH	.571**	-.554**	.524**	-.165**	.458**	(.726)						
VT	.733**	-.648**	.648**	-.012	.628**	.601**	(.697)					
HD	.679**	-.591**	.594**	.022	.557**	.604*	.683**	(.715)				
CF	.565**	-.485**	.473*	.019	.430*	.496*	.523**	.569*	(.722)			
QOL	.691**	-.582**	.457*	-.063	.491**	.395**	.553**	.459**	.388**	(§)		
HT	.702**	-.620**	.494**	-.084*	.413**	.380*	.535**	.486**	.362**	.717**	(§)	

Abbreviations
General Health (GH), Bodily Pain (BP), Physical Functioning (PF), Role Functioning (RF), Social Functioning (SF), Mental Health (MH), Vitality (VT), Health Distress (HD), Cognitive Functioning (CF), Quality Of Life (QOL) and Health Transition (HT). **P < 0.05, *P < 0.001 (§) no reliability estimate for a single item scale, () reliability coefficients

A reliability coefficient can be thought of a correlation between a scale and itself. To the extent that the correlation between two scales is less than their reliability coefficients, there is evidence of unique reliability, the scales are performing like alternate form measures of the same concept, and there is no evidence that they have unique reliable variance. Thus, evaluation of inter-scale correlations helps to determine weather each scale is measuring a distinct concept (28). As can be seen from the table correlation coefficients were greater than 0.4 for 9 out of 11 scales signifying high correlation.

Socio demographic characteristics of the study subjects

A total of 768 respondents participated in the study. Two hundred sixty two (34.1%) of them were PLWHA on HAART, who are currently on follow up in Zenebework Hospital and 506 comparison group respondents, all from Kolfe-Keranio and Nifasilk-lafto sub cites in Addis Ababa participated in the study for an over all response rate of 96.6%. Summary of the socio demographic characteristics of the study subjects is shown in table 3. The study population is mostly in the age range 25-34 years (50.7% Vs 47.7%), total mean= 33.2±8.7, (34.6±8.5 Vs

32.6±8.06) for PLWHA and their neighbors respectively. In both groups female sex has dominated, 153 (58.4%) Vs 316 (62.5%) for PLWHA and the comparison group respectively.

Most of the participants in the HAART group (53.8%), had attained education level of grade 9 and above while, 71.3% of the comparison group had little or no education (below grade 6).

Table 2: Distribution of the HAART and comparison groups by socio demographic characteristics in Zenebework Hospital, Kolfe-Keranio and Nifas-Silk Lafto sub cites, Addis Ababa, 2006.

Variable	PLWHA with HAAR (n =262) (%)	Neighbors (n = 506) (%)	Total (n = 768) (%)
Mean age (SD)	34.57(8.49)	32.63(8.06)	33.29(8.25)
Age category			
≤35	55	60.1	58.3
36+	45	39.9	41.7
Sex			
Male	41.6	37.5	38.9
Female	58.4	62.5	61.1
Educational status			
≤ Primary	46.2	71.3	62.8
Secondary+	53.8	28.7	37.2
Religious status			
Orthodox	77.4	66	69.9
Others	22.6	44	30.1
Marital status			
Married	34	39.7	37.8
Not married	66	60.3	62.2
Employment			
Employed	43.1	52.4	49.2
Unemployed	56.9	47.6	50.8
Family size			
≤2	29.4	42.1	37.8
3+	70.6	57.9	62.2
Monthly income			
≤200	63.4	60.3	61.3
201+	36.6	39.7	38.7
Living condition			
Alone	19.1	25.7	23.4
With family/ relatives	80.9	74.3	76.6

Two hundred three (77.5%) of the HAART participants were from the Orthodox faith as compared to 334 (66%) of non- HAART group in the same faith. With regard to marital status, 89 (34%) followed by 68 (26%) of the HAART group were married and widowed respectively whereas, 201(39.7%) and 196 (38.7%) of the Non- HAART group were married and single respectively.

Almost fifty seven percent Vs 47.6% of the HAART and Non-HAART groups respectively, were jobless, student or housewife. More than half of the participants of both groups were from Kolfe-Keranio Sub city. Majority of the participants of HAART group 185 (70.6%) had household size of more than 2 as compared to 375 (74.1%) of non- HAART had similar household size. The proportion with monthly income less than 200 ETB for the HAART and non- HAART group were 63.4% and 60.3 % respectively. In addition, 212 (80.9%) of the HARRT group and 376 (76.6%) of the non-HAART group live with their families and/or relatives.

Clinical characteristics of PLWHA on HAART

The clinical characteristics of PLWHA on HAART subjects are presented in table 3. As shown in the table, the dominant clinical stages at start of treatment and at the time of this study were stage three (50%) and stage two (38.2%) respectively. Frequency and percentages of selected clinical variables is presented below in Table 3.

As most of the data available on clinical staging were not updated after initial entry to the open cohort, their data may not indicate actual current status. Functional status for most of the cases was, working (97.3%), as opposed to the presence of lots of cases in clinical stages three and four. Duration of treatment was equally distributed above and below 36 weeks. CD4+ cells count was also found to have similar counts during entry to the cohort and at time of this survey.

Table 3. Frequencies and percentages of selected clinical characteristics of PLWHA on HAART, Zenebework Hospital, Addis Ababa, 2006.

Characteristics		N	%
WHO Clinical staging[1] at study period			
	One	53	20.5
	Two	99	38.2
	Three	94	36.3
	Four	13	5
Functional status[2]	Working	248	97.3
	Ambulatory	5	2
	Bed ridden	2	0.8
Duration of Treatment in weeks			
	≤ 36	132	50.6
	37+	129	49.4
CD4+ cells count/mm³ at start of HAART			
	≤ 150	157	61.6
	151+	98	38.4
CD4+ cells count/mm³ at time of study			
	≤ 150	139	57.7
	151+	102	42.3

[1] WHO clinical staging: ¡. Assymptomatic, persistent generalized lymphadenopathy.

¡¡. Weight loss<10% of body weight, minor mucocutaneous manifestations, Herpes zoster within the last 5 years, recurrent upper respiratory infections.

¡¡¡. Weight loss<10% of body weight, unexplained chronic diarrhea, unexplained prolonged fever, oral candidiasis, oral hairy leukoplakia, PTB within the last year, severe bacterial infection.

¡¡¡¡. Wasting syndrome, PCP, Toxoplasmosis in the brain, Cryptosporidiosis with diarrhoea >1mo., Crryptococcosis EPTB, disseminated TB, non typhoid salmonella septicemia, Lymphoma, Kaposi's sarcoma, HIV encephalopathy, candidiasis of esophagus, disseminated endemic mycosis, progressive multifocal leukoencephalopathy.

[2] working: Works normal activity

Ambulatory: Works >50% of the day
Bedridden: In bed > 50% of the day

Quality of life

Overview of the QOL (MOS-HIV) scales is presented in table 4 for simplicity.

Scale	**No of items**	**Acronym**	**Specification**
Perceived Health	5	GH	Personal evaluation of health in general, including current and prior health, outlook, resistance to illness.
Bodily Pain	2	BP	Subjective feeling of bodily distress or discomfort.
Physical Functioning	6	PF	Limitation in Performing physical activities including self-care.
Role Functioning	2	RF	Performance of usual role activities such as working at a job, housework, childcare, community activity and volunteer work.
Vitality	4	VT	Personal evaluation of one's energy to do things that one wants to do.
Health Distress	4	HD	Psychological distress due to health.
Cognitive Functioning	4	CF	Cognitive problems such as forgetfulness, difficult paying attention…etc.
Social Functioning	1	SF	Functioning normal Social activities with family, friends, neighbors, marital functioning and social problems.
Quality Of Life	1	QOL	Personal evaluation of how things have been going for oneself.
Mental Health	5	MH	Positive and negative psychological states including anxiety, depression, loneliness, positive affect and feeling of belonging.
Health Transition	1	HT	Patient's current perception of mental and physical health condition.

Table 4. Overview of the (MOS-HIV) QOL scales.

As can be seen from the table the numbers of items (35) stated are the components of the 11 dimensions of the MOS-HIV (QOL) instrument. The eleven scales are further categorized in to a six dimension physical health and a five dimension mental health summary scores.

Item level statistics group comparison

Comparison of percent of respondents reporting substantial physical and mental impairments between PLWHA with and their neighbors is depicted in table 5. Between 7.3 and 33.6% of PLWHA on HAART experienced substantial impairments in some aspects of QOL. For instance, almost 28% reported health limitation to moderate activities like washing clothes, moving a bundle of firewood…etc. from one place to another. A tenth reported pain interference to normal work and one-third agreed to have health limitation to work at a job or around the house. More than a quarter felt nervous while a tenth felt tired in the last 30 days.

Almost one-fifth reported problems of reasoning or decision making such as making new plans or learning new things. Similar proportion admitted the presence of difficulty in keeping attention for long.

In all the selected items the proportion with substantial impairments were greater for PLWHA on HAART than their neighbors with statistically significant differences in nearly all items.

The items with tremendous proportion of cases with substantial impairments in PLWHA on HAART were limitation to moderate activities (27.9%), health limitation to work at job (33.6%), feeling of nervousness (25.2%), difficulties in reasoning (18.7%) and difficulty in keeping attention for long (19.5%); in the last 30 days.

Table 5. Percent of respondents reporting considerable physical and mental impairments, PLWHA and their neighbors, Kolfe and Nifasilk sub cities, Addis Ababa, July 2006.

Dimension	Type of impairment measured	PLWHA With HAART	Neighbors of PLWHA With HAART	P-value
Physical Functioning	Health limitation to moderate activities[1]	27.9	4	0.000*
Bodily Pain	Pain interference to normal work[2]	10.3	4.3	0.000*
Role Functioning	Health limit work at a job or around the house[3]	33.6	11.1	0.000*
Mental Health	Felt nervous[a]	25.2	9.3	0.000*
Vitality	Felt tired[a]	9.5	3.6	0.001**
Health Distress	Weighed down by health problems[a]	7.3	4.5	0.118
Cognitive Functioning	-Difficulty reasoning[a]	18.7	4.9	0.000*
	-Difficulty keeping attention for long period[a]	19.5	5.3	0.000*

Substantial impairments measured
[1] 'yes, limited a lot' * $p < 0.0001$
[2] 'quite a bit' ** $p < 0.005$
[3] 'yes' [a] ' a good bit of the time'

Clinical information and scale analysis

Results of mean MOS-HIV scale scores for two categories of duration of treatment, clinical stages and CD4+ cells count/mm³ is presented in table 6.

Table 6. Mean MOS-HIV and measures of correlation between MOS-HIV scale scores and the three clinical variables for PLWHA on HAART, Zenebework Hospital, Addis Ababa, 2006.

	GH	BP	PF	RF	SF	MH	VT	HD	CF	QOL	HT	PHS
Duration of treatment in weeks (n=261)												
< 36	71.62	41.87	75.75	77.46	84.46	71.23	70.10	84.43	74.52	81.96	88.18	61.19
37+	76.38	37.77	79.28	79.45	85.78	69.5	75.61	85.4	79	84.96	90.54	64.13
P-value	0.014*	0.136	0.008**	0.062	0.651	0.409	0.010*	0.601	0.129	0.157	0.249	0.002**
Clinical stage												
1-2	75.70	36.18	79.71	78.45	86.95	71.03	75	86.62	77.43	83.15	90.78	63.69
3-4	71.27	45.36	74.29	78.27	82.24	69.31	69.31	82.2	75.46	83.55	87.1	61.01
P-value	0.025*	0.001**	0.000**	0.865	0.113	0.421	0.009**	0.018*	0.514	0.855	0.077	0.006**
CD4+ cells/mm³												
< 150	74.35	39.66	77.6	78.5	86.62	70.5	74.05	85.4	77.22	83.69	89.17	63.02
151+	73.7	39.7	77.55	78.31	83.16	70.23	71.34	84.48	75.76	84.28	90	62.25
P- v	0.758	0.989	0.971	0.867	0.245	0.899	0.224	0.622	0.633	0.782	0.689	0.427

*P < 0.05**P < 0.001Abbreviations: GH= General Health; BP= Bodily Pain; PF=Physical Functioning; RF=Role Functioning; SF=Social Functioning; MH= Mental Health; VT=Vitality; HD=Health Distress; CF=Cognitive Functioning; QOL= Quality Of Life; HT= Health Transition; PHS=Physical Health Summary; MHS=Mental Health Summary. ˚ Performance stage 1: assymptomatic, normal activity; 2: symptoms, but nearly fully ambulatory; 3: in bed more than normal but <50% of the normal daytime during the previous month; 4: in bed > 50% of normal daytime during the previous month.

For all except the bodily pain and mental health scales, PLWHA with duration of treatment above 36 weeks had higher mean scores than those with duration less than 36 weeks. Significant association was found between the MOS-HIV scales (dependent variables) and duration of treatment for general health (GH), physical functioning (PF), vitality (VT) and physical health

summary (PHS) (P< 0.05 for all). The dimensions with significant association with duration of treatment were all Physical health aspects of the MOS-HIV.

Similar results were also found between clinical stages and the MOS-HIV. Those PLWHA in clinical stages 1-2 obtained higher mean scores than those in stages 3-4 except the bodily pain and health transition (HT) scales. Higher differences were observed in physical functioning (mean 79.71 Vs 74.29) and social functioning (86.95 Vs 82.24) for stages1-2 and 3-4 respectively. Statistically significant associations were seen in general health (P<0.05), bodily pain (P<0.05), physical functioning (P<0.0001), vitality (P<0.001), health distress (P<0.05) and physical health summary (P<0.05) where, some mental components of the MOS-HIV were found. No trend was observer in the on the MOS-HIV dimension scores and CD4+ cell counts.

The independent clinical variables that were associated in bivariate analysis above were further treated as dependent variables and selected MOS-HIV dimensions as independent variables (table 7), each added to the regression model stepwise indicated Physical health Functioning dimension to be an important explanatory variable for clinical staging. The role Physical dimension was also found to a predictor of duration of treatment.

Table 7. Linear regression analysis of selected clinical characteristics and the MOS-HIV quality of life scales for PLWHA on HAART, Zenebework Hospital, Addis Ababa, 2006.

		Clinical stage		Duration of treatment	
Step	Variable	OR	(95% CI)	OR	(95% CI)
1	Physical Functioning	0.959	(-0.042, .959)*	1.027	(0.995, 1.059)
2	Role Functioning	0.990	(0.960, 1.02)	1.034	(1.003, 1.065)**
3	Vitality	1.000	(0.98, 1.02))	1.009	(0.990, 1.029)
4	Health Transition	1.005	(0.985, 1.024)	0.996	(0.977,1.015)
5	General Health	1.001	(0.979, 1 .023)	1.012	(0.99, 1.034)

6	Bodily Pain	1.012	(0.997, 1.027)	1.003	(0.989, 1.018)
	Constant				-5.93*
	-2 likelihood				346.516
	Model Chi-square				15.27**

* P < 0.005; P** < 0.05

Health Related Quality of Life and related factors

Scale level QOL scores

Results for each of the 11 MOS-HIV scale scores and the two summary scores are presented in table 8. As observed and expected, PLWHA on HAART had lower scores than their neighbors for all scales except Bodily Pain and QOL; differences were statistically significant except for

Table 8. MOS – HIV Scales and mean scores for PLWHA and their neighbors, Zenebework Hospital, Addis Ababa, 2006.

Scale	Abbreviation	No of items	Cronbach's α	Mean scores±SD PLWHA	Neighbors	Difference in Mean	Pª value
General Health	GH	5	.694	73.94±15.65	80.48±18.66	-6.53	.000*
Bodily Pain	BP	2	.889	39.76±22.19	31.76±19.01	7.99	.000*
Physical Functioning	PF	6	.735	77.43±10.7	84.65±8.13	-7.21	.000*
Role Functioning	RF	2	.781	78.43±8.62	78.41±8.55	.322	.622
Social Functioning	SF	1	_³	85.05±23.43	90.77±18.03	-5.7	.000*
Mental Health	MH	5	.726	70.33±16.86	82.77±13.86	-12.44	.000*
Vitality	VT	4	.697	72.78±17.14	83.48±17.61	-10.69	.000*
Health Distress	HD	4	.715	84.89±14.8	94.65±12.26	-9.76	.000*
Cognitive Functioning	CF	4	.722	76.81±23.8	88.88±18.32	-12.07	.000*
Quality Of Life	QOL	1	_³	83.51±17.06	82.49±18.69	1.02	.460
Health Transition	HT	1	_³	89.31±16.47	89.6±16.17	-.29	.814
Physical Health Summary	PHS	_	_	62.61±7.75	67.29±8.65	-4.68	.000*
Mental Health Summary	MHS	_	_	69.18±12.02	78.45±11.23	-9.26	.000*

Pª, t-test P value for differences in mean between PLWHA and their Neighbors
_³, test not applicable for single item concept
* < .0001

quality of life, health transition and role functioning subscales. Mean differences between scores of PLWHA and the comparison group ranged from -10.44 to 7.99 points on the 100-point scale. The largest point differences were seen for dimensions measuring General Health, Physical

Functioning, Social Functioning, Mental Health, Vitality, Health Distress and Cognitive Functioning.

Socio demographic factors and Physical Health Summary score

As it was possible (4), Physical Health Summary was calculated by summing the scale scores of its six dimensions that are perceived health, bodily pain, physical functioning, role functioning, vitality and health transition and linearly transforming them in to a 0 to 100 point single summary score.

The analysis made to investigate influence of selected socio demographic variables on this single mean Physical Health Summary score is illustrated in table 9.

Table 9. Association of Socio demographic characteristics and PHS score for PLWHA on HAART and their neighbors, Kolfe and Nifasilk sub cities, Addis Ababa, 2006.

Variable	Mean PHS score			
	PLWHA	Neighbors of PLWHA	Unadjusted 95%CI of the mean difference	Adjusted[1] 95%CI of the mean difference
Age				
≤ 35	62.79±8.07	68.39±7.78		
36+	62.28±7.96	64.96±9.87	(3.35, 5.83)*	(1.15, 3.64)*
Sex				
Male	62.85±7.47	67.94±7.69		
Female	62.43±7.96	66.9±9.16	(3.47, 5.96)*	(.391, -2.038)
Education				
≤ Primary	59.54±8.64	64.98±9.57		
Secondary+	64.08±6.83	69.8±6.67	(4.4, 6.84)*	(3.58, 5.91)*
Marital s.				
Married	63.8±6.53	67.3±8.26		
Unmarried	61.99±8.25	67.29±8.9	(3.4, 5.9)*	(-1.82, .622)
Employment				
Employed	63.71±6.88	67.3±8.26		

Unemployed	61.77±8.25	67.29±8.9	(3.13, 5.58)*	(-4.65, -2.33)
Family size				
< 2	61.81±7.38	67.35±8.34		
3+	62.94±7.89	67.25±8.88	(3.46, 5.98)*	(-.95, 1.50)
Monthly income				
< 200 ETB	62.04±7.94	65.67±9.34		
201+ ETB	63.59±7.34	69.75±6.8	(3.35, 5.81)*	(2.04, 4.43)
Living condition				
Alone	63.16±7.29	66.63±9.38		
With family/ relatives	62.48±7.86	67.52±8.36	(3.46, 5.96)*	(-.97±1.83)

F-test based on linearly independent pair wise comparison at α=0.05
* P<0.05

Accordingly, neighbors of PLWHA on HAART whose age is greater than 35, males, attendants of educational level secondary and above, married, house hold size more than 3 and those with monthly income of greater than 200 ETB obtained higher mean PHS scores as compared to their equivalent HAART participants, all with statistically significant association at $P < 0.05$. But after controlling for confounders significant associations were observed in age groups less than 36 secondary plus attendants and in the employed, the 95% CI of the mean difference (1.15, 3.64), (3.58, 5.91), and (-4.65, -2.33) respectively.

Those people who were living alone and had household size of more than two of the HAART group scored higher mean PHS score as opposed to the their neighbors who got higher scores with family size of less than three. This result was statistically significant for both the cases and non-equivalent controls. On the other hand, those PLWHA on HAART who live alone obtained higher mean physical health summary score while their neighbors who were living with families or relatives recorded high mean PHS score points. But, the result failed to show significance after adjustments for the cofounders.

Socio demographic factors and Mental Health Summary score

Using the principle applied to calculate PHS, MHS was also calculated from 5 dimensions that are Health Distress, Cognitive Functioning, Social Functioning, Mental Health and Quality of Life.

Analysis made to assess the level of mental health summary scores in contrast to socio demographic variables is presented in table 10.

Table 10. Association of Socio demographic characteristics and MHS score for PLWHA on HAART and their neighbors, Kolfe and Nifasilk sub cities, Addis Ababa, 2006.

Variable	Mean MHS score			
	PLWHA	Neighbors of PLWHA	Unadjusted 95%CI of the mean Difference	Adjusted 95%CI of the mean Difference
Age				
≤ 35	69.66±11.36	79.87±9.84		
36+	68.34±13.14	75.43±13.26	(7.43,10.84)*	(-5.05, -1.62)*
Sex				
Male	71.77±10.67	80.25±9.73		
Female	67.33±12.61	77.37±11.9	(7.70, 11.11)*	(-5.08, -1.76)*
Education				
≤ Primary	63.97±12.97	75.35±12.33		
Secondary+	71.68±10.71	81.83±8.74	(8.94, 12.29)*	(5.26, 6.45)*
Marital s.				
Married	70.64±10.47	78.49±11.07		
Unmarried	68.43±12.71	78.42±11.36	(7.5,10.94)*	(-2.44, .92)
Employment				
Employed	71.24±11.15	80.89±8.08		
Unemployed	68.43±12.46	75.77±13.42	(7.14, 10.53)*	(-6.21, -3.006)*
Family size				
≤ 2	67.57±12.81	78.29±10.97		
3+	69.85±11.65	78.57±11.43	(7.64, 11.11)*	(-.799, 2.59)
Monthly income				
≤ 200 ETB	67.28±12.32	76.83±12.04		
201+ ETB	72.46±10.79	81.21±9.24	(7.43,10.53)*	(3.13, 6.42)*
Living condition				
Alone	69.12±12.73	77.03±11.86		
With family/ relatives	69.2±11.88	78.94±10.98	(7.63,11.08)*	(-.56±3.29)

F-test based on linearly independent pair wise comparison at α=0.05; * P<0.05

Accordingly, non-HAART participants who were aged less than 36, males, secondary plus educational attendants, the married, the employed, the small family sized, high income groups and those living with family obtained higher Mental Health Summary scores as compared to their HAART counterparts (P<0.05). After adjustments age, sex, employment and income were independently associated with mental health summary scoring. Age less than 36, males, higher income greater than 200 ETB and the employed were more likely to obtain higher mean Mental Health summary score with the 95%CI of the mean difference; (-5.05, -1.62), (-5.08, -1.06), (3.13, 6.12) and (-6.21, -3) respectively at $P < 0.05$.

In general neighbors of PLWHA obtained higher mean physical and mental health total mean score as compared to PLWHA on HAART in many of the socio demographic factors. After adjustments for the variability between the two groups statistically significant differences were observed in age, employment and education aspects for the physical health score. Still, age, sex, income and employment were also associated with the scoring function of the mental health total score. Age and employment remained to have significant association with both summary scores.

Multivariate analysis of explanatory variables with Mental and physical summary scores

The socio demographic variables that were found to have significant relationship with QoL scores were further analyzed using logistic regression separately for the cases and controls.

As a result, education was an important predictor of physical health summary.

Education was also found to be an important explanatory variable for a better mental health-quality of life score in PLWHA.

It wouldn't make pessimistic, if one speculates education as a bases for income generation and employment opportunity.

Table 11. Logistic regression of the net effect of the explanatory variable on respondent's Quality of Life, PLWHA and their neighbors, Addis Ababa, 2006.

Physical Health Summary (PHS)					
Explanatory variable		PLWHA		Neighbors	
		Odds Ratio	(95%CI)	Odds Ratio	(95%CI)
Sex	Male (1)				
	Female	0.935	(0.537, 1.66)	1.24	(0.822,1.872)
Age	≤35 (1)				
	36+	0.791	(0.456, 1.372)	0.507	(0.33, 0.777)**
Education	2ndary +(1)				
	≤Primary	0.410	(0232, 0.723)**	0.453	(0.306, 0.672)***
Marital S.	Married (1)				
	Unmarried	0.679	(0.391, 1.179)	1.302	(0.862, 1.967)
Family Income	≤200ETB	1.174	(0.651, 2.117)	0.551	(0.354, 0.895)**
	201+ ETB (1)				
Employment	Employed (1)				
	Unemployed		(0.396, 1.209)	0.691	(0.463, 1.054)
	Constant		0.089	-0.009	
	-2 likelihood		344.901	642.064	
	Model Chi-square		15.724*	58.444****	

*P<0.05; **p<0.005; ***p<0.0001; ****p<0.0005 ETB; Ethiopian Birr; (1); Reference category

The multivariate analysis performed for the comparison group identified; age and education to be important predictors of the Physical Health Summary (PHS) score while, education together with

employment were found to be explanatory variables for better score points of Mental Health Summary variable.

Table12. Logistic regression of the net effect of the explanatory variable on respondent's Quality of Life, PLWHA and their neighbors, Addis Ababa, 2006.

Mental Health Summary Score (MHS)					
Explanatory variable		PLWHA		Neighbors	
		Odds Ratio	(95%CI)	Odds Ratio	(95% CI)
Sex	Male (1)				
	Female	0.592	(0.338, 1.036)	0.806	(0.514, 1.262)
Age	≤35 (1)				
	36+	0.646	(0.368, 1.134)	0.561	(0.359, 0.877)
Education	2ndary +(1)				
	≤Primary	0.459	(0.259, 0.812)**	0.338	(0.219, 0.521)***
Marital S.	Married (1)				
	Unmarried	1.157	(0.666, 2.01)	1.056	(0.681, 1.638)
Family Income	≤200ETB	0.726	(0.402, 1.312)	0.634	(0.393, 1.023)
	201+ ETB (1)				
Employment	Employed (1)				
	Unemployed	0.678	(0.388, 1.168)	0.611	(0.396, 0.945)*
Constant			0.021	0.781***	

-2 likelihood	340.382	577.435
Model Chi-square	21.849**	67.178***

(1); Reference category

*P<0.05; **p<0.005; ***p<0.0001; ****p<0.0005ETB; Ethiopian Birr

In both cases education has become a common variable to explain good mental and physical summary scores in the HAART and their neighboring groups.

DISCUSSION

Improving the quality of life is often the major goal in the provision of health care and clinicians and policy-makers recognize the importance of measuring health-related quality of life (HRQoL) in informing patient management, policy decisions and resource allocation (29).

There has been few quantitative assessment of HRQoL of PLWHA on HAART in Africa including Ethiopia. Assessing QOL dimensions in which PLWHA are lacking is of a tremendous impact in the HIV/AIDS campaign. Moreover, evaluating the performance ability of the standard MOS-HIV instrument further assists to plan intervention strategies based on evaluative research.

This study has tried to address this issue. It has analyzed perceived quality of life PLWHA on HAART as judged by different clinical and socio demographic factors in addition to the comparison with their neighbors.

The Medical Outcome Study (MOS) HIV instrument which has shown good reliability and validity in a wide variety of settings (including Uganda) has been successfully translated in to over 15 languages. The 35-item questionnaire includes 11 dimensions of

6 physical and 5 mental functioning scales. The Amharic translation was performed using the English version of MOS-HIV with two forward and three backward translations by post graduate language students of AAU. The scoring of all the 11 scales and 2 summary scores was done by summing row item scores and transforming them to a 100-point scale did the scoring of all the 11 scales and two summary scores.

The Amharic translated MOS-HIV questionnaire to measure quality of life among PLWHA on HAART has revealed striking differences in the functional status and well being of PLWHA on HAART and their neighbors. This finding indicates the need for a more comprehensive approach towards improving the quality of life of PLWHA on HAART.

Although reliability for 2 of the 11 scales is a bit lower than the cut-off point for reliability (9), acceptable Cronbach's values may

range down to 0.4 for a population-based study to 0.9 for individual patient level clinical assessments (27).

Pearson's correlation coefficient above 0.4 was taken to indicate high correlation, 0.30-0.40 show moderate correlation and 0.1-0.2 indicate low correlation (28). In this study for all scales except the physical role and social function Pearson's correlation coefficients were above 0.4 meaning, most of the dimensions are highly correlated with each other. Feasibility of conducting QOL study in our case was also evaluated by the time and ease of completion, tolerance of respondents, rate of missing responses and interviewer reported acceptability all of which were satisfactory.

With respect to clinical parameters, PLWHA on HAART whose duration of treatment below the mean 36 weeks experienced lower (QOL) MOS-HIV mean scores in nine out of the eleven scales and the two summary scores. Significant associations

were observed in most of the physical components of the MOS-HIV. This result is compatible to (9) in an Ugandan study.

Though CD4+ cells count has failed to show changes in the MOS-HIV scales, those HAART participants in clinical stages 1and 2 had higher mean scores in 9 out of 11 scales. Statistically significant associations were seen in general health, physical functioning, vitality, health distress and physical health summary. In multivariate analysis the role physical dimension explained the difference in the scale scores of clinical staging. All it implies is that clinical parameters have big influence on the physical aspect of QOL of PLWHA and is an indicative to the importance of assessing other factors strengthening physical health.

The variation seen in CD4+ cell counts could only be explained by the failure to do CD4+ counts as to the national guideline (the first 3-month, the next six month and then in annual basis).

Analysis of items with substantial impairments has shown a considerable disability to do moderate activities, normal daily activity and usual work in PLWHA. Further more PLWHA have problems of nervousness, difficulty in reasoning and difficulty in keeping attention for long. The generalization for this could be that PLWHA have got unfulfilled needs than the mere presence of ART. Added on that, the MOS-HIV scale level analysis has further magnified the scale level discrepancy between the two groups.

In the analysis made to determine the scoring levels of the 11 dimensions, PLWHA on HAART obtained lower scores than their neighbors. The result indicates those former groups have more physical and mental problems than the comparison group.

The F-test comparisons for differences in the two mean summary scores as referred to selected socio demographic factors have

demonstrated lower scores for all of the socio demographic variables in PLWHA.

Comparison of physical health summary scores with selected socio demographic variables show; for both participants age less than 35 years, males, educational level above secondary attendants, the employed and the higher income groups were found to have good physical health and mental health summary scores. The above result could have occurred by the effect of poor socio economic status of the study participants.

In the multivariate analysis education was the only explanatory variable for the two summary scores in PLWHA where as; in the neighborhood comparison group education explained the physical health scoring variation while education together with income were explanatory to the mental component of QoL

As in the physical health summary score, male participants of both groups scored higher mean mental health summary (MHS) points than their female counterparts. Result has also shown significance. The reason may have been confounded by the higher employment rate in the males' side in our setup.

Higher income and having a job were found to be factors for a better MHS score in the neighbors of PLWHA.

In summary, PLWHA with shorter duration of treatment and in clinical stages 3 and 4 scored low. Pertaining to socio demographic factors: significant lower scores were observed in uneducated, unmarried, unemployed and in female participants of both groups, the magnitude being higher for PLWHA on HAART. The difference may mean the presence of un intervened quality of life concerns in HAART participants.

Strengths and Limitations of the Study

As the study is one of the few studies measuring health related quality of life of PLWHA on HAART in a resource poor setting, it may show scales to be critically emphasized by care takers of PLWHA on HAART and it may initiate those researchers who are interested in quality of life studies. Comparison of the MOS-HIV between HAART participants and their neighbors could also be a measure to validate this study in situations where nation-wide norm-based scoring systems are lacking. Patient reported outcome assessment of this type might not need sophisticated laboratory evaluation and it could be an adjunct to clinical evaluations.

This study had some limitations: the first is that the characteristics of the study groups may have introduced biases that would underestimate the impact of socio demographic variables in the QOL scales. The second limitation is that there could have occurred interviewer and respondent biases even if the instrument was pre tested. Thirdly, because of incomplete clinical information there was no adequate analysis in that respect and finally, evaluating two of the 35 items could have created difficulties of understanding as judged by the reliability test.

Most quantitative quality of life studies of PLWHA on HAART to date have witnessed improvements in the health status and quality of life of these people specifically with respect to social, economic and demographic variables provided in settings where comprehensive treatment and cares are provided. Despite that, this study has revealed that PLWHA on HAART with poor socio-economic status have a significantly lower quality of life as compared to their non-HAART participants.

In conclusion, the physical and mental health related quality of life of PLWHA on HAART is largely associated with unmet needs like education, income and employment.

Based on these findings:

1. Stakeholders in the ARV scale up program should focus on care strategies in the area of mental and cognitive health, which directed towards PLWHA on HAART, by virtue of the level of

mental and cognitive problems they have, and by complaints made by patients.

2. Families, friends, support groups and relatives, besides giving support in the social relations of PLWHA on HAART could alleviate the burdens of HIV/AIDS-related physical limitation.

3. Ways to address the socio demographic factors such as unemployment and inadequate income that are closely related with poor quality of life should be addressed for PLWHA on HAART.

4. Medical interventions are crucial and thus must be further integrated and sustained by designing a large-scale strategy with maximum proficiency.

5. Emphasis should be given to education, as it is a basic tool towards solving unemployment shortages of income etc.

6. Further large scale QoL research (preferably cohort) might be necessary in order to examine and address the problems of PLWHA on HAART.

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Annexes: *Annex1A: English Consent*

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CONSENT OF THE INTERVIEE

(**Interviewer:** Please read the following statement to the respondent before you begin interviewing.)

Hello! I am …….. This is an assessment of quality of life of people living with HIV/AIDS who are taking antiretroviral therapy as compared to their neighbors. The survey tries to identify which of the quality of life domains of People Living With HIV/AIDS on Highly Active Anti-Retroviral Therapy are with lower scores as compared to their neighbors.

I am one of the data collectors. Would you please cooperate in responding to the following questions? Your participation may indirectly contribute to improve the wellbeing of people living with HIV/AIDS who are currently on highly antiretroviral treatment and, may not bring any direct benefit to you.

Your response will never be exposed to any party. And without your consent, there is no obligation to participate in the study. You have the full authority to refuse participation, refrain during interview or decline from answering to some or more of the questions you do not like to answer.

Are you willing to participate?

Yes---------continue interviewing

No---------Give thanks to the participant and go to the next participant.
(Interviewer: Please mark in the space provided to confirm respondent's permission).

Consent given……

Consent not given……

Annex 1B: Amharic Consent

አዲስ አበባ ዩኒቨርሲቲ

ሕክምና ፋኩልቲ

የህብረተሰብ ጤና ትምህርት ክፍል

ከቫይረሱ ጋር የሚኖሩና የጸረ ኤች አይ ቪ/ ኤድስ መድሃኒት የሚወስዱ አዋቂዎችን የጤና ሁኔታ ከጎረቤቶቻቸው ጋር በማነጻጸር ጉድለት የሚያሳዩትን የጤና ሁኔታ መመዘኛዎችን ለመለየትና ትኩረት እንዲሰጥ ለማድረግ የተዘጋጀ መጠይቅ የመልስ ሰጪውን ፈቃድ መጠየቂያ ቅጽ፡፡

ጤና ይስጥልኝ ስሜ..... ይባላል፡፡ ይህ ከቫይረሱ ጋር የሚኖሩና ጸረ ኤች አይ ቪ/ ኤድስ መድሃኒት የሚወስዱ አዋቂዎችን ከጎረቤቶቻቸው ጋር በማነጻጸር ጉድለት የሚታባቸውን የጤና ሁኔታ መመዘኛዎችን ለመለየትና ትኩረት እንዲሰጥባቸው ለማድረግ የተዘጋጀ መጠየቅ ሲሆን እኔም የጥናቱ መረጃ ሰብሳቢ ነኝ፡፡ ከዚህ በመቀጠል ያሉትን ጥያቄዎች በመመለስ ትብብር እንዲያደርጉልኝ በትህትና እጠይቃለሁ፡፡ የሚሰጡት ምላሽ ከቫይረሱ ጋር ለሚኖሩና የጸረ ኤች አይ ቪ/ ኤድስ መድሃኒት በመውሰድ ላይ ላሉ አዋቂዎች የጤና ሁኔታ መሻሻል አስተዋጽኦ ያደርጋል፡፡ ማንኛውም እርስዎ የሚሰጡት አስተያየት በፍጹም ለሌላ ሰው አይነገርም፡፡ በራስ ተነሳሽነት ካልሆነ በስተቀር በዚህ ጥናት የመሳተፍ ግዴታ የለብዎትም፡፡ በቃለ መጠይቁ ጊዜ በማንኛውም ሰአት መልስ መስጠትዎን ለማቆም ወይም መመለስ የማይፈልጉትን ጥያቄ ያለመመለስ ሙሉ መብት አለዎት፡

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

አዎን...ቃለመጠይቅ አቅራቢ፡- መልስ ሰጪው የቃል ፈቃዳቸውን ስለሰጡ መጠይቁን ይቀጥሉ፡፡ የጠያቂው የማረጋገጫ ምልክት

አይደለም... ቃለመጠይቅ አቅራቢ፡- መልስ ሰጪው የቃል ፈቃዳቸውን ስላልሰጡ መጠይቁን አቋርጠው ወደሚቀጥለው ተሳታፊ ይሂዱ::

Annex1C: Socio demographic Questionnaire

1.Category HAART (1) Gen. pop.(2) 2. Survey No._____

3. Age _____

4. Sex M F

5. Education
1. None
2. 1-6
3. 7-8
4. 9-12
5. 12+

6. Religion
1. Orthodox
2. Catholic
3. Islam
4. Protestant
5. Other specify…….

7. Marital status
1. Single
2. Married
3. Divoced or Separated
4. Widowed

8. Relation to head of household
1. Head
2. Spouse
3. Daughter or son
4. Relative
5. Other specify……

9.FamilySize
1. 1-2
2. 3-4
3. 5+

10.Income
1. < 200 ETB/mo
2. 200-500 ETB/mo
3. 501-1000 ETB/mo
4. 1001-2000 ETB/mo
5. >2000ETB/mo

11.Employment status
1. Employed
2. Unemployed
3. Student
4. Housewife
5. Other specify……..

Annex1D: socio-demographic variables

አዲስ አበባ ዩኒቨርሲቲ
ህክምና ፋኩልቲ
የህብረተሰብ ጤና ትምህርት ክፍል

ለጤንነት ሁኔታ ምዘና ጥናት የተዘጋጀ መጠይቅ

የመረጃ ሰብሳቢው ስምና ፊርማ .....መጠይቁ የተሞላበት ቀን.....የመጠይቅ ቁጥር.....

መመሪያ፤ ለመረጃ ሠብሳቢዎች
1. ራስዎን ለመልስ ሰጪው ያስተዋውቁ፡ ስምዎን፤የመጡበትን ቦታ፤የጥናቱን ዓላማ.....ወዘተ

2. መጠይቁን ከመጀመርዎ በፊት የመልስ ሰጪውን የቃል ፈቃድ ይውሰዱ፤ፈቃደኛ ከልሆኑ ለዚሁ በተዘጋጀዉ ቅጽ ላይ አስፈላጊዉን መረጃ ይሙሉ

3. ለእያንዳንዱ ጥያቄ ተቀራራቢ ምርጫዎች ተስጥተዋል፤እያንዳንዱን መልስ የመረጃ መመሪያዉን በመጠቀም ለመልስ ሰጪዉ ከስረዱ በኃላ መረዳታቸዉን ለማረጋገጥ መልስዉ ይጠይቁ

4. መጠይቁ በትክክልና ሙሉ በሙሉ መሞላቱን ላያረጋግጡ መልስ ሰጪዉን አያስናብቱ፤ የተለየ ሁኔታ ከጋጠመዎ በቅፁ ጀርባ ላይ ማስታወሻ ይያዙ

5. የስብስቡትን መረጃ በዕለቱ ለተቆጣጣሪዉ ያስረክቡ:: ያጋጠሙ ችግሮችንም ይወያዩ::

6. በመጨረሻም መቂስ ሰጪዉን አመስግነዉ ያሰናብቱ

ክፍል አንድ፡ አጠቃላይ መረጃ

የተጠያቂው አድራሻ፡ ክ/ ከተማ..... ወረዳ.....ቀበሌ.....የቤት ቁጥር.....

ልዩ የአካባቢ ስም.....

ሌላ ልዩ ምልክት.....

101. የመልስ ሰጪዉ የጥናት ምድብ 1. የጸረ ኤች.አይ.ቪ/ኣደስ መድሃኒት ወሳጅ 2. በ ተ.ቁ. 1 የተመለከተዉ ሰዉ ጎረቤት	102. ዕድሜ (በሙሉ አመት) ይገለፅ	103. ፆታ 1. .ወንድ 2. ሴት
104. የትምህርት ሁኔታ 1. ያልተማረ(መደበኛ ትምህርት የሌለዉ) 2. ከ1-6 3. ከ7-8 4. ከ9-12 5. ከ12 በላይ	105. የሃይማኖት ሁኔታ 1. ኦርቶዶክስ 2. ከቶሊክ 3. እስላም 4. ፕሮቴስታንት 5. ሌላ ክርስቲያን.....(ይገለፅ) 6. ሃይማኖት የሌለዉ 7.ሌላ.....(ይገለፅ)	106. የጋብቻ ሁኔታ 1. በጭራሽ ያላገባ/ች 2. ያፋባ አብሮ የሚኖር 3. የፈታ/ የተለያየ 4. የሞተበት
107. የስራ ሁኔታ 1. የመንግስት ሰራተኛ 2. የግል ስራ(ቅጥርን ጨምሮ) 3. የቀን ሰራተኛ 4. ገበሬ 5. ነጋዴ 6. ስራ የሌለዉ 7. ተማሪ 8. የቤት እመቤት 9. ሌላ.....(ይገለፅ)	108. የቤተሰብ ብዛት 1. 1-2 2. 3-4 3. ከ5 በላይ	109.መልስ ሰጪዉ በቤተሰብ ዉስጥ ያለዉ ድርሻ 1. ሃላፊ 2. ረዳት 3. ጥገኛ 4. ራሱን የሚያስተዳድር
110. የወር ገቢዎ 1. ከ200 ብር በታች 2. 201-600 ብር 3. 601-1000 ብር 4. ከ1000 ብር በላይ	111. መልስ ሰጪዉ የሚኖሩት 1. ለብቻቸዉ 2. ከቤተሰብ ጋር 3. ከዘመድ ጋር 4. ሌላ.....(ይገለፅ)	

Annex1E: English version of MOS-HIV QOL Questionnaire

A. General Health Perception

1. In general, would you say your health is: Excellent ...1
   verygood…2
   good……3
   fair…….4
   poor ……5

Please tell me the answer that comes closest to describing whether the fallowing statements are true or false for you. The answers are:(INTERVIEWER READ RESPONSE BELOW& circle the choce)

	Definitely true	***mostly true***	***do not know***	***mostly false***	***Definitly false***
	1	***2***	***3***	***4***	***5***
2. You are some what **ill**.	*1*	*2*	*3*	*4*	*5*
3. You are **as healthy as others**.	*1*	*2*	*3*	*4*	*5*
4. Your health is **excellent**.	*1*	*2*	*3*	*4*	*5*
5. You have been feeling **bad** recently.	*1*	*2*	*3*	*4*	*5*

B. Physical Functioning

The following questions are about activities that a person might do during a typical day. Does your health now limit you in the following activities? If so how much?

	Yes, limited ***a lot***	Yes, limited ***a little***	No, notLimited ***at all***
1.The kinds or amounts of **vigorous** activities you can do like digging, fetching water from a well, carrying a big bunch of matooke, splitting firewood(running, participating in sports).	*1*	*2*	*3*
2. The kinds or amounts of **moderate** activities you can do like washing Clothes, moving a jerrycan of water or moving a bundle of firewood from one place to another.	*1*	*2*	*3*
3.Walking up hill, climbing stairs.	*1*	*2*	*3*
4. Bending, lifting light objects or kneeling.	*1*	*2*	*3*
5. Walking a distance, like a length of a football field, about 100 meters.	*1*	*2*	*3*
6. Eating, dressing, bathing or using a latrine.	*1*	*2*	*3*

C. Role Functioning

1. Does your health keep you from working at Job, doing work around the house or attending School?

Yes…….1

No ……2

2. Have you been unable to do certain kinds or amounts of work, house work or school work, because of your health?

Yes…….1 No…… ..2

For scales D upto H

	1. None of the time	*2. A little of the time*	*3. Some of the time*	*4. A good bit of the time*	*5. Most of the time*	*6. All of the time*
D. Social Functioning						
How much of the time, during the past thirty days, has your health limited your social activities, like visiting with friends or family?	*1*	*2*	*3*	*4*	*5*	*6*
E. Mental Health						
How much of the time, during the past 30 days:						
1. Have you been a very nervous person?	*1*	*2*	*3*	*4*	*5*	*6*
2. Have you felt calm and peaceful?	*1*	*2*	*3*	*4*	*5*	*6*
3. Have you felt depressed*?*	*1*	*2*	*3*	*4*	*5*	*6*
4. Have you been a happy person*?*	*1*	*2*	*3*	*4*	*5*	*6*
5. Have you felt so depressed that nothing could cheer you up?	*1*	*2*	*3*	*4*	*5*	*6*

F. Vitality

How often in the last 30 days:

1. Did you feel full of life and energy?	*1*	*2*	*3*	*4*	*5*	*6*
2. Did you feel totally without energy?	*1*	*2*	*3*	*4*	*5*	*6*
3. Did you feel tired?	*1*	*2*	*3*	*4*	*5*	*6*
4. Did you have enough energy to do things you wanted to do?	*1*	*2*	*3*	*4*	*5*	*6*

G. Health Distress: How often in the last 30 days:

1. Did you feel weighed down by your health problems?	*1*	*2*	*3*	*4*	*5*	*6*
2. Were you discouraged by your health problems?	*1*	*2*	*3*	*4*	*5*	*6*
3. Did you feel despair over your health problems?	*1*	*2*	*3*	*4*	*5*	*6*
4. Were you afraid because of your health?	*1*	*2*	*3*	*4*	*5*	*6*

H. Cognitive Functioning: How often during the past 30 days:

1. Did you have difficulty reasoning and making decisions, for example, making plans or learning new things ?	*1*	*2*	*3*	*4*	*5*	*6*
2. Did you forget things that happened recently for example, where you put things or when you had appointments?	*1*	*2*	*3*	*4*	*5*	*6*
3. Did you have trouble keeping your attention on any activity for long?	*1*	*2*	*3*	*4*	*5*	*6*
4. Did you have difficulty doing activities involving concentration & thinking?	*1*	*2*	*3*	*4*	*5*	*6*

I. Quality of Life

How has the quality of your life been during the past thirty days? That is, how have things been going for you?

5. Very well; could hardly be better
4. Pretty good
3. Good and bad parts about equal
2. Pretty bad
1. Very bad; couldhardly be worse

J. Health Transition

1. How would you rate your physical health and emotional condition now compared to thirty days ago?

Much better…5

A little better…4

About the same…3

A little worse…2

Much worse…1

Annex1F: Amharic Quality of Life Questionnaire

ክፍል ሁለት፡የጤንነት ደረጃ

አሁን የርስዎን የጤንነት ሀኔታ በተመለከተ ጥያቄዎችን ጠይቅዎታለሁ። (ቃለ መጠይቅ አቅራቢ ከተ.ቁ.201-213 ለተመለከቱት ጥያቄዎች መልስ ሰጪውን ይምሩ።) **የመጠይቅ ቁጥር.....**

201. በአጠቃላይ የጤንነትዎን ሁኔታ እንዴት ይገልጹታል?	202. ባለፉት 30 ቀናት ይሰማዎት የነበረውን አካላዊ ህመም በደረጃ እንዴት ይገልፁታል?	203. ባለፉት 30 ቀናት ህመም መደበኛ የቤት ውስጥ ወይም ከቤት ውጪ የሆኑ ስራዎችን ለመስራት ምን ያህል አስተጓጉሎዎታል?
1. እጅግ በጣም ጥሩ 2. በጣም ጥሩ 3. ጥሩ 4. ደህና 5. ጤንነት አይሰማኝም	1. ምንም አልነበረኝም 2. በጣም ዝቅተኛ ነበር 3. ዝቅተኛ ነበር 4. መካከለኛ ነበር 5. ብሶብኛል 6. በጣም ብሶብኛል	1.በጭራሽ አላሥተጓጉለኝም 2.በጥቂቱ አስተጓጉሎኛል 3.መከከለኛ » 4. በአብዛኛዉ.(በከፍተኛ) » 5. በጣም ከፍተኛ(በጭራሽ አላሰራኝም)

204. የሚከተሉት ጥያቄዎች አልፎ አልፎ ብቻ የምንሰራቸውን የስራ አይነቶች ይዘረዝራሉ። ጤንነትዎ የትኞቹን የስራ ዓይነቶች መስራት ያስቸግርዎታል? ምን ያህል?	1. ብዙ ጊዜ ያስቸግረኛል	2. አንዳንድ ጊዜ ያስቸግረኛል	3. በጭራሽ አያስቸግረኝም	ኮድ
1. ከፍተኛ የጉልበት ኃይል የሚያስፈልጋቸው ሥራዎች እንደ ቁፋሮ፣ ውሃ መቅዳት፣ ከባድ ሸክም ማንሳት፣ እንጨት መፍለጥ፣ መሮጥ፣ ስፖርት መስራት፣ አስቢዛ መገብየት				
2. መከከለኛ የጉልበት ኃይል የሚያስፈልጋቸው ሥራዎች እንደ ልብስ ማጠብ፣ ውሃ በባልዲ ማንቀሳቀስ፣ አነስተኛ ሸክም ከቦታ ቦታ ማንቀሳቀስ				
3. አቀበት ወይም ዳገት መንገዝ፣ ደረጃ ያለውን ቤት መውጣት				
4. ንጋበስ ቀና ማለት፣ ቀላል እቃዎችን ማንሳት፣ ቁጢጥ ማለት				
5. የ100 ሜትር ርቀት ያህል መንቀሳቀስ (የኪ.ስ ሜዳ ርዝመት)				
6. ምግብ መመገብ፣ ልብስ መልበስ፣ ገላ (ሰውነት) መታጠብ፣ መፀዳዳት				

205. የጤንነትዎ ሁኔታ መደበኛ ስራዎን ለምሳሌ የዕለት ተዕለት ኑሮ ለመስራት ወይም ትምህርትን ለመከታተል ያስቸግርዎታልን?	1. አዎ	2. የለም	
206. በጤንነትዎ ሁኔታ ምክንያት መስራት የሚያቅትዎ የስራ መጠን ወይም የስራ አይነት ለምሳሌ የቤት ውስጥ ስራ፣ የትምህርት ስራ አለን?	1. አዎ	2. የለም	

የሚከተሉት ጥያቄዎች ባለፉት 30 ቀናት ይሰማዎት የነበረውን የጤንነትዎን ሁኔታ ይጠይቃሉ። በይበልጥ የእርስዎን ሁኔታ የሚገልፀውን የጤንነት ደረጃ መግለጫ ያመልክቱ	1. ሁልዜ	2. ብዙ ጊዜ	3. በጣም ብዙ ጊዜ	4. አልፎ አልፎ	5. በጣም አልፎ አልፎ	5. በጭራሽ	ኮድ
207. ባለፉት 30 ቀናት ምን ያህል ጊዜ የማህበራዊ ኑሮ እንቅስቃሴዎ ለምሳሌ ጉደኛን ወይም ቤተሠብን መፈፀሸኘት አስተጓጉሎብዎታል?							
208. ባለፉት 30 ቀናት ምን ያህል ጊዜ **1. በጤንነትዎ ምክንያት የመበሳጨት ሁኔታ ይታይብዎት ነበር?**							
2..የተረጋጋና ሰላማዊ ሁኔታ ነበርዎ?							
3.. የመረበሽ ሁኔታ(ድብርት) ነበርዎ?							
4.. ደስተኛ ነበሩን?							
5.. መጽናናት አስኪያቅትዎ ድረስ ሀዘን ነበረብዎ?							

209. ባለፉት 30 ቀናት ምን ያህል ጊዜ የሚከተሉት ሁኔታዎች ይሰማዎት ነበር?	1. ሁልዜ	2. ብዙ ጊዜ	3. በጣም ብዙ ጊዜ	4. አልፎ አልፎ	5. በጣም አልፎ አልፎ	5. በጭራሽ	ኮድ
1. መነቃቃትና ጥንካሬ(ጉልበት) የማግኘት ሥሜት ነበርዎ?							
2. ሙሉ በሙሉ አቅም የማጣት ሥሜት ነበርዎ?							
3. የድካም ስሜት ይሠማዎ ነበር?							
4. የሚፈልጉትን ነገር ለመስራት በቂ አቅም/ ጉልበት ነበርዎ?							
5. ከጤንነት ይልቅ የህመም ስሜት ማየል ይታይብዎ ነበር?							
6. በጤና ችግርዎ ምክንያት ሊያደርጉ ያብቡትን ነገር እንዳይሠሩ ሆነዉ ነበር?							
7. በጤና ችግርዎ ምክንያት ተሥፋ የመቁረጥ ሁኔታ (ሥሜት) ነበርዎ?							
8. በጤና ችግርዎ ምክንያት ያሠጋኛል ብለዉ ፈርተዉ ነበር?							

210. ባለፉት 30 ቀናት ምን ያህል ጊዜ የሚከተሉት ሁኔታዎች ይታይብዎ ነበር?	1. ሁልዜ	2. ብዙ ጊዜ	3.በጣም ብዙ ጊዜ	4. አልፎ አልፎ	5. በጣም አልፎ አልፎ	5. በጭራሽ	ኮድ
1. ሀሳብን አቀናጅቶ መግለጽ (ማሥረዳት) አለመቻል ወይም ውሳኔ መስጠት አለመቻል (በሀሳብ መወላወል) ለምሳሌ እቅድ ለማውጣት መቸገር፣ አዲስ ነገር መረዳት አለመቻል ነበረብዎ?							
2. የቅርብ ጊዜ ድርጊቶችን ማስታወስ አለመቻል ለምሳሌ ዕቃ ያስቀመጡበትን ቦታ ወይም ቀጠሮን የመርሳት ችግር ነበረብዎ?							
3. ማስተዋል የሚያስፈልገውን ስራ ረዘም ላለ ጊዜ መስራት ይቸግርዎ ነበር?							
4. ትኩረትን ወይም ማሰብን የሚጠይቅ ስራ ለማከናወን ተቸግረው ነበር?							

211. እባክዎን ከሚከተሉት ውሥጥ ለርሥዎ እውነት ወይም ሀሠት የሆነውን መልሥ ይምረጡ።	ሙሉ በሙሉ ትክክል	2 በአብዛኛው ትክክል	3 አላውቅም	4 በአብዛኛው ሀሰት	5 ሙሉ በሙሉ ሀሰት	ኮድ

1. የህመም ስሜት ይታይብዎታል?						
2. ከሌሎች እርሶ ከሚያውቋቸው እኩል ጤነኛ ነዎት						
3. ፍፁም ጤነኛነት ይሰማዎታል						
4. ከቅርብ ጊዜ ወዲህ የህመምዎ ስሜት እየተባባሰ ነው						

213. ባለፉት 30 ቀናት ጠቅላላ የጤንነትዎን ሁኔታ እና የታየብዎትን ስሜት ከአሁኑ ሁኔታዎ ጋር በማነፃፀር እንዴት ይገልፁታል?	1 በጣም ተሻሽሏል	2 ትንሽ ተሻሽሏል	3 ለውጥ የለውም	4 ትንሽ ብሶብኛል	5 በጣም ብሶብኛል	

Annex 1G: Amharic Surveyor's Guide

የመረጃ ሰብሳቢው መመሪያ: የጥያቄዎች ማብራሪያ

201. የጤንነት ሁኔታ ማለት የህመም ስሜትን መንቀሳቀስን ሀሳብን መበሳጨትን መደሰትን መረበሽን...ወዘተ ያጠቃልላል

202. አካላዊ የህመም ደረጃ ራስ ምታት ቁርጠት ውጋት ቁርጥማት...ወዘተ

203 የቤት ውስጥ ስራ- ጽዳት ልብስ ማጠብ...ወዘተ
ከቤት ውጭ- መደበኛ ስራን

205. መደበኛ ስራ- ተማሪ-ትምህርትን መምህር-ማስተማርን ገበሬ-እርሻ ማረስ የቤት እመቤት-የቤት ውስጥ ስራን

206. በተራ ቁ. 203 እና 205 የተጠቀሱትን ሙሉ በሙሉ ወይም በከፊል ለመስራት ያዳግቶታል

207. ማህበራዊ ኑሮ እንቅስቃሴ- ስብሰባ የታመመን መጠየቅ፤ለቅሶ መድረስ፤እድር-እቁብ መሄድ፤ከጎረቤት፤ ከቤተሰብ፤ ከትዳር ጓደኛ

208.1 በጤናዎ ምክንያት ሳይደረግልኝ ቀረ የሚሉት አለ?

208.2 እንዳቀዱት ወይም እንዳሰቡት ሆኖልዎታል- ያለሀሳብና ጭንቀት

208.3 መተከዝ፤ከወትሮው በተለየ ከሰዎች ጋር ግንኙነት ለማድረግ አለመፈለግ፤ሰዎች አሳዝነዎታል?

208.4 በሰሩት ስራ መደሰት፤ፈቃደኝነት-ለምክርና ልምድን ለማካፈል

208.5 ከሰው በተለየ ሁኔታ ሆድ ይብሶታል-የሚያጋጥምዎት ሁሉ ሃዘን ውስጥ ይከትዎታል

209.1 መደበኛ ወይም በጎአድራጎት ስራን

209.4 እራስዎን ለመጠበቅ ጭምር

209.5 ህመምዎ ብዙዎቹን የወሩን ቀናት

209.6 በጤና ችግርዎ ምክንያት ያቀዱትን መስራት አለመቻል

210.3 መኪና መንዳት፤የሚያውቁት ቦታ መሄድ አለመቻል፤ያሰቡትን ለመግዛት-ለመስራት

210.4 ፈተና መስራት፤ጸሎት፤ሂሳብ መስራት

213 አካላዊ ህመም-እንቅስቃሴና አእምሮአዊ ደስታ ሀዘን መበሳጨት..ወዘተ

Annex 2A: Data extraction form

Unique# HIV CARE/ART CARD———————

District ———————Health unit ——————— District clinician Team _____

Sex M F DOB——————— marital. ———————

Care ART treatment interruption

Name of family member also in care	Age	HIV status	Unique No

Stop Lost circle	Date	Why	Date if restart
Stop lost			
Stop lost			
Stop lost			
Stop lost			

Annex 2B: HIV test Registration form

Date

——————confirmed HIV + test when ——————— 2 where————- HIV
Enrolled in HIV care
ARV Therapy

—————- Medically eligible clinical stage ———————
Why eligible clinical only CD4#/%———-
TLC———

——————— medically eligible and ready for ART

——————— transferred in from ——————- ART started ——————-

—————- start ART first time – Initial regimen ———————-

At start ART weight ————-function————- clinical stage ——————-

————— substitute within first-line

New regimen ———————————— why———————

New ———————————————— why ———————

Switch to 2nd line or substitute within 2nd line)

——————- new regimen ——————————why ———————

——————— new ———————————— why ———————-

Why stop codes
1 Toxicity/side effects
2. pregnancy
3. Treatment failure
4. Poor adherence
5. Illness/Hospitalization
6. Drugs out of stock
7. Patient lack finance
8. Other patient decision
9. Planned Rx interruption
10. Other

why SUBSTITUTE or SWITCH codes
1. Toxicity/Sideeffects
2. Pregnancy
3. Result of pregnancy
4. Due to new TB
5. New drug available
6. Drug out of stock
7. Reasons for switch to 2nd line regimen
8. Clinical treatment failure
9. Immunologic falure
10. Other reasons specify

Toxicity/side effects
pregnancy
Treatment failure
Poor adherence

Annex2C :ALERTARV TREATMENT PROGRAM FOLLOW UP F ORMAT

Unique No———————— Name————————————- Age————-years Sex——M————F

Date started/continued Rx————(DD/MM/YY S=scheduled visit; US=unscheduled visiAddress:subcisty————————-Keb————————HN————————-Tel————————-

Follow up date (visit codes),s or US.	Duration in weeks since first starting ART/since starting current Regimen	Wt KG	Pregnant PMCT EDD-- FP-N-Y Method if child Highest	WHO stage	Functional work Ambo Bed	TB status	Potential side effects	NEW Ol	TMP SME ADH DISPENSE		Other meds dispensed	ARV drugs ADH DISPENCE		CD4 cells/M