ASSESSMENT OF ART ADEHERENCE AT ZEWDITU MEMORIAL HOSPITAL IN ADISS ABABA, ETHIOPIA

MSW DISSERTATION RESEARCH PROJECT REPORT

(MSWP - 001)

PREPARED BY

MELAKU KEBEDE

ENROLMENT NO: ID1051171

PROJECT SUPERVISOR

EPHRAIM MEBRATE (MR)

INDIRA GHANDHI NATIONAL OPEN UNIVERSITY

SCHOOL OF SOCIAL WORK

MAY, 2014

ADDISABABA,ETHIOPIA

DECLARATION

I hereby declare that the dissertation entitled: **ASSESSMENT OF ART ADEHERENCE AT ZEWDITU MEMORIAL HOSPITAL ADISS ABABA, s**ubmitted by me for the partial fulfilment of the MSW to Indira Gandhi National Open University (IGNOU), New Delhi ,is my own original work and has not been submitted earlier, either to IGNOU or to any other institution for the fulfillment of the requirements for any other programme of study. I also declare that no chapter of this manuscript in whole or in part is lifted and incorporated in this report from any earlier work done by me or others.

Place: Addis Ababa, Ethiopia Signature: _____

Date _May16,2014_____ Enrolment No:ID 1051171_____

Name: Melaku Kebede_____

Address: __Addis Ababa_____

Telephone No.:__0911-480104_____

E-mail: _mmelakuk@yahoo.com_____

CERTIFICATE

This is to certify that **Mr. Melaku Kebede** who is a student of MSW from Indira Gandhi National Open University, New Delhi was working under my supervision and guidance for her Project work for the course **MSWP-001.**

Her Project work entitled, **ASSESSMENT OF ART ADEHERENCE AT ZEWDITU MEMORIAL HOSPITAL ADISS ABABA**

Place: Addis Ababa_____

Signature_____

Date: __May 16, 2014._____Name: _____

Address of Supervisor: Ephraim Mebrate

Addis Ababa, Ethiopia_____

_____

_____

Phone No: 0911-3984848

Table of content

Abbreviations and Acronyms

- **Adherence –** is the ability to comply with medication prescribed and dispensed.
- **ART adherence** is the ability to comply with ART medication prescribed and dispensed in the clinic for 95% of time or more.
- **Assessment** is the process of verifying and documenting how the ART medications dispensed from the clinic or the previous visit were consumed.
- **Healthcare providers** are people who offer services to sick people in a health facility.
- **Prophylaxis** is **t**he treatment which is given to patients in order to prevent disease from occurrence or reoccurrence.
- **Linkage to care** refers to the period starting with HIV diagnosis and ending with initial enrolment in HIV care and treatment.
- **Adherence to treatment** refers to the ability of the patient to develop and follow a plan of behavioral and attitudinal change that ultimately serves to empower him/her to improve health and self manage a given illness.
- **Personal operation definition.** Adherence is the ability to comply with ART medication prescribed and dispensed in the clinic for 90 % of time.

Abstracts

Background information

Today, HIV infection is a serious public health problem. However the advent of highly active antiretroviral treatment (HAART) has dramatically improved the prognosis for HIV-positive patients, substantially reducing the rate of disease progression and death; but HAART Adherence is found to be critically important for the success of the therapy. The objective of this study is to assess ART adherence among PLHA attending ART clinic at Zewditu Memorial Hospital in Addis Ababa, Ethiopia and the study method that is used is institutional cross-sectional study will be conducted with both quantitative & qualitative methods on PLWA at Zewditu Memorial Hospital with the major findings:

The mean age of the respondents was 41.70 years (i.e. in the age category of 40 – 49 years). The ages of the majority (about two-third, 63.0%) of the patients in the study were found to be in the age brackets of 40 - 49 years (thirty-three percent) and 30 -39 years (only thirty percent). The patients who are living with HIV/AIDS and engage in ARV treatment have already become aware of the benefits of taking ART, such as AIDs will be delayed (83.0%), they get cured (91.0%), get sick (93.0%) and live longer life than others (92.0%). Therefore, the majority of the respondents in the study experience the multi-dimensional benefits of the ART. It is suggested that this study should be replicated in the future with certain changes. In subsequent studies of this nature, a larger sample should be used that is more representative so that the results can be more generalizable to the larger population of individuals on antiretroviral treatment. Larger cell sizes are also recommended to explore critical biographical variables.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Problem

The emergency of the HIV epidemic is one of the biggest public health challenges of the world has ever seen in recent history, or in the latest three decades HIV has spread rapidly and affected all sectors of society. Young people and adult, men, woman, and the rich and the poor, sub-Saharan Africa is at the epicenter of the epidemic and continues to carry the full brunt of its health and socio economic impact. Ethiopia is among the countries most affected by HIV epidemic within estimated adult prevalence of 1.5%, it has a large number of people living with HIV (Approximately 800,000 and about 1 million AIDS orphans. Despite these mounting the global response has been a reason for hope and optimism in fighting the epidemic application of effective efforts. (FMOH, 2004).After claiming millions of lives and orphaning millions of children in the world, HIV has become a manageable chronic disease that can be treated but not yet cured, by antiretroviral drugs (MOH, 2006).

Since the discovery of the first ART drugs were made, of these, the introduction of HAART (which means Highly Active Anti Retroviral Therapy) is considered by many, as one of the wonders of modern medicine. The availability of HAART as a FDC adds to this medical accomplishment by decreasing the pill burden for patients and hence contributing to improved drug adherence. Regarding ART service scale up the government of Ethiopia took the initiative of providing fee based single anti-retroviral (ARV) drugs in 2003 and free ARV drugs in 2005. As the result of this imitative there has been a dramatic increase in number of patients enrolled into HIV care and treated for HIV. As of October 10, 2007 FHPCO's report, 109,552 patients have ever been started on (ART anti-retroviral therapy) and 82,248 patients are currently taking ART. The existing HARRT with the use of single drugs has the disadvantage of high pill burden, difficult schedule, potential poor adherence, difficult supply management, and possible association Since patients on ART are likely to take quite a number of pills per day in addition to high pill burden may contribute to poor adherence. However adhering to treatments crucial, as partial or erratic doses or will lead to resistance to the

medication and ultimately failure. The simpler the treatment the, more chance that the patient will continue to take their medicines. This is the reason why we need FDC (fixed dose combination) .Recently as an existing of the government's commitment to make HARRT more simplified affordable and accessible to the majority of Ethiopians living with the virus it is expanding its initiatives to introduce ARV Fixed Dose.(FMOH,2007).

1.2 Statement of the Problem

Assessing the adherence of people receiving ART is very essential aspect to understand whether the service is going towards the intended goals and objectives. Therefore, understanding the degree of adherence and its barriers would support the Government, people receiving ART and others to design feasible intervention methods to enhance adherence.

The benefits of ART are only a tenable when adherence to precise dosing schedule is practiced and other treatment requirements are closely followed. Since ART is at its early stage in Ethiopia, there are no adequate researches done on Adherence. The Adherence people receiving ART In my work experience, I realized some people are not taking their ART medication properly due to various reasons (FMOH, 2006). It is based on this View point that I decided to do my dissertation on this issue.

This study also intended to answer the following research questions:

- What is the current status of ART adherence among PLHA attending ART clinic at Zewditu memorial hospital?
- What are the factors contributing to ART adherence?
- What are the major reasons for missing ARV drug doses?
- What looks like patient relationship with the health care providers?
- What is the contribution of a conducive health care system and clinical setting for ART adherence?

1.3 Significance of the Study

Ethiopia has been engaged in the scale up of ART accesses to its people since 2005. despite challenges like poor health infrastructure lack of state of the ART diagnostic tools, and shortage of health care providers, ART scale up has recorded the greatest achievement in the number to people reached and facilities providing the ART service had increased from 3 to 838 and people started on HIV treatment increased from 24,000 to 379,190 from 2006 to 2012 (FMOH, 2007).

Even though the number of PLHIVs who have ever started ART has reached 379, 190, not more than 249,000 are still in treatment. This shows that only 70% of those who are starting the treatment were retained in the program. The proportion of the clients who retained to care at different sites varies between70-80. Hence, in parallel with the scaling up of the ART service, the government of Ethiopia with its partner organization has been work to mitigate the challenges of, retention in care and adherence to ART. Therefore having adherence and retention frame work with very well defined strategies and workable interventions to be used as to be at each level of the health care system is very important to address adherence and retention gaps. (FMOH2007).In the presence of ART, improving quality of life related to health in PLHA is an urgent priority in order to active this, patients adherence to ARV combination is therapy is a crucial components of successful treatment outcome. The rationale for selecting this problem area was due to the facts that identification of determinants factors for ARV therapy adherence amongst patients receiving ARV at health facilities is so significant to prevent resistance which could occur due to non-adherence and to improve quality of life of HIV/AIDS patients (FMOH,2007).

1.4 Objectives of the Study

1.4.1 General Objective

- To assess ART adherence among PLHA attending ART clinic at Zewditu Memorial Hospital in Addis Ababa, Ethiopia.

1.4.2 Specific Objectives

- To assess the current adherence status of PLHA to ART at the Clinic of Zewditu Memorial Hospital;
- To identify factors contributing to ART adherence;
- To examine reasons for missing ARV drug doses;
- To examine the patients' relationships with the healthcare providers at the Clinic; and

- To identify the contributions of health care system and clinical setting for ART adherence.

1.5 Definition of Key Terms

- **Adherence –** is the ability to comply with medication prescribed and dispensed.
- **ART adherence** is the ability to comply with ART medication prescribed and dispensed in the clinic for 95% of time or more.
- **Assessment** is the process of verifying and documenting how the ART medications dispensed from the clinic or the previous visit were consumed.
- **Healthcare providers** are people who offer services to sick people in a health facility.
- **Prophylaxis** is **t**he treatment which is given to patients in order to prevent disease from occurrence or reoccurrence.
- **Linkage to care** refers to the period starting with HIV diagnosis and ending with initial enrolment in HIV care and treatment.
- **Adherence to treatment** refers to the ability of the patient to develop and follow a plan of behavioral and attitudinal change that ultimately serves to empower him/her to improve health and self manage a given illness.
- **Personal operation definition.** Adherence is the ability to comply with ART medication prescribed and dispensed in the clinic for 90 % of time.

1.6 Limitations of the Study

The first limitation was that the sample was drowned (collected) only from one hospital that may not meet representative of Ethiopian hospitals ART service provision.

This research was conducted only in one hospital because of shortage of money and other related resources. Future studies could be conducted at large scale in other hospitals of Ethiopian ART units to fill the gap.

1.7 Organization of the Thesis

The organizations of this study are divided into chapters. This study has organized with five chapters and a number of subtitles within each chapter, Chapter one of the studies is Title as Introduction with subtitles Background of the study, Definition of terms, Limitation of the study and organization of the study.

The Second Chapter of this study is Literature Review. Under this part of the study there are many subdivisions like Introduction, history of ART adherence to HIV, Factors facilitating ART adherence, Factors hindering ART adherence, strategies and priority preventions.

Research Design and Methodology was organized under chapter three of the study.
The Descriptions of the study area, study Design, Universe of the study,(Population Source),Inclusion and Exclusion Criteria, Sample Size and Methods, Data collection Tools and Procedures and Data Analysis.

The interpretation and discussion part of this study was placed under chapter four of the study with Different Socio demographic and Economic characteristics of respondents, Factors influencing ART Adherence among ARV users.

Chapter Five is just about Conclusion and Recommendation of the Study. The materials which were reviewed in the due process of conducting this study are presented immediately after this chapter under the Title References. A number of annexes are part of this study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents review of related literature located elsewhere in the world. It thus focuses on major issues which have direct connections with the ART adherence, factors affecting such an adherence, reasons for missing doses and so on.

2.2 History of ART Adherence to HIV

Despite the critical need for strong adherence to HIV treatment, research indicates that many patients have difficulty in realizing this goal. Several studies conducted in North America and Africa has reported the only 55% of North American patients demonstrated high level of ART adherence. The percentage of adherence for Africa patients was found to be about 77% which could be attributed to the fact that African patients have been on treatment for shorter periods of time. The proportion of adherent patients could decline over time as patients initiating therapy encounters the challenges of maintaining long term adherence. The picture for children was not so optimistic. These same study reported that only 55% to 60% of African children were adherent to ART. But 95 percent adherence on ART Drug is expected from children to get the maximum benefit of ART.

Retention in care is also a crucial issue for HIV treatment program in sub-Saharan Africa is about 60% indicating that many patients are being lost and a lot of time and money is being wasted. Retaining HIV infected patients have the potential to help contain health care cost by improving HIV specific health outcomes and reducing emergency department visit and hospitalizations. In addition, retention provides the opportunity to implement health care intervention and to prompt health behavior change that may decrease transmission and improve public health by reducing the population burden of HIV. Overall as evidenced by the above national and international resources, designing strategies to attain long-term adherence among HIV infected patients and retaining them in medical care at regularly intervals has been shown to be linked to positive health outcomes. As a result it is a major priority for both program mangers and providers and public health organizations to work

towards a unified approach standardize national adherence strategy.(Eric, et al., year, 2003 pp. 81-90).

2.3 Factors Facilitating ART Adherence

Regarding clients' knowledge, understanding, belief and perception about ART, they must understand their treatment regimen and the possible side effects of the ART drugs, Taking medications in the correct amount, at the correct time and in the way they are prescribed, Knowing about interactions between ARVs and other types of medication which can change the way ARVs work in the body, Eating and drinking the right things with your pills, as prescribed by the clinical team and about Avoiding unsafe sex (FMOH, 2009)

The client has to believe and perceive as ART works, improves and prolongs life if it is taken properly. It decreases the viral load and it increases the immunity of the patient and thereby it improves the quality of life. It helps the patient to live a healthy and longer life. (FMOH, Adherence supports Guideline, 2009)

In Ethiopia, cultural and religious beliefs influence adherence to care and medication very significantly. Fasting and traditional healers can have a significant effect upon adherence. But adherence is very crucial to get maximum benefit of ARV drugs, i.e.it stops viral replication and it increase body resistance and thereby it improves the quality of life of the patient. (FMOH, 2009).

The involvement of client in decision making process, client readiness and commitment is found to be very important for ART adherence.. As ARV drugs are taken throughout one's life involvement of the patient in decision making process is very crucial, So that the patient has to be involved in the decision making process and he has to agree to take the drug and adhere after he understands (knows) the benefits of taking ARV drugs and benefits of adherence to HAART and he has to know as the drug is taken lifelong (FMOH, 2009)

Adherence counseling and preparedness must precede ART therapy. ART should be delayed until adherence issues have been addressed. Patient actively involved in his/her own care and become ready if the patient clearly understands ARV Therapy is, possible side effects, limitations, adherence schedule and wants treatment demonstrates, readiness, Treatment partner/family/social support available, Psychosocial barriers to adherence have been addressed, No psychiatric illness or substance abuse that would impact adherence and no recent non-adherence to care or medication. After knowing all these things a client decision

and commitment to take the Right drug at the Right time and dose throughout his life is very important for successful treatment outcome.(FMOH, Adherence supports Guideline, 2009).

2.4 Trustful Relationship between Health Care Providers and Clients

Health care providers have to build a good working alliance and a trustful relationship between them and their patients to get optimal adherence and treatment outcome. A therapeutic alliance between the provider and the patient can promote optimal adherence to both HIV care and ARV regimens. Adherence can be improved (FMOH, 2009).

Moreover, the available social and family support facilitates the adherence. Having treatment supporter, Ability to make taking pills as part of routine, Effective use of reminders brings about positive results, Ability to disclose HIV status to family and friends and providers' knowledge and communication skills (FMOH, 2009).

2.5 Factors Hindering ART Adherence

The principal factors associated with non adherence to care treatment appear to be patients related, including, Substance and alcohol abuse, Forgetting or difficulty understanding treatment instructions, Life adjustment difficulties such family responsibility and transportation difficulties, Fear of disclosure to family members resulting lack of family support .lack of treatment compliance due to concurrent illness ,Patient uncertainty about the long term effects treatments, Long waiting periods at HIV clinic and pharmacy, Lack of food, particularly for new initiating patients, and fear of stigma and discriminations. Others factors that contribute to non-adherence are inconvenient dosing frequency, dietary restrictions and pill burden, difficult patient burden, heath care provider relationships, inconvenient service provision in the health care system (FMOH, 2009).

2.5.1 Advices and counseling services given by health professionals.

The health care providers of the ART clinic at Zewditu Memorial Hospital prepare clients to 'start' adhering to ART; they have provided clients with a large amount of information on Basic Facts on HIV and AIDS, HIV Counseling and Testing, Comprehensive HIV Care and Treatment and Adherence. In order to address the concerns of client by providing information and counseling on HIV treatment by reviewing some of the following issues:

Review the information on the treatment prescribed for their client. The ART clinic staffs should encourage the client to repeat back to them which pills they will take and when they should be taken. Remind the client that ART is a lifesaving drug and that his / her life depends on taking them every day at the right time. Remind that if a drug has to be taken 2 times per day, there should be a 12 hour interval between the 2 doses. If you forget, take the dose within 4 hours. After that, wait until the next dose and no double dose (FMOH, 2009).

2.5.2 Professional consultation to PLHA

The ART clinic healthcare providers give professional consultation to their patients to develop good adherence by giving firsthand basic information about the treatment, as the treatment has to be taken lifelong and by helping their patients to understand their treatment regimen and be helped to overcome any challenges to taking ARVs as they are meant to be taken. By giving an advice to develop partnership between the person taking ARVs, family and friends of PLHA and the medical system supporting that person, including Adherence supporters, and by telling as medications has to be taken in the correct amount, at the correct time and in the way they are prescribed, by helping to know about interactions between ARVs and other types of medication which can change the way ARVs work in the body, eating and drinking the right things with your pills, as prescribed by the clinical team and to avoid unsafe sex are very important to get the expected maximum treatment outcome (FMOH, 2009).

2.5.3 ART Clinic of Zewditu Memorial Hospital strength and constraints.

The ART program Zewditu Memorial Hospital was started in July 2003. The hospital has been providing ART service to all patients coming from all regions between 2003-2004. The free ART program started in March 2005. The total number of patients ever received ART at ART clinic are 11, 214. Out of these, 10,322 Adults and 892 pediatrics. Number of persons currently receiving ART are 6465. Among these, 6051 were adults and 414 were pediatric

2.6 Strengths of the ART Clinic

The treatment of HIV/AIDS clients with respect, and with complete consideration for human rights, ethics, privacy and confidentiality, informed consent, autonomy, and dignity. This means that they are practicing the values and principles of social work in their daily routine activities. That is increasing the effectiveness of services through

education of, and consultation with, professionals within the system. Through training and consultation the staffs always tries to improve the quality of service, their knowledge and skills. Because of this the ART clinic has a well trained and experienced staffs. Beside to this The ART clinic is now used as a research and training center, because it is considered as a model center. Moreover this it is the first ART clinic in Ethiopia, ART service provision was started in 2001.Increasing awareness of their clients through group and peer education. Health education is given two times per day for all clients at the waiting area by health care providers and case managers (Adherence supporters).

In addition, there is the practice of peer education among children's to learn from each other and share their experiences. The staffs of the ART clinic gives a standard counseling service on ART adherence and HIV counseling and testing by realizing the goal of counseling in the context of HIV care and treatment is not to solve every problem but to strengthen and improve the client's coping skills through: Helping patients cope with the emotions and challenges they face when diagnosed with HIV and thereafter. Preparation and support for patients who want to begin or are taking ART may motivate them to be adherent thereby helping patients to avoid passing on, or getting re-infected with HIV. Helping patients make choices and decisions that will prolong their life and improve their quality of life.

Referral as a comprehensive care and support, No one person or organization can provide a client and his/her family with all the HIV care and support services they need. That is why it's important to have a strong referral system in place. The staffs of the ART clinic formally send a person and/or family members to another place in the hospital or another organization for services the person in order to get holistic care and services. Referrals between health facilities and community organizations are also important. AS need to know what resources exist in the community and community organizations need to know what services are offered at the health facility.

Monitoring and Evaluation, the ART clinic staffs are collecting and monitoring data to ensure that services provided are consistent with the care plan. M&E also includes monitoring and evaluation of a client's adherence to treatment and care.

2.7 Constraints of the ART Clinic

The first constraint on the part of the Clinic is high work overload (burden). The total number of people who came to ART Clinic is 11, 214. Out of these, 10,322 were adults and 892 pediatrics. Number of persons currently receiving ART are 6,465 among these 6,051adults and 414 are pediatrics.

Besides, there is shortage of drugs like INH and co-trimoxazole. The ART clinic meets frequent shortage of these drugs in different times. Staffs have communicated with both governmental and non-governmental organizations to solve the shortage but the problem is not yet solved.

Shortage of rooms is the third major constraint in the Clinic. At the time of my visit to the Art clinic of Zewditu Memorial Hospital has shortage of rooms to run different activities in different rooms by ensuring confidentiality and privacy. But they have a plan to change the ART clinic when the construction of the new building is completed.

2.8 Strategies and Priority Interventions

The Strategies to improve adherence and retention of patients, and follow medication and care for chronic disease look HIV focus on the following major areas that need intervention to address the barriers related to the client, the Service provider, the heath system and related environment. Under each strategy, there are major institutions which have been implemented and achieved good result in resource limited environment, like Ethiopia.

. Client empowerment means empowering patients with the necessary knowledge and skills and providing support that make them adhere to the following a medications schedule with agreed recommendations from a health provider. The following are workable interventions that can bring about empowerment of patients.

. **Education and counseling services** are among the most effective behavioral interventions targeting ART adherence and retention in care.

. **Client specific adherence related tools**, including remainder devices. Calendars, pill boxes, pill organizers, dose planners and reminder alarm devices may be giving to patient taking ART to support their adherence.

. **Psychosocial and economic empowerment** refer to psychological support includes spiritual advice, mental health, psychological shelter and nutrition support.

CHAPTER THREE

STUDY DESIGN AND METHODS

3.1. Description of the Study Area

This study will be conducted from November 2013 to December 2013 at ART clinic of Zewditu Memorial specialized hospitals in Addis Ababa, Ethiopia.

3.2. Study Designs.

An institutional cross-sectional study will be conducted with both quantitative & qualitative methods on PLWA at Zewditu Memorial Hospital.

3.3. Universe of the study (Population source).

All people living with HIV/AIDS who are eligible for HAART and being treated with ART at Zewditu Memorial Hospital ART clinic.

Inclusion criteria

All the study population males and female who full filed the below criteria:-

1. Taking the fixed dose multiple combined ART to a single drug.
2. >18 years of age
3. Give verbal informal consent voluntarily.
4. Admitted to the study hospital for ART and of take the drug as outpatient.
5. Unable to give consent voluntarily.

Exclusion criteria.

All contacted ART clients who are unable to fulfill the ART inclusion criteria.

Sample size and Methods.

To determine the sample size for the cross-sectional survey design, it was assumed that the Precision to an acceptable approximation of the population was taken to be 95% (CI of 95%), Taking a difference of no more than 5% from the actual figures in the source population. Since Our current adherence rate or proportions of any related concepts on adherence to HAART rate 50-75 percent is of 50% was preferred to obtain the largest possible sample size using the single Population formula. To compute for non-response rate, 10% of the total sample size [N = 384] Was added and then the total sample size was found to be 461. The sample size was Calculated using the following formulae: -

$N = Z (÷½)^2 P (1-P)$, N = 384

D^2

Where, N = sample size, Z (÷½) = 1.96, which is the upper percentile of the standard normal Distribution, P= HAART adherence rate, which was assumed to be 50% and D= difference from The actual figures of source population, which will be taken to be 5%.

3.4 Sampling Methods

With regards to sampling techniques, a total of 100 PLWA sampling unit who are on HAART and follow up at ART unit of Zewditu Memorial Hospital will be selected for the study purpose at a time of proposal writing/planning, all other to be enrolled being eligible for ART till the study period (November-December2013) will be registered and included in the sampling frame. Finally, using the systematic random sampling system of those coming for follow up of ART every 4thART clients will be involved in the study.

3.5 Data Collection: Tools and Procedures

Every patient who comes for ART service during the data collection time will be interviewed by trained enumerators. At the same time there clinical records will be looked for further and detail information. Data collection will be done from (November-December, 2013) will be registered. Patients will be interviewed for the following variables: Socio-demography, health and illness, knowledge, attitude to the Regimen, relation with health care professionals, HIV/AIDS related disease occurrence while taking ART and opinion of the health delivery system.

Some other methods are here mentioned below:

A) Key informants Interviews: Interviews will be conducted with the officials (2 ART Physicians) and 2 ART Nurses) from ZMH ART clinic who will be on provision of ART Service during the time of Data collection.

B) Observation: Professional ART Nurses will be observed for the ART Service delivery for the quality of service during pre and on initiation of ART counseling service.

C) Exit Interviews: All clients attending ART Service at ZMH during the Data collection period will be interviewed at exit points after they have got the ART Services. At the same time there clinical record was looked for. Data collation will be done from November-December, 2013. Patients were interviewed for the following variables. Socio- demography, health, illness, knowledge and attitude to the regimen, relation with health care provides professionals,

HIV/AIDS related disease while taking ART and opinion delivery system. Record review also carried out, and CD4 count, lymphocyte, adverse reaction to ARV and the duration of ART was recorded from the client chart.

D) Data collection and Quality Management.

E) Items concerning information on the questionnaire will be completed by interviewer and will be related to the respondents answer. The questionnaire will be translated to Amharic Language then back to English to ensure the consistency of the questionarie.The questionnaire will be Pre-Tested on a sample population of 10 clients using a treatment of HAART at Zewditu Memorial Hospital in order to make all the data collectors understand each question in a similar way and collect the intended information plus to finish out questionnaire needs to be amend. Two registered Nurses who are working at ART unit will be trained for one day before they engage to any activities. The interview will be conducted in a place where the interviewee feels free and alone with the respondants.The resonant right not to participate in the study will be respected for those who are found to refuse. In the same manner one supervisor will be selected (ART Clinician) and give a highlight/train about the study to ensure the completeness and quality of information during data collection. There will be a spot checking of the data collectors to give timely correction at mark. The filled questionnaire will be reviewed by the supervisor and the principal investigator at daily base after through checkups to manage problem encountered.

F) With regard to in-depth interview Ten study subjects with homogenous background will be considered and the study subject will be limited during data analysis process by checking for redundant information and saturation of ideas produced from the interviews. At the time of data processing data will be entered to the computer and 10 percent of the data entered will be cross checked for consistency.

G) The quality of data will be assured by:

H) Using standard ARTA Ver. 0001, Version 20/01/2011.

I) Translating the English questionnaire into Amharic then back to Engilish.Some discrepancies will be corrected before data collection.

J) Measurement/Tools.

K) 3.4. Questionnaire Design.

L) The questionnaire format was taken from the study was done at Addis Ababa university School of public health and some additional questions will be added from other studies and other sources downloaded from internet. The purpose of making this is to use standard questionnaire to ensure validity of the study. Some of the questionnaires and checklists were adapted from the ART Adherence Version 0001, Version 20/01/2011(ARTA Ver. 0001, Version 20/01/2011) for evaluating ART adherence.

M) 3.5. Data Collectors.

3.6 Data Analysis

The information collected from the respondents were sorted, coded and entered in datasheet created in Statistical Package for Social Science (SPSS) version 20. Double data entry system was used to minimize errors in data entry. Differences between adherence and non-adherence subjects were tested using *t*-Student test and Chi-Square test for continuous and categorical explanatory variables, respectively. The strength of association between explanatory variables and adherence was measured using logistic regression and was reported as odds ratio (OR) with 95% confidence interval.

First the association was measured for each explanatory variable in univariate model. Then each univariate model was adjusted for age and sex. In the second step, multivariate analysis was conducted including all the variables in one model. In the last step, only variables with statistical or borderline significant association in the multivariate model (including all variable) were included in the final model. The criterion for statistical significance was $p = 0.05$.

Variables of the study.

-Measured to conduct the study.

Independent variables.

Demographic characteristics.

Age, sex, religion, Marital Status, Monthly income.

Health service, to social care, and support.

Active substance use of drugs, chat and Alcohol.

Drug side effect, feeling of depression and CD4 count.

Benefits and importance of Adherence.

Factors related to belief in efficacy of medication.

Severity of non Adherence.

Satisfaction on HAART and services.

Dependent Variable.

ART adherence among PLHA.

3.7 Ethical Considerations

The proposal will be evaluated by IGNOU Research Department for the Topic and Methodology relevance. Ethical clearance will be obtained from IGNOU and Addis Ababa Regional Health Bureau. Information will be gathered on informed consent/voluntary bases after obtaining permission from each respondent and the respondent is autonomous to answer the entire question, to jump or interrupt in the middle and the right not to answer is also respected. The name of the respondent will not be recorded; the collected data will not be used for other information and purpose of the study will be explained, confidentiality requiring their personal feeling will be kept. The findings of the study will be disseminated to the relevant body.

CHAPTER FOUR

FINDINGS, INTERPRETATION AND DISCUSSION

4.1. Introduction

This chapter presents the results of assessment study on the adherence of the people living with HIV/AIDS to ART at Zewditu Memorial Hospital in Addis Ababa. Based on this, the chapter is organized into five sections. The first section presents socio-demographic and economic characteristics of the study participants. The next section is on those factors contributing to ART adherence. The third section describes the current ART adherence status of people living with HIV/AIDS. Section four dwells on descriptions of the patients' relationships with the health care providers. Finally, it tries to highlight and describe reasons for not taking the pills on time or missing doses which may contribute to their being ART non-adherence on the part of PLHA who have been clients at Zewditu Memorial Hospital in Addis Ababa, Ethiopia.

4.2 Socio-demographic and Economic Characteristics of the Respondents

Table 4.1: Sex of the Respondents

Sex	**F**	**%**
Male	46	46.0
Female	54	54.0
Total	**100**	**100.0**

Table 4.1 presents the profile of the respondents categorized by gender. More than half, 54(54.0%) of the respondents in the study were females, while 46(46.0%) of them were males. Thus, this study is coherent with the findings of studies conducted at different levels in Ethiopia. Females are generally found to be more vulnerable than males in the country and elsewhere in the world.

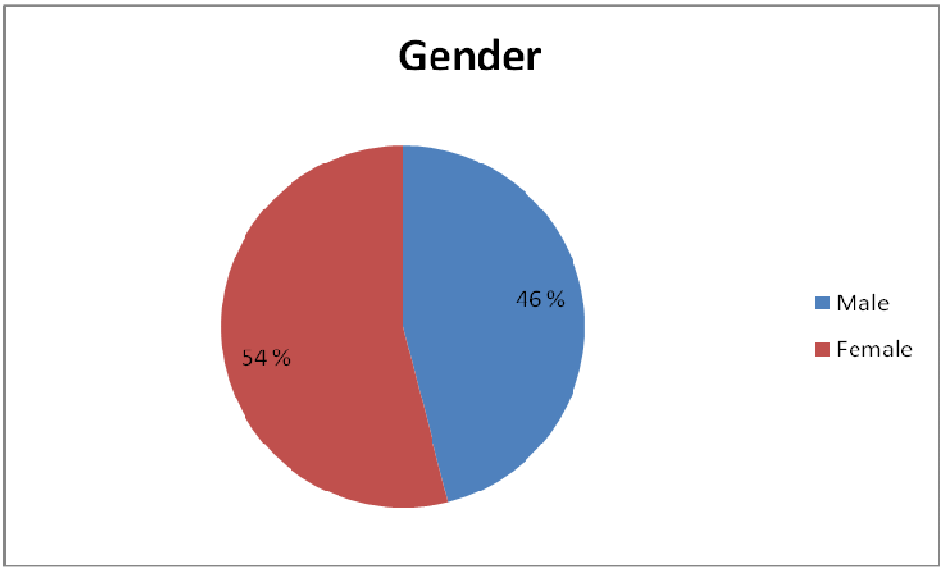

Figure 4.1 Pie Chart showing the Gender Composition of the Respondents

The study subjects are mostly adults in their reproductive and more or less sexually active age categories. The mean age of the respondents was 41.70 years (i.e. in the age category of 40 – 49 years). The ages of the majority (about two-third, 63.0%) of the patients in the study were found to be in the age brackets of 40 - 49 years (thirty-three percent) and 30 -39 years (only thirty percent). Therefore, as shown in the table, more adult women than their counter-parts are on anti-retroviral therapy at Zewditu Memorial Hospital.

Table 4.2: Sex of the Responding Patients by Age

Age category	Male		Female		Total	
	F	%	f	%	F	%
20 – 29	2	2.0	9	9.0	**11**	**11.0**
30 – 39	10	10.0	20	20.0	**30**	**30.0**
40 – 49	22	22.0	11	11.0	**33**	**33.0**
50 – 59	10	10.0	13.0	23.0	**23**	**23.0**
60 – 69	2	2.0	1	1.0	**3**	**3.0**
Total	**46**	**46.0**	**54**	**54.0**	**100**	**100.0**

As depicted in Table 4.3, a little bit less than half of the respondents in this empirical study were patients from Amhara ethnic group, followed by about one-fourth (23.0%) of Oromos. However,

these findings in the study show that only patients from four ethnic groups in the country were found to be the clients on ART at the Hospital. Although HIV/AIDS never discriminates people by their ethnic groups, this study comes up with quite different from the reality on the ground. This may be due to people's differential in their health seeking behaviour and some other related, but multi-dimensional issues. Anyways, this finding may have to do with the researcher's ethnic background, mother tongue, approach, proximity, the patients' willing to participate in the study and their daily routines of social life.

If the mean age of the sampled 100 patients was found to be 41.7 years and the standard deviation was 9.6 standard units of variability from the centre of the normal distribution, then (assuming this normal distribution of the empirical observations) 68% 9about two-thirds) of the ages of the PLHA on ART would be expected to fall in between 32.1 years and 51.3 years.

Table 4.3: Ethnicity of the Respondents

Ethnic group	**f**	**%**
Amhara	45	45.0
Oromo	23	23.0
Tigrie	17	17.0
Gurage	11	11.0
Other(s)	4	4.0
Total	**100**	**100.0**

Those people living with HIV/AIDS who participated in the study are mostly leading their life in a wedlock setting. As the empirical observations indicated, a total of 53(fifty-three percent) of the subjects from both sexes in the study were found to be in wedlock, but a little bit more than one-quarter (twenty-six percent) of them were singlers. Approximately, one-fifth of them reported that they had previously been married, but became widowed/widower and/or separated, as well as divorced at the time of interviews. Nevertheless, this seems to be a surprising evidence because those people who have been living wither in wedlock or have got married after getting

HIV-infected are still on ART at the Hospital. Therefore, these patients are living HIV positively and in marriage setting which is very important for all those endeavours at preventing and control of the pandemic at different levels in the capital city of Ethiopia.

Table 4.4: Marital Status of the Respondent/Patient

Marital Status	**f**	**%**
Unmarried/Single	26	26.0
Married	53	53.0
Separated	9	9.0
Widowed/Widower	12	12.0
Total	**100**	**100.0**

Table 4.5 illustrates that three-fourth of the patients on anti-retroviral therapy were affiliated with Orthodox Christianity. In addition, 13.0% and 11.0% of them were Protestants and Muslims, respectively. These results are concurrent with the empirical findings of the Ethiopian Central Statistical Authority. Thus, this is one of the empirical justifications for the fact that HIV/AIDS never and ever discriminates due to their religious affiliations.

Table 4.5: Religious Affiliation of the Respondent

Religion	**f**	**%**
Orthodox Christian	75	75.0
Protestant	13	13.0
Muslim	11	11.0
Other(s)	1	1.0
Total	**100**	**100.0**

Those patients who are on ART at Zewditu Hospital are literate in the sense that the significant majority of them have already achieved an education status of high school education and above.

Seventy-two percent of the responding patients were found to achieve educational status of either high school education or above high school education, such certificate, diploma, advanced diploma or first degree in one of the fields of studies in the science. Therefore, their education status may contribute to effective follow-up and continuous adherence of those patients to antiretroviral therapy at the Hospital. One can deduce that those patients who have higher educational status are more likely to adhere to ART than the others.

A total of 72 (seventy-two percent) of the participants in the study reported their occupational status as employed ones in different settings. In descending order, 25.0%, 15.0%, and 11.0% of the respondents were government employees, employed in different income generating endeavours, and daily labourers.

Table 4.6: Educational Status of the Respondent/Patient

Education status	**f**	**%**
Read and Write	9	9.0
Elementary School Education	19	19.0
High School Education	41	41.0
Above High School Education	31	31.0
Total	**100**	**100.0**

However, only one of them was found to be a student who pursued his/her lessons in the current Ethiopian Education System. Thus, it is at least good for these patients as they have had means of income in a certain fashion. They could use some amount of their income for purchasing balanced diet and develop positive attitude to adhere to ART.

Table 4.7:Occupational Status of the Respondent/Patient

Occupation	f	%
Government Employee	25	25.0
House Wife	5	5.0
Farmer	2	2.0
Unemployed	13	13.0
Daily Labourer	11	11.0
Student	1	1.0
Others	15	15.0
Total	**72**	**72.0**

As shown in Table 4.8, on average, the patients on ART at Zewditu Hospital earned an amount of money which ranged from ETB 2001 to ETB 3000 monthly. But, only twenty-one percent of the responding patients' monthly incomes were found to be in that range. Therefore, more than half of the respondents either earned less than ETB 2000 or had no incomes on monthly basis.

Table 4.8: Monthly Income in ETB of the Respondent/Patient

Monthly income	f	%
No Income	13	13.0
ETB 200 – 250	3	3.0
ETB 251 – 500	12	12.0
ETB 501 – 999	16	16.0
ETB 1000 – 2000	14	14.0
ETB 2001 – 3000	21	21.0
> ETB 3000	21	21.0
Total	**100**	**100.0**

The potential associate and correlate variables to study were chosen based on empirical findings of previous studies elsewhere in the world. In addition to the variables on the socio-demographics and those of treatment-related variables were used in the study, like HIV-infected patients' commitment to start ART and length/duration of stay on the therapy which were measured with respective single question asking whether or not they were committed to start the therapy and that of the length/duration of stay taking or starting ART.

Based on the summarized outputs of the univariate and bivariate statistical analysis techniques using the latest version of the SPSS software on socio-demographics of the patients associated and/or correlated with their commitment to start the ART and duration of stay on the therapy, there was some associations and/or correlations of the demographic factors (such as sex, religion and marital status) with the HIV-infected patients' commitment to start the ART but their age, ethnicity, educational status and monthly income were found not to be associated and/or correlated with their commitment to ART. In contrast, only the age and monthly income of the patients were statistically correlated with their duration of stay on the therapy. Nevertheless, other socio-demographics were found to be uncorrelated to the duration of ART. Generally, there were no most important socio-demographic factors that were found to be consistently both associated and correlated with both adherence to ART and duration of stay on the therapy in this study.

4.3 Social Supports for ARV Users

Social connectedness is an important element influencing adherence, acting either through reinforcement, reassurance or encouragement or by buffering the effects of variables that may interfere with the adherence. As family members and relatives provide supports to HIV patients and social supports are a key issues in achieving better rates of adherence, family members, relatives, friends, peers and health care providers should be involved in helping the PLHA to strongly adhere to their medications.

Social supports which may emanate from several sources are believed to help the patients for being ART adherence, including wedlock-partners, children, parents, peers, self-help groups, but just to mention a few. In this connection, about two-third (66.0%) of the patients in the study were found to live with their respective family, but the remaining proportion of them lived alone.

In contrast, about three-quarter (72.0%) of the respondents expressed that they had emotional or practical supports either they were found to live in family context or loneliness. Moreover, about one-third of the patients on ART in the study reported that they had no such types of supports. Thus, the patients mostly get various types of supports from those people in their social networks in daily routines of life in different contexts.

The researcher further considered the types of social support the respondents had got from different sources of support. The respondents have limited types and scope of social support in their respective social settings. Forty percent received material and financial supports, while thirty percent of them got supports in terms of either pieces of information or advice which might help them to become ART adherence. Therefore, one may conclude that these material, financial, information and advice supports for the patients contribute to their efforts at living positively in the given society and preventing, as well as controlling HIV/AIDS in Addis Ababa, Ethiopia

4.4 Factors Influencing ART Adherence among ARV Users

Adherence to ART is considered as a dynamic phenomenon that may change over time. It may also depend on the moods of ARV users and factors influencing their moods and wellbeing. Use of illicit drugs, for instance, may not make them to be eligible for receiving ARVs. Besides, consumption of alcoholics is another reason for some patients not to adhere to ARV medications in that the alcoholic drinks can reduce the effectiveness of the medicine. As to whether or not the responding patients abused any type(s) of substance, the findings of the study documented that almost all (96.0%) of them confirmed their living conditions away from the abuse of such substances. Even though their proportion was found to be meager, four percent of the respondents expressed that they used or abused chat (which accounted for 3.0%) and cigarette (1.0%).

In the same framework, a total of 50(fifty percent) respondents shared their experience of not currently using or abusing any types of drug. However, only six percent of them expressed that they were found to be users or abusers of drug(s), particularly chat. Therefore, the responding

patients in this study are against using or abusing drugs which may facilitate their adherence to anti-retroviral therapy.

Table 4.9: When did you hear about ARV?

Heard about ARV	f	%
Before My Illness	41	41.0
After My Illness	59	59.0
Total	**100**	**100.0**

Sensitization and awareness of the patient respondents are summarized in Table 4.9. The researcher posed a question about when they heard about ARVs. About three-fifth (fifty-nine percent) of the respondents informed that they got sensitized and became aware of the medications after they had become sick, while forty-one percent of them were aware of the ARVs before they became sick. Generally, all of the patients who participated in the study were got sensitize and became aware of the presence of ARVs in different settings in the city. Thus, one can deduce that these patients may quickly resort to such medications at a venue which appears to be user-friendly elsewhere in Addis Ababa.

More than two-third (69.0%) of the respondents reported that they got pieces of information on ARVs from different health professionals, but only 29.0% of them got such an information from the Mass Media (that is, TV, radio set and newspapers (See Table 4.10). Thus, the patients in this study were

Table 4.10: From where did the Respondents hear about ARV?

About ARV	f	%
From Health Professionals	69	69.0
From Mass Media	29	29.0
Others	2	2.0
Total	**100**	**100.0**

Table 4.11: After you had started ART, what types of benefit you got?

Type of benefit	f	%
Improved quality of life	85	85.0
Weight gain	11	11.0
Reduced fever	4	4.0
Total	**100**	**100.0**

Found to have pieces of information about ARVS and related issues at their disposal. This capacity of obtaining and accessing information on ARVs are very important to the patients in order them to become ART adherence thereby prolonging their life expectancy

The respondents also confirmed that they thought about the benefits of ART. Ninety-four (94.0%) of them argued that they benefited from antiretroviral therapy. Therefore, these patients committed to start the appropriate treatment or medications. As indicated in Table 4.11, more than four-fifth (83.0%) of the respondents were found to be committed to start antiretroviral therapy. Such a commitment to start the therapy may facilitate their HIV positively living and partly contribute to the comprehensive HIV/AIDS prevention and control endevaours of the City Government Administration of Addis Ababa, Ethiopia.

Table 4.12: Whether or not the Respondents committed to start ART

Committed to ART	f	%
Yes	83	83.0
No	17	17.0
Total	**100**	**100.0**

As shown in Table 4.12, the affirmative approach and positive deviance to be committed to start antiretroviral therapy on the part of the patients in this study came about different types of benefit from
the treatment. Disaggregated by types, improved quality of life (85.0%), and weight gain (11.0%) and reduced being febrile (4.0%). Thus, the significant majority of the respondents benefited from ART in terms of improving quality of social life in various contexts. One can conclude that ARV medications and related issues are believed to be promoters and facilitators fro positively living and improving the social life of the patients in Addis Ababa.

In the study, the researcher furthermore wanted to know whether or not the patient respondents knew the importance of adherence to ART before they started the therapy. The results of the study confirmed that ninety-five percent of them had already known the importance of ART adherence before they started receiving the medications. Therefore, such knowledge about the importance of ART adherence may encourage them to be committed to long time consuming and consistent scheduling medications on the part of the patients on ART.

Some other question considered in the study was about duration or length of stay of the patients on antiretroviral therapy. As the observations were found to be normally distributed, the researcher used the mean and the standard deviation as the preferred summary and descriptive statistics. The patients stayed on the therapy for a duration which ranged from 14 to 136 months. The patients, on average, stayed on ART for 87.55 months (more than seven years) and the standard deviation was calculated to be 33.12 months. Thus, about two-thirds (68%) of the patients are expected to stay on ART between 54.43 months and 120.67 months. One may deduce that there is 33.12 standard units of variability in their length of stay on ART.

On the other hand, the mean and the standard error of mean (SEM) can sometimes refer to the sample and at times to a study population. However, the mean duration of stay on the therapy in the sample of the patient respondents (87.55 months) was also the best estimate of the mean stay on ART of all patients in the population from which those samples were drawn. Based on SEM which was 3.31, if similar (random) samples were repeatedly drawn from the same population of those patients on ART; about 68% of those samples would be expected to have mean values

Table 4.13: Disclosure Status of ARV Treatment

Family and Relatives	F	%	Mean	SD
Family and Relatives	90	90.0	1.04	.315
Wife	26	26.0	1.68	.530
Friends	21	21.0	1.73	.510

between 84.2 months and 90.8 months (i.e. the range of values between 1 SEM above and below the estimated mean).

As a number of books on medical issues argued, the preferred expression for an estimate and its precision is the mean and the 95% confidence interval (CI) (which is the range of 6.62 mean or 2 SEM). Therefore, the mean value was 87.6 months (95% CI=80.9 months to 94.2 months) meaning that if randomly selected samples were repeatedly drawn from the same population of the patients about 95% of these samples would be expected to have mean values between 80.9 months and 94.2 months. One can then conclude that there is high degree of variability in the length of stay on ART on the part of those patients under investigation in Addis Ababa.

The outputs of the statistical data analysis indicated that a significant majority of the respondents disclosed their HIV- positive status and ARV treatment status to anyone in their social networks. Ninety-five percent of them expressed that they disclosed those statuses to family and relatives (90.0%), wives (26.0%) and their friends (21.0%) as shown in Table 4.13.

The descriptive statistics for the scales related to disclosure status of ARV treatment of the sampled respondents are also presented in the same table. Looking at each item of this scale, the mean of their

Disclosure level to their friends was highest (Mean=1.73, SD=.510) and that of the family and relatives was lowest (Mean=1.04, SD=.315). The disclosure of one's ARV treatment status may serve as social support for the patients which, in turn, facilitates to their ART adherence in the city.

The patients who are living with HIV/AIDS and engage in ARV treatment have already become aware of the benefits of taking ART, such as AIDs will be delayed (83.0%), they get cured

(91.0%), get sick (93.0%) and live longer life than others (92.0%). Therefore, the majority of the respondents in the study experience the multi-dimensional benefits of the ART. One may deduce that the recognition of those benefits of the treatment can bring them along their right track to be within the framework of ART adherence.

When the patients who are on ART are taking the ARVs, there are some specific requirements and regulations. When they were taking the ART, they believed that the medications had to be taken at specific time (96.0%), the pills for the rest of the patients' life in order to delay AIDS (96.0%), the daily dose should be respected (89.0%), and the patients took fixed combined single drugs (89.0%). Thus, the respondents are well-aware of those requirements and medical regulations so that they can stay adherence on antiretroviral treatment.

Table 4.14 shows those suggestions about fixed dose or single drugs in the process of ART. Thus, One more question related to ART adherence which might help the researcher to further assess it among PLHA is on suggestions about the drugs. More than two-thirds (67.0%) of the respondents stated that such suggestions were prescribed to reduce pill burden and 17.0% of them expressed the suggestions in terms of their contribution to easiness to remember and/or to take the drug(s). Although the proportion of the respondents was meager (16.0%), there were some patients in the study who did not have any idea on those suggestions.

Table 4.14: Suggestions about Fixed Dose or Single Drugs

Type of suggestion	**F**	**%**
Reduce pill burden	67	67.0
Easy to remember	8	8.0
Easy to take	9	9.0
Do not know	16	16.0
Total	**100**	**100.0**

Another related questions on aspects of ART adherence include whether or not the respondents were comfortable when taking ARV in front of others, the treatment schedule fitted to their daily routines of social life, they were satisfied with the clinical services, the patients had open communications with health care providers, they obtained education or lessons when needed, knew the presence of adherence supporters, got adequate counselling from the adherence supporters, they were satisfied by the improvement they already obtained from the treatment, and satisfied by the confidentiality of the treatment unit. The majority of the respondents show positive attitude towards those indicators for facilitating adherence to ART. In that given order, 89.0%, 95.0%, 96.0%, 98.0%, 84.0% (every three months), 73.0%, 97.0%, 97.0%, and 99.0% of those respondents in the study were found to report their responses in affirmative manner. Thus, they are at excellent conditions so that they can adhere to ART.

Regarding the residence location of those patients on ART, there is significant variability in the distribution of such observations. As depicted in this section of the thesis, the distance of the residence of those patients on ART from the service delivery Health Unit ranged from 2.00 km to 273 km. The respondents, on average, travelled 16.86 km away from their respective home in order to get the ART Unit. In addition, the degree of variability of the empirical observations was found to be 34.20 standard units from the centre of the distribution. Therefore, if one drew similar (random) 100 samples of patients on ART from the study population, then the expected mean of about sixty-eight percent of the samples would be between 17.34 km to 51.06 km. Thus, there is a heterogeneous distribution in the location of the patients' residence from their respective ART Unit where they were clients to the clinical services.

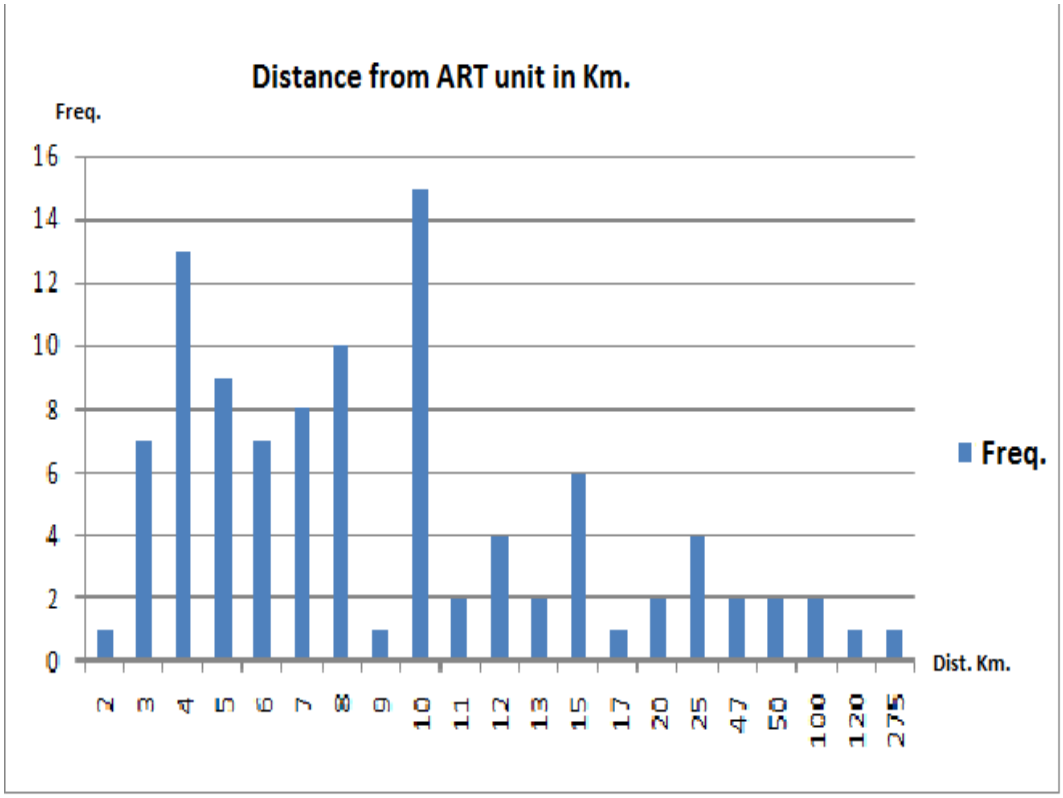

Figure 4.2: Histogram showing the Distance of the Patients' Residence on ART from the Unit

Recognizing and considering the location of the patients' residence from the ART Unit and the different means of transportation being used by them to visit the respective Unit seem worth important because their association with non-adherence to the therapy. Table 4.15 illustrates that forty-five percent of the clients in the study used taxi, twenty-eight percent were found to be bipedal who walked on their feet, nineteen percent of them used public transport and only eight percent of them used their own vehicles. Therefore, seventy-two percent of them used different means of transport while they were visiting the ART Unit in Addis Ababa. The significant majority of them in the therapy do not have problem in accessing the Unit, but what matter is they may run in short of hand as their monthly incomes range from ETB 2000 to ETB 3000. IN addition, there is a soaring up of living expenses in the capital city of Ethiopia.

A sense of satisfaction on the part of those patients on antiretroviral therapy may influence their adherence to the treatment. It was pleasing many PLHA that participated in the quantitative study seemed to be satisfied with their scheduled appointments of the treatment Unit at Zewditu

Memorial Hospital. Almost all of the patients on ART (97.0%) reported that they were satisfied with their schedule appointments. Thus, this satisfaction in one way or another has to do with whether or not the patients have missed dose(s) of the prescribed pills. Hence, the majority (87.0%) of the patients on the therapy did not miss ART drugs in the last month(s).

The HIV/AIDS patients on ARVs use different strategies to help them to adhere to their medications, such as adherent aids, selecting an appropriate schedule for taking ARVs and some inappropriate behaviours) because they had been very creative in devising different coping mechanisms for their adherence to the medications in different conditions.

Table 4.15: Means of Transport used by the Patients on ART for visiting the Unit

Type of transport	**f**	**%**
On foot	28	28.0
Public transport	19	19.0
Own vehicle	8	8.0
Taxi	45	45.0
Total	**100**	**100.0**

As Table 4.16 presented, alarm reminders (either watch bell or cell phone reminder) were mostly used by ARV users to remind them to take the pills on timely and regular basis among those clients at the Memorial Hospital in Addis Ababa. Seventy-seven percent (i.e. 74.0% used watch bell and 13.0% employed cell phone reminder) to adhere to their respective ART regimes at Zewditu Memorial Hospital.

However, thirteen percent of the patients on ARVs were found to miss their daily dose(s) in the last month(s). With this regard, twelve percent of them missed 1 - 2 doses per month, but only one percent of the patients missed six or more doses per month. When one shortened the duration of missed ART drugs, it was found out that 11.0% of the patients missed only one dose in the last seven days, whereas only 2.0% of them were found to miss three or more doses in the last week. Therefore, almost all of those patients on ART do not miss their prescribed does of pills. But even those who had missed their ARV doses were not taking only one dose either in the last month or last seven days. Generally, the patients on ARVs at Zewditu Memorial mostly do not miss their scheduled does of the ART drugs. In other few cases, on the contrary, the ART adherence aids do not work properly as there are such instances of drug holidays on the part of PLHA who are clients of the ART Unit at the Memorial Hospital.

4.5 Reasons for Missing ART Doses

In order to further assess and identify issues related to adherence to ART, the researcher focused on reasons for not taking the medications on the scheduled time or missing doses. As shown in Table 4.17, limited number and types of reasons were cited by the respondents, such as simply forgot as one of the most commonly reason to do which accounted for only eight percent of the responses.

Table 4.16: Reasons for not taking Doses on Time or Missing Doses

Type of reason	**f**	**%**
Simply forgot	8	8.0
Were too busy	2	2.0
Being away from home	1	1.0
Too many pills to take	1	1.0
Problems in taking the pills empty stomached/without meals	1	1.0
Total	**13**	**13.0**

Table 4.17: What Types of Schedule Use as Reminder?

Type of schedule	f	%
Pill Box	8	8.0
Written Reminders	4	4.0
Watch Bell	74	74.0
Cell phone Reminder	13	13.0
Don't Have	1	1.0
Total	**100**	**100.0**

Nevertheless, the least commonly expressed reasons for missing doses of ARVs which were reported by the respondents found to be the prescription of too many pills to take, being away from home and problems of taking the pills empty stomached or without having meals – each accounted for only one percent of the grounds mentioned by them. Thus, those patients on ART usually miss the prescribed does of pills simply on the ground of being forgetfulness on their part.

In summary, most of the clients of the ART Unit at Zewditu Memorial Hospital were adult women who were found to be married, Orthodox Christians, Amharas, reached at high school or above in their educational status, engaged in limited types of occupation and then earned a reasonable amount of monthly salary, who found themselves in limited types , as well as scope of social supporters (such as family and relatives, including wives) providing supports in terms of materials and financial resources.

The study findings further underscored such factors influencing ART adherence among ARV users as not using or abusing any types of drug, including hard drugs, being aware of ARV treatment both before and after being ill or sick, got pieces of information on the treatment from the health professionals and the Mass Media, and they already got convinced themselves about

the multi-faceted benefits of ART, especially in terms of improving one's quality of life before they started receiving the medications. Thus, on average, the clients stayed on ART for more than seven years.

In addition, the patients mostly disclosed their status to their family and relatives as they were aware of the benefits of getting involved in ARV treatment because it delayed the onset of full-blown AIDS, being cured and even they believed that they could live longer than others. Similarly, the patients knew the facts that the doses should be taken at specific time, due respect to be given to daily doses and they took fixed combined single drugs. There were some suggestions regarding fixed dose or single drugs, for example, in terms of reducing pill burden.

The majority of the patients on ARVs in the study showed positive attitude towards those facilitating indictors for being adherence to ART. However, these patients, on average, had to travel by taxi and/or public transport for 16.86 km in order to visit the ART Unit at the Hospital in Addis Ababa. Within this framework, they were satisfied with their scheduled appointments to visit the Unit. The patients further used alarms of watch bell and cell phone reminder not to miss their daily prescribed doses of ARV.

Nevertheless, against those integrated efforts on most of the patients on ART at Zewditu Memorial Hospital, a few of them regrettably missed the doses due to their simply being forgetfulness. On the whole, the findings of this study argued that the people living with HIV/AIDS and attending the therapy in the Unit at the Hospital were adherence to ART.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Adherence to antiretroviral treatment (ART) is essential for clinical success among people living with HIV/AIDS (or HIV-infected people). The objective of this study was to assess ART adherence among people living with HIV/AIDS (PLHA) who were attending ART Clinic at Zewditu Memorial Hospital. Specifically, it aimed to assess the current adherence status of PLHA to ART at the Clinic of the Hospital in Addis Ababa, to identify factors contributing to ART adherence; to investigate reasons for the patients missed ARV drug doses, to examine the patients' relationships with the health care providers at the Clinic, and to identify the contribution of the health care system and the clinical setting for ART adherence at the Unit.

Based on those threads of argument which have been discussed throughout the thesis and those major findings well-supported by the empirical evidence generated, it can be argued that ART adherence is based on inter-related and multi-dimensional socio-demographic characteristics of the patients and other contributory, as well as facilitating factors in the local setting of the ART Clinic at the Hospital.

The study identified high levels of ART adherence in this sample. The high adherence may be partly explained by characteristics of the clinical services. All patients in the study were receiving ART and related laboratory and treatment services at no cost, removing a financial barrier that has been observed as an adherence barrier in other settings. This study clearly therefore shows that adherence to ART is common among this sample of HIV/AIDS patients at Zewditu Memorial Hospital in Addis Ababa.

The socio-demographics are not contributory factors for improving adherence of the PLHA. There is also no significant difference among the proportions of the two gendered groups – males and females. Thus, there is no statistical evidence indicating an association between the patients' involvement in ART to be adherence to the treatment and their demographics.

While adherence is very high in this setting, not all patients manage to adhere to their medications. Three factors emerge that differentiated those who have achieved adequate adherence from those who do not achieve adequate adherence. Moreover, the evidence generated highlights the importance of social support in facilitating good adherence. Patients talk about three forms of support they have received from family members: reminders to make medication, emotional support that helped to 'normalize' HIV, and material supports in the form of food and money. Reminders that patients have got from others contribute to their adherence skill set and directly help them to remember to take their medications on time. Emotional support increases patients' motivation to adhere by providing an expectation that they could achieve good health and by placing greater value on good health. Material supports have further assisted the patients to overcome direct barriers of lack of food and transportation fees, which may have otherwise hindered adherence. In this way, the empirical data suggests that social support influences adherence by increasing patients' skills and motivations to adhere and also by directly impacting their self-efficacy to adhere, despite potential barriers.

The study furthermore argues that there are factors influencing ART adherence among ARV users, such as the patients do not use or abuse any types of drug, including hard drugs, being aware of ARV treatment both before and after being ill or sick, have got pieces of information on the treatment from the health professionals and the Mass Media and they have already got convinced themselves about the multi-faceted benefits of ART, especially in terms of improving one's quality of life before they started receiving the medications. Thus, on average, the clients have stayed on ART for more than seven years. In addition, the disclosure of ART status to their family and relatives contributes to ART adherence. The patients further use alarms of watch bell and cell phone reminder not to miss their daily prescribed doses of ARV.

As there are instances of missing a dose in those previous months, the empirical observations also indicate the moderate prevalence of missing the dose during the weekend because of being forgetful. In addition, the prevalence of missing scheduled appointments of the treatment Clinic is generally at its low level.

The patients are satisfied with their scheduled appointments to visit the Unit. The relationships between the patients and the health care providers are friendly and harmonious to facilitate the

ART adherence at the Clinic. Consequently, the findings of the study indicate the contribution of the existing health care system and clinical setting of the Clinic for the treatment adherence.

The results of this study have thrown a light in the shadow and then highlighted areas where interventions may be useful to improve adherence of the HIV-infected patients at the ART Clinic in Addis Ababa. Although the results cannot be generalized, there are valuable contributions that have been made by this study. While an important contribution has been made to adherence/compliance research in general, this study has also paved the way for research aimed at improving adherence to antiretroviral treatment research in Addis Ababa context.

This study contributes to the international literature on adherence to ART and the field of HIV/AIDS treatment and care in the capital city in several ways. The identification of ART adherence levels and factors influencing adherence among PLHA in the city allows the early recognition of groups with special characteristics that should be carefully supported along the treatment pathway to increase its effectiveness.

In addition to global strategies, different sets of targeted interventions may be needed for special groups of the patients due to the wide spectrum of factors that may influence adherence to ART. Based on the results of this study and the existing local situations, socio-culturally and economically relevant strategies, therefore, seem to be necessary to improve ART adherence among PLHA at the Clinic of Zewditu Memorial Hospital in Addis Ababa.

5.2 Recommendation

Possible and plausible suggestions could be forwarded to improve the quality and uptake of the ART services based on the findings of the study and the conclusions drawn from them.

- It is suggested that this study should be replicated in the future with certain changes. In subsequent studies of this nature, a larger sample should be used that is more representative so that the results can be more generalizable to the larger population of individuals on antiretroviral treatment. Larger cell sizes are also recommended to explore critical biographical variables. Much of the research cited in this study comes

from international sources. This indicates a need for Ethiopian research in this area in light of the ARV roll-out program me.

- The development of social work theories contextually relevant to Addis Ababa audience in order to guide further research might assist in further research to enhance adherence to ART. Theory development will benefit from a multi-disciplinary effort of social workers, sociologists, medical providers, psychologists and others.
- Interventions by medical practitioners, social service providers, health care providers and policy makers can effectively enhance the likelihood of adequate adherence. This is an area of research that should be explored further in the future.
- It is also recommended that further replication of this study include qualitative information into the data collection as this will serve to confirm and enrich quantitative data. As qualitative research focuses on specific context settings of interactions it could be valuable in the replication of this study in understanding the factors that impact on optimal adherence to antiretroviral treatment in the city context.
- As demonstrated by the research findings, a patient's adherence to ART is influenced by a wide variety of factors related to patients' beliefs and behaviour, the health system, and social and cultural issues. The researcher recommends that further research should be conducted using mixed research methods, including participant observations and capturing the actual interactions between patients and their health care providers. These findings can inform the design of behavioral research focused on psychosocial, social, and cultural factors that affect adherence and contribute to a deeper understanding of ways in which to overcome these potential barriers to ART adherence.

References

MOH, Disease prevention and control department, AIDS in Ethiopia, 5th Edition, and Addis

Ababa, MOH, 2004

MOH, Disease prevention and control department, AIDS in Ethiopia, 8thEdition, and Addis

Ababa, MOH, 2007

MOH, Disease prevention and control department, AIDS in Ethiopia, 9 th Edition, and Addis

Ababa, MOH, 2009

Federal Democratic Republic of Ethiopia. Policy on anti-retroviral drugs, supply and

Use. Addis Ababa, Ethiopia, July 2002.

Antiretroviral therapy program for HIV- infected patients in Ethiopia. Protocol prepared by

Ethiopian Health and Nutrition research institute, Black Lion Hospital, Police Hospital, and

Armed Force General Hospital, 2002.

The Federal Democratic Republic of Ethiopia. MOH press release on anti-retroviral drugs,

Supply and use. Addis Ababa, Ethiopia, September 2006

Eric S. et al. Improving Adherence to Antiretroviral Therapy. Cliggott Publishing, Division.

AIDS Read 13(2):81-90, 2003.

Monforte A.A., Testa L., Adorni F., et al. Clinical outcome and predictive factors of failure

of highly active antiretroviral therapy in antiretroviral-experienced patients in advanced

Stages of HIV-1 infection.AIDS 1998; 12:1631-7.

Paterson D.L., Swindells S., Mohr J., et al. Adherence to protease inhibitor therapy and

Outcomes in patients with HIV infection. Ann Intern Med 2000; 133:21-30.

Gifford AL, Bormann JB, Shively MJ, Wright BC, Richman DD &Bozzette SA (2000).

Predictors of self-reported adherence and plasma HIV concentrations in patients on

Multidrug antiretroviral regimens.*Journal of Acquired Immune Deficiency Syndromes*, 23:386-395.

Zolopa AR, Shafer RW, Warford A, Montoya JG, Hsu P, Katzenstein D, Merigan TC &

Efron B (1999). HIV-1 genotypic resistance patterns predict response to saquinavir-ritonavir Therapy in patients in whom previous protease inhibitor therapy had failed.*Annals of Internal Medicine,* 131:813-821.

Wainberg MA &Friedland G (1998). Public health implications of antiretroviral therapy

and HIV drug resistance. *Journal of the American Medical Association,* 279: 1977-1983.

Morse EV, Simon PM, Coburn M, Hyslop N, Greenspan D &Balson PM (1991).

Determinants of subject compliance within an experimental anti-HIV drug protocol.

Social Science and Medicine, 32: 1161-1167.

Eldred LJ, Wu AW, Chaisson RE & Moore RD (1998). Adherence to antiretroviral and

Pneumocystis prophylaxis in HIV disease.*Journal of Acquired Immune Deficiency*

Syndrome, 18: 117-125.

Mothashari F, Riley E, Selwyn PA &Altice F (1998). Acceptance and adherence with

Antiretroviral therapy among HIV-infected women in correctional facility.*Journal of*

Acquired Immune Deficiency Syndromes and Human Retro virology, 18: 341-348.

Akalu, M. ,Haltbak, J. , &Blytad, A. (2005). Barriers to antiretroviral treatment adherence

for Patient living with HIV infection and AIDS in Arbaminch Hospital, Southern

Ethiopia.http://www.blsmeetings.net/implementhiv2006/Posters2.cfm

AIDS Bulletin (2004). Promoting ARV adherence, 13 (3)

Amico, K. R. , Fisher, W. A. , Cornman, D. H. , Shuper, P. A. , Redding, C. G. , Konkle

Parker, et al. (2006). Visual Analog scale of ART adherence: Association with 3-day self-

report and adherence barriers. *Journal of Acquired Immunodeficiency Syndrome, 42 (4):* 455- 459.

Andrews L. &Friedland (2000).*General Infectious Disease Clinical, 14,* 901

Ayalew Mengesha (2005). Assessment of adherence to antiretroviral therapy among HIV infected persons in the Ministry of National Defense Force Hospitals, Addis Ababa and

Ababa University, School of Graduate Studies

Haubrich RH, Little SJ, Currier JS, Forthal DN, Kemper CA, Beall GN, Johnson D, Dube

MP, Hwang JY &McCutchan JA (1999). The value of patient-reported adherence to Antiretroviral therapy in predicting virologic and immunologic response.*AIDS*, 13: 1099- 1107.

Chesney MA, Ickovics JR, Chambers DB, Gifford AL, Neidig J, Zwickl B & Wu AW (2000). Self-reported adherence to antiretroviral medication among participants in HIV Clinical trials; the AACTG Adherence Instruments.*AIDS Care*, 12: 255-266.

Kastrissios H, Suarez JR, Katzenstein D, Girard P, Sheiner LB & Blaschke TF (1998).

Appendices

Appendix A: Structured Interview Schedule

Interview Schedule ID. No. ----------

Indira Gandhi National Open University, Social Work Department

This Questionnaire is prepared to ask patients enrolled to ART care on ART adherence at Zewditu Memorial Hospital.

My Name is _____working as a data collector for Ato Melaku Kebede for the purpose of partial fulfillment of master degree in social work. He is conducting a study on ART adherence at Zewditu Memorial hospital. The information you give will contribute to measures that are taken on ART adherence. If you agree to be involved in this study, I would like to ask some questions and this will take about 30-45 minutes. The information you give will be kept confidential. If there is any problem you can stop at any time.

Do you agree to participate in this study?

1.Yes (Continue to ask the question) 2. No. (Stop to ask the questions)

Interviewer Name: _____ Supervisor Name: _____

Signature_____ Signature _____

Date_____ Date _____

SECTION 1.SOCIO DEMOGRAPHIC CHARCTERSTICS			
No.	Questions	Coding categories	Code
101	Sex	1- Male 2- Female	
102	Age		
103	Ethnic groups	1- Amhara 2- Oromo 3-Tigraie 4. Garage 5. other specify_____	
104	Marital status	1- Unmarried 2- Married 3- Divorced 4- Separated 5- Widowed	
105	Religion	1- orthodox 2- catholic 3-protestant 4- Muslim 5-other ----------	
106	Educational status	1- Illiterate 2- read and write 3-Elementary 4-High School 5- Above high School	
107	Occupational status	1- Government employee 2- Housewife 3- Farmer 4- Unemployed 5- Daily labor 6- Student 7- Other specify ----------	
108	Monthly income(In Birr)	1- No income 2- 200-250 3- 251-500 4- 501-999 5- 1000-2000 6- 2001-3000 7- >3000	

Section 2. Social assessment			
No	Questions	Coding Categories	Code
201.	With whom do you live?	1. Live alone 2. My family 3. My relatives 4. Unstable 5. Otherspecify_____	
202	Do you have any emotional and practical support?	1.yes 2.No	
203.	If yes to question 202. What support you have?	1. Marital and finance 2. Information/advice 3. Other specify_____	
204.	Have you ever abuse substance?	1.yes 2.No	
205.	If yes to question 204, which substance do you use?	1. Chat 2. Cigarette 3. Alcohol 4. Illicit drugs 5. Others specify_____	

206.	Are you currently use/abuse drug	1. Yes 2. No	
207.	If yes to question 206, which substance do you use?	1. Chat 2. Cigarette 3. Alcohol 4. Illicit drugs 5. Others specify_____	

Section 3: Knowledge about ART and adherence			
Knowledge about ART			
No	Questions	Coding Categories	
301.	When did you hear about ARV?	1. Before my illness 2. After my illness 3. During my illness	
302.	From where did you get the information about ARV?	1. H/care professionals 2. Mass media 3. Others specify_____	
303.	Do you think ART benefits you?	1. Yes 2. No	
304.	Are you committed	1. Yes 2. No	

	/convinced to start ART?		
305	After you had stared ART, What benefit did you get?	1. Improved quality of life 2. Weight gain 3. Reduced fever 4. Reduction of hospitalization 5. Reduce frequency of diahorrea 6. No benefit at all.	
Knowledge about adherence			
306.	Do you know the importance of adherence before you start ART?	1. Yes 2. No	
307.	How long have you been on ART?	_____(in months)	

308.	Have you disclosed your HIV status to any one?	1. Yes 2. No	
309.	If yes to the above question, to whom?	1. Wife 2. Family and relatives 3. Friends 4. Others specify_____	
310.	When taking ART, AIDS will be delayed?	1. Yes 2. No	
311.	When taking ART, an HIV infected person will be cured from AIDS?	1. Yes 2. No	
312.	When taking ART, it can happen that one may get sick from the Rx itself?	1. Yes 2. No	
313.	When taking ART, Do you think the person will live long?	1. Yes 2. No	
314.	When one takes ART, it has to be taken at specific time?	1. Yes 2. No	
315.	When one takes ART the daily dose should be respected not be skipped?	1. Yes 2. No	
316.	You should take pills for the rest your life to delay the development of AIDS?	1. Yes 2. No	
317.	Are you taking a fixed dose combined or single drugs?	1. Yes 2. No	
318.	What do you suggest about a fixed dose combined or single drugs?	1. Reduce pill burden 2. Easy to remember 3. Easy to take 4. I do not know	
319.	Do you feel comfortable when taking ART in front of others than before?	1. Yes 2. No 3. Not sure	
320.	Does the Rx schedule fit the daily routine than the previous?	1. Yes 2. No 3. Not sure	
321	What types of schedules do you use to remember to take your medication?	1. Pill box 2. Written reminders 3. Watch bell 4. cellphone reminder 5. Don't have	

Section 4. Patient/Adherence Supporter/providers relationship			
No	Questions	Coding categories	Code
401	Are you satisfied with the clinical Service?	1. Yes 2. No 3. Not sure	
402	Do you have open communication with health care providers treating you?	1. Yes 2. No	
403	Do you obtain education or assistance when you need help during your visit?	1. Every month 2. Every 2 months 3. Every 3 months	
404	Do you know the Adherence Supporters?	1. Yes 2. No	
405	Have you got adequate adherence counseling service from adherence supporters?	1. Yes 2. No	
406	Are you satisfied by the improvement you obtain for your treatment?	1. Yes 2. No 3. Not sure	
407	Are you satisfied in the confidentiality of the treatment unit?	1. Yes 2. No 3. Not sure	

Section 5. Health Care system and clinical setting			
No	Questions	Coding categories	Code
501	How far is your residence from the ART unit you are attending?	_____(in Km)	
502	What means of transportation do you use to	1. On foot 2.	

	visit ART Clinic	Public transport 3. Own vehicle 4. Taxi 5. Others specify _____	
503	Are you satisfied in the scheduling appointment of the treatment unit?	1. Yes 2. No 3. Not Sure	

Section 6: Adherence assessment			
No	Questions	Coding categories	Code
601	Have you ever missed your ART drugs	1. Yes 2. No 3. I don't know	If No leave the below Qs
602	If yes to 601 How frequent?	1. 1-2 doses per month 2. 3-5 doses per month 3. 6 or more doses per month	
603	How many doses have you missed in the last 7 days	1. One dose only 2. Two doses only 3. 3 or more than 3 doses	

Section 7: reason for skipping the doses			
No	Questions	Tick all possible reasons	
701.	Being away from Home		
702.	Were too busy		
703.	Simply forget		
704.	Too many pills to take		
705.	Wanted to avoid side effects		
706.	Did not want others to notice me taking the medication		

707	Had a change in daily routine		
708	Felt like the drug was harmful		
709	Felt a sleep		
710	Felt sick		
711	Felt depressed over whelmed		
712	Had problem of taking meal at specified time (meals. Empty stomached……)		
713	Felt good		
714	Run out of pills		
715	Taking medication reminded my HIV		
716	Confused about the dosage		
717	I thought the medication had no value		
718	People told me the medication is not good		

Appendix 1: PROFORMA FOR SUBMISSION OF MSW PROJECT PROPOSAL FOR APPROVAL FROM ACADEMIC COUNSELLOR AT STUDY CENTRE

Enrolment No:ID 1051171_____

Date of Submission: __May 16,2014._____

Name of the Study Centre: St. Mary's University College

Name of the Guide: Ephraim Mebrate (Mr)

Title of the Project: **ASSESSMENT OF ART ADEHERENCE AT ZEWDITU MEMORIAL HOSPITAL ADISS ABABA**

Signature of the Student: _____

Date: __May 16,2014._____ Enrolment No: **ID_1051171**

Approved/Not Approved Name: __Melaku Kebede_____

Address: __Addis Ababa_____

Date: __May 16,2014._____

Name: Ephraim Mebrate(Mr)

School of Graduate Studies

St. Mary's University College

Address of the Supervisor: Addis Ababa, Ethiopia

Signature: …….....

Assessment of ART Adherence
At Zewditu Memorial Hospital

Masters Degree in Social Work Project Proposal (MSWPt-001)

Prepared by: Melaku Kebede

Enrollment No: ID1051171

Project Supervisor: Ato Ephraim Mebrate.

Submitted to: Indra Gandhi National Open University

School of Social Work

Addis Ababa, Ethiopia

Submission Date: February 20, 2014.

Table of Content

Abbreviations and Acronyms

Contents

Chapter Three

Chapter Four

Chapter Five.

Abbreviations and Acronyms

AIDS - Acquired Immunodeficiency Syndrome

ART - Antiretroviral Therapy

ARVs - Antiretroviral Drugs/Medications

HAART- Highly Active Antiretroviral Therapy

HIV - Human Immune Deficiency Virus

MOH -Ministry of Health

PLWHA - People Living with HIV/AIDS

PMTCT- Prevention of Mother to Child Transmission

UNAIDS- Joint United Nations Program on HIV/AIDS

VCT- Voluntary Counseling and Testing

CHAPTER ONE.

1. Introduction

The emergency of the HIV epidemic is one of the biggest public health challenges of the world has ever seen in recent history, or in the latest three decades HIV has spread rapidly and affected all sectors of society. Young people and adult, men, woman, and the rich and the poor, sub-Saharan Africa is at the epicenter of the epidemic and continues to carry the full brunt of its health and socio economic impact. Ethiopia is among the countries most affected by HIV epidemic within estimated adult prevalence of 1.5%, it has a large number of people living with HIV (Approximately 800,000 and about 1 million AIDS orphans. Despite these mounting the global response has been a reason for hope and optimism in fighting the epidemic application of effective efforts. (MOH, 2004).After claiming millions of lives and orphaning millions of children in the world, HIV has become a manageable chronic disease that can be treated but not yet cured, by antiretroviral drugs (MOH, 2006).

Since the discovery of the first ART drugs were made, of these, the introduction of HAART (Means Highly Active Anti Retroviral Therapy) is considered by many, as one of the wonders of modern medicine. The availability of HAART as a FDC adds to this medical accomplishment by decreasing the pill burden for patients and hence contributing to improved drug adherence. Regarding ART service scale up the government of Ethiopia took the initiative of providing fee based single anti-retroviral (ARV) drugs in 2003 and free ARV drugs in 2005. As the result of this imitative there has been a dramatic increase in number of patients enrolled into HIV care and treated for HIV. As of October 10, 2007 FHPCO's report, 109,552 patients have ever been started on (ART anti-retroviral therapy) and 82,248 patients are currently taking ART. The existing HARRT with the use of single drugs has the disadvantage of high pill burden, difficult schedule, potential poor adherence, difficult supply management, and possible association Since patients on ART are likely to take quite a number of pills per day in addition to high pill burden may contribute to poor adherence. However adhering to treatments crucial, as partial or erratic doses or will lead to resistance to the medication and ultimately failure. The simpler the treatment the, more chance that the patient will continue to take their medicines. This is the reason why we need

FDC (fixed dose combination) .Recently as an existing of the government's commitment to make HARRT more simplified affordable and accessible to the majority of Ethiopians living with the virus it is expanding its initiatives to introduce ARV Fixed Dose.(FMOH,2007).

1.2 Statement of the Problem.

Assessing the adherence of people receiving ART is very essential aspect to understand whether the service is going towards the intended goals and objectives. Therefore, understanding the degree of adherence and its barriers would support the Government, people receiving ART and others to design feasible intervention methods to enhance adherence.

The benefits of ART are only a tenable when adherence to precise dosing schedule is practiced and other treatment requirements are closely followed. Since ART is at its early stage in Ethiopia, there are no adequate researches done on Adherence**.** The Adherence people receiving ART In my work experience, I realized some people are not taking their ART medication properly due to various reasons. (FMOH, 2006). It is based on this View point that I decided to do my dissertation on this issue.

1.3 Significance of the study

Ethiopia has been engaged in the scale up of ART accesses to its people since 2005. despite challenges like poor health infrastructure lack of state of the ART diagnostic tools, and shortage of health care providers, ART scale up has recorded the greatest achievement in the number to people reached and facilities providing the ART service had increased from 3 to 838 and people started on HIV treatment increased from 24,000 to 379,190 from 2006 to 2012.(FMOH, 2007).

Even though the number of PLHIVs who have ever started ART has reached 379, 190, not more than 249,000 are still in treatment. This shows that only 70% of those who are starting the treatment were retained in the program. The proportion of the clients who retained to care at different sites varies between 70-80. Hence, in parallel with the scaling up of the ART service, the government of Ethiopia with its partner organization has been work to mitigate the challenges of, retention in care and adherence to ART. Therefore having adherence and retention frame work with very well defined strategies and workable interventions to be used as to be at each level of the health care system is very important to address adherence and retention gaps. (FMOH2007).In the presence of ART, improving quality of life related to health in PLHA is an urgent priority in order to active this, patients adherence to ARV combination is therapy is a

crucial components of successful treatment outcome. The rationale for selecting this problem area was due to the facts that identification of determinants factors for ARV Therapy ,adherence amongst patients receiving ARV at health facilities is so significant to prevent resistance which could occur due to non-adherence and to improve quality of life of HIV/AIDS patients.(FMOH,2007).

CHAPTER TWO.

2.1 History of ART Adherence to HIV

Literature Review

Despite the critical need for strong adherence to HIV treatment, research indicates that many patients have difficulty in realizing this goal. Several studies conducted in North America and Africa has reported the only 55% of North American patients demonstrated high level of ART adherence. The percentage of adherence for Africa patients was found to be about 77% which could be attributed to the fact that African patients have been on treatment for shorter periods of time. The proportion of adherent patients could decline over time as patients initiating therapy encounters the challenges of maintaining long term adherence. The picture for children was not so optimistic. These same study reported that only 55% to 60% of African children were adherent to ART. But 95 percent adherence on ART Drug is expected from children to get the maximum benefit of ART. Retention in care is also a crucial issue for HIV treatment program in sub-Saharan Africa is about 60% indicating that many patients are being lost and a lot of time and money is being wasted. Retaining HIV infected patients have the potential to help contain health care cost by improving HIV specific health outcomes and reducing emergency department visit and hospitalizations. In addition, retention provides the opportunity to implement health care intervention and to prompt health behavior change that may decrease transmission and improve public health by reducing the population burden of HIV. Overall as evidenced by the above national and international resources, designing strategies to attain long-term adherence among HIV infected patients and retaining them in medical care at regularly intervals has been shown to be linked to positive health outcomes. As a result it is a major priority for both program mangers and providers and public health organizations to work towards a unified approach standardize national adherence strategy.(EricS.etaL.AIDS Read 23(2):81-90,

2.1.1. Factors facilitating ART Adherence.

Clients' knowledge, understanding, belief and perception about ART.

Clients must understand their treatment regimen and the possible side effects of the ART drugs, Taking medications in the correct amount, at the correct time and in the way they are prescribed, Knowing about interactions between ARVs and other types of medication which can change the way ARVs work in the body, Eating and drinking the right things with your pills, as prescribed by the clinical team and about Avoiding unsafe sex. (FMOH, Adherence supports Guideline, 2009.

The client has to believe and perceive as ART works, improves and prolongs life if it is taken properly. It decreases the viral load and it increases the immunity of the patient and thereby it improves the quality of life. It helps the patient to live a healthy and longer life. (FMOH, Adherence supports Guideline, 2009).

In Ethiopia, cultural and religious beliefs influence adherence to care and medication very significantly. Fasting and traditional healers can have a significant effect upon adherence. But adherence is very crucial to get maximum benefit of ARV drugs, i.e.it stops viral replication and it increase body resistance and thereby it improves the quality of life of the patient. (FMOH, Adherence supports Guideline, 2009).

Involvement of client in decision making process, client readiness and commitment.

As ARV drugs are taken throughout one's life involvement of the patient in decision making process is very crucial, So that the patient has to be involved in the decision making process and he has to agree to take the drug and adhere after he understands (knows) the benefits of taking ARV drugs and benefits of adherence to HAART and he has to know as the drug is taken lifelong. (FMOH, Adherence supports Guideline.

Adherence counseling and preparedness must precede ART therapy. ART should be delayed until adherence issues have been addressed. Patient actively involved in his/her own care and become ready if the patient clearly understands ARV Therapy is, possible side effects, limitations, adherence schedule and wants treatment demonstrates, readiness, Treatment

partner/family/social support available, Psychosocial barriers to adherence have been addressed, No psychiatric illness or substance abuse that would impact adherence and no recent non-adherence to care or medication. After knowing all these things a client decision and commitment to take the Right drug at the Right time and dose throughout his life is very important for successful treatment outcome**.**(FMOH, Adherence supports Guideline, 2009).

Trustful Relationship between providers and clients.

Health care providers have to build a good working alliance and a trustful relationship between them and their patients to get optimal adherence and treatment outcome**.** A therapeutic alliance between the provider and the patient can promote optimal adherence to both HIV care and ARV regimens. Adherence can be improved. (FMOH, Adherence supports Guideline, 2009).

Available social and family support

Having treatment supporter, Ability to make taking pills as part of routine, Effective use of reminders seeing positive results, Ability to disclose HIV status to family and friends and Providers' knowledge and communication skills.. (FMOH, Adherence supports Guideline, 2009).

2.1.2. Factors Hindering ART adherence

The principal factors associated with non adherence to care treatment appear to be patients related, including, Substance and alcohol abuse, Forgetting or difficulty understanding treatment instructions, Life adjustment difficulties such family responsibility and transportation difficulties, Fear of disclosure to family members resulting lack of family support .lack of treatment compliance due to concurrent illness ,Patient uncertainty about the long term effects treatments, Long waiting periods at HIV clinic and pharmacy, Lack of food, particularly for new initiating patients, and fear of stigma and discriminations. Others factors that contribute to non-adherence are inconvenient dosing frequency, dietary restrictions and pill burden, difficult patient burden, heath care provider relationships, inconvenient service provision in the health care system.(FMOH,Adherece supporters Guideline,2009).

1.2.3 Advices and counseling services given by health professionals.

The health care providers of the ART clinic at Zewditu Memorial Hospital prepare clients to 'start' adhering to ART; they have provided clients with a large amount of information on Basic Facts on HIV and AIDS, HIV Counseling and Testing, Comprehensive HIV Care and Treatment and Adherence. In order to address the concerns of client by providing information and counseling on HIV treatment by reviewing some of the following issues: Review the information on the treatment prescribed for their client. The ART clinic staffs should encourage the client to repeat back to them which pills they will take and when they should be taken. Remind the client that ART is a lifesaving drug and that his / her life depends on taking them every day at the right time. Remind that if a drug has to be taken 2 times per day, there should be a 12 hour interval between the 2 doses. If you forget, take the dose within 4 hours. After that, wait until the next dose and no double dose.. (FMOH, Adherence supports Guideline, 2009).

1.2.4 Professional consultation to PLHA's.

The ART clinic healthcare providers give professional consultation to their patients to develop good adherence by giving firsthand basic information about the treatment, as the treatment has to be taken lifelong and by helping their patients to understand their treatment regimen and be helped to overcome any challenges to taking ARVs as they are meant to be taken. By giving an advice to develop partnership between the person taking ARVs, family and friends of PLHA and the medical system supporting that person, including Adherence supporters, and by telling as medications has to be taken in the correct amount, at the correct time and in the way they are prescribed, by helping to know about interactions between ARVs and other types of medication which can change the way ARVs work in the body, eating and drinking the right things with your pills, as prescribed by the clinical team and to avoid unsafe sex are very important to get the expected maximum treatment outcome.(FMOH, Adherence supports Guideline,2009).

1.2.5. ART Clinic of Zewditu Memorial Hospital strength and limitations?

The ART program Zewditu Memorial Hospital was started in July 2003. The hospital has been providing ART service to all patients coming from all Regions between 2003-2004. The

free ART program started in March 2005. The total number of patients ever received ART at ART clinic are 11, 214 out of theses 10,322 Adults and 892 pediatrics. Number of persons currently receiving ART are 6465 among these 6051adults and 414 pediatrics.

1.2.6. Strength of the ART Clinic

The treatment of HIV/AIDS clients with respect, and with complete consideration for human rights, ethics, privacy and confidentiality, informed consent, autonomy, and dignity. This means that they are practicing the values and principles of social work in their daily routine activities. Increasing the effectiveness of services through education of, and consultation with, professionals within the system. Through training and consultation the staffs always tries to improve the quality of service, their knowledge and skills. Because of this the ART clinic has a well trained and experienced staffs. Beside to this The ART clinic is now used as a research and training center, because it is considered as a model center. Moreover this it is the first ART clinic in Ethiopia, ART service provision was started in 2001.Increasing awareness of their clients through group and peer education. Health education is given two times per day for all clients at the waiting area by health care providers and case managers (Adherence supporters). In addition to this peer education is practiced among children's to learn from each other and share their experiences. The staffs of the ART clinic gives a standard counseling service on ART adherence and HIV counseling and testing by realizing the goal of counseling in the context of HIV care and treatment is not to solve every problem but to strengthen and improve the client's coping skills through: Helping patients cope with the emotions and challenges they face when diagnosed with HIV and thereafter. Preparing and supporting patients who want to begin or are taking ART and to motivate them to be adherent. Helping patients to avoid passing on, or getting re-infected with HIV.Helping patients make choices and decisions that will prolong their life and improve their quality of life.

Referral as a comprehensive care and support, No one person or organization can provide a client and his/her family with all the HIV care and support services they need. That is why it's important to have a strong referral system in place. The staffs of the ART clinic formally send a person and/or family members to another place in the hospital or another organization for services the person in order to get holistic care and services. Referrals between health facilities and community organizations are also important. AS need to know what resources exist in the

community and community organizations need to know what services are offered at the health facility.

Monitoring and Evaluation, the ART clinic staffs are collecting and monitoring data to ensure that services provided are consistent with the care plan. M&E also includes monitoring and evaluation of a client's adherence to treatment and care.

1.2.7. Limitation of the ART clinic.

High work overload (burden). The total number of people who came to ART clinic is 11, 214 out of theses 10,322 Adults and 892 pediatrics. Number of persons currently receiving ART are 6,465 among these 6,051adults and 414 are pediatrics.

Shortage of drugs like INH and co-trimoxazole. The ART clinic meets frequent shortage of these drugs in different times. Staffs have communicated with both Governmental and non Governmental organizations to solve the shortage but the problem is not yet solved.

Shortage of rooms: At the time of my visit to the Art clinic of Zewditu Memorial Hospital has shortage of rooms to run different activities in different rooms by ensuring confidentiality and privacy. But they have a plan to change the ART clinic when the construction of the new building is completed.

1.2.8 Strategies and priority intervention

The Strategies to improve adherence and retention of patients, and follow medication and care for chronic disease look HIV focus on the following major areas that need intervention to address the barriers related to the client, the Service provider, the heath system and related environment. Under each strategy there are major institutions which have been implemented and achieved good result in resource limited environment like Ethiopia.

1. Client empowerment: - means empowering patients with the necessary knowledge and skills and providing support that make them adhere to the following a medications schedule with agreed recommendations from a health provider. The following are workable interventions that can bring about empowerment of patients:

   Education and counseling services: - are among the most effective behavioral interventions targeting ART adherence and retention in care.

2. Client specific adherence related tools including remainder devices. Calendars, pill boxes, pill organizers, dose planners and reminder alarm devices may be giving to patient taking ART to support their adherence.
3. Psychosocial and economic empowerment: - psychological support includes spiritual advice, mental health, psychological shelter and nutrition support.

Objective of the study.

1.3 General objective

- To assess ART adherence among PLHA attending ART clinic at Zewditu Memorial Hospital.

1.4 Specific objectives.

-To describe the current adherence status of PLHA to ART.

-To describe factors contributing to ART adherence.

-To describe reasons for missing ARV drug doses.

-To describe patient relationship with the healthcare providers.

-To describe the contribution of health care system and clinical setting for ART adherence.

Research questions.

-What is the current status of ART adherence among PLHA attending ART clinic at Zewditu memorial hospital?

-What are the factors contributing to ART adherence?

-What are the major reasons for missing ARV drug doses?

-What looks like patient relationship with the health care providers?

-What is the contribution of conducive health care system and clinical setting for ART adherence?

CHAPTER- THREE.

3. Research Methods, Materials and procedures.

3.1. The study area.

This study will be conducted from November 2013 to December 2013 at ART clinic of Zewditu Memorial specialized hospitals in Addis Ababa, Ethiopia.

3.2. Study Designs.

An institutional cross-sectional study will be conducted with both quantitative & qualitative methods on PLWA at Zewditu Memorial Hospital.

3.3. Universe of the study (Population source).

All people living with HIV/AIDS who are eligible for HAART and being treated with ART at Zewditu Memorial Hospital ART clinic.

3.4. Study Population.

All people living with HIV/AIDS who are eligible for HAART and being treated with ART at Zewditu Memorial Hospital ART clinic.

3.5. Inclusion criteria

All the study population males and female who full filed the below criteria:-

6. Taking the fixed dose multiple combined ART to a single drug.
7. >18 years of age
8. Give verbal informal consent voluntarily.
9. Admitted to the study hospital for ART and of take the drug as outpatient.
10. Unable to give consent voluntarily.

3.11. Exclusion criteria.

All contacted ART clients who are unable to fulfill the ART inclusion criteria.

Sample size and Methods.

To determine the sample size for the cross-sectional survey design, it was assumed that the Precision to an acceptable approximation of the population was taken to be 95% (CI of 95%), Taking a difference of no more than 5% from the actual figures in the source population. Since

Our current adherence rate or proportions of any related concepts on adherence to HAART rate 50-75 percent is of 50% was preferred to obtain the largest possible sample size using the single Population formulae. To compute for non-response rate, 10% of the total sample size [N = 384] Was added and then the total sample size was found to be 461. The sample size was Calculated using the following formulae: -

$$N = \frac{Z(\div\frac{1}{2})^2 P(1-P)}{D^2}, \quad N = 384$$

Where, N = sample size, Z (÷½) = 1.96, which is the upper percentile of the standard normal Distribution, P= HAART adherence rate, which was assumed to be 50% and D= difference from The actual figures of source population, which will be taken to be 5%.

3.3. Sampling Procedures/Techniques.

With regards to sampling techniques, a total of 100PLWAsampling unit who are on HAART and follow up at ART unit of Zewditu Memorial Hospital will be selected for the study purpose at a time of proposal writing/planning, all other to be enrolled being eligible for ART till the study period (November-December2013) will be registered and included in the sampling frame. Finally, using the systematic random sampling system of those coming for follow up of ART every 4thART clients will be involved in the study.

Data Collection Techniques.

Every patient who comes for ART service during the data collection time will be interviewed by trained enumerators. At the same time there clinical records will be looked for further and detail information. Data collection will be done from (November-December, 2013) will be registered. Patients will be interviewed for the following variables: Socio-demography, health and illness, knowledge, attitude to the Regimen, relation with health care professionals, HIV/AIDS related disease occurrence while taking ART and opinion of the health delivery system .More over this record review will be done by selected registered Nurses and by me, as I am a health care provider I can get a chance to review medical records.

Some other methods are here mentioned below:

N) **Key informants Interviews**: Interviews will be conducted with the officials (2 ART Physicians) and 2 ART Nurses) from ZMH ART clinic who will be on provision of ART Service during the time of Data collection.

O) **Observation**: Professional ART Nurses will be observed for the ART Service delivery for the quality of service during pre and on initiation of ART counseling service.

P) **Exit Interviews**: All clients attending ART Service at ZMH during the Data collection period will be interviewed at exit points after they have got the ART Services. At the same time there clinical record was looked for. Data collation will be done from August - September, 2013. Patients were interviewed for the following variables. Socio-demography, health, illness, knowledge and attitude to the regimen, relation with health care provides professionals, HIV/AIDS related disease while taking ART and opinion delivery system. Record review also carried out, and CD4 count, lymphocyte, adverse reaction to ARV and the duration of ART was recorded from the client chart

Variables of the study.

-Measured to conduct the study.

Independent variables.

Demographic characteristics.

Age, sex, religion, Marital Status, Monthly income.

Health service, to social care, and support.

Active substance use of drugs, chat and Alcohol.

Drug side effect, feeling of depression and CD4 count.

Benefits and importance of Adherence.

Factors related to belief in efficacy of medication.

Severity of non Adherence.

Satisfaction on HAART and services.

Dependent Variable.

ART adherence among PLHA.

3.4. Data collection and Quality Management.

-Items concerning information on the questionnaire will be completed by interviewer and will be related to the respondents answer. The questionnaire will be Pre-Tested on a sample

population of 10 clients using a treatment of HAART at Zewditu Memorial Hospital in order to make all the data collectors understand each question in a similar way and collect the intended information plus to finish out questionnaire needs to be amended. Two registered Nurses who are working at ART unit will be trained for Three days before they engage to any activities. The interview will be conducted in a place where the interviewee feels free and alone with the respondants.The resonant right not to participate in the study will be respected for those who are found to refuse. In the same manner one supervisor will be selected (ART Clinician) and give a highlight/train about the study to ensure the completeness and quality of information during data collection. There will be a spot checking of the data collectors to give timely correction at mark. The filled questionnaire will be reviewed by the supervisor and the principal investigator at daily base after through checkups to manage problem encountered. With regard to in-depth interview Ten study subjects with homogenous background will be considered and the study subject will be limited during data analysis process by checking for redundant information and saturation of ideas produced from the interviews. At the time of data processing data will be entered to the computer and 10 percent of the data entered will be cross checked for consistency.

The quality of data will be assured by:

Using standard ARTA Ver. 0001, Version 20/01/2011.

Measurement/Tools.

3.4. Questionnaire Design.

The questionnaire format was taken from the study was done at Addis Ababa university School of public health and some additional questions will be added from other studies and other sources downloaded from internet. The purpose of making this is to use standard questionnaire to ensure validity of the study. Some of the questionnaires and checklists were adapted from the ART Adherence Version 0001, Version 20/01/2011(ARTA Ver. 0001, Version 20/01/2011) for evaluating ART adherence.

3.5. Data Collectors.

Two Registered Nurses who are working at ART unit will be selected and trained for Three days before they engage to any activity. Beside to this they will be participated in the pre- Test process.

3.7. Ethical consideration.

The proposal will be evaluated by IGNOU Research Department for the Topic and Methodology relevance. Ethical clearance will be obtained from IGNOU and Addis Ababa Regional Health Bureau. Information will be gathered on informed consent/voluntary bases after obtaining permission from each respondent and the respondent is autonomous to answer the entire question, to jump or interrupt in the middle and the right not to answer is also respected. The name of the respondent will not be recorded; the collected data will not be used for other information and purpose of the study will be explained, confidentiality requiring their personal feeling will be kept. The findings of the study will be disseminated to the relevant body.

Abbreviations and Acronyms

3.13. **Adherence**

The ability to comply with medication prescribed and dispensed.

ART adherence:-

The ability to comply with ART medication prescribed and dispensed in the clinic for 95% of time or more.

Assessment

The process of verifying and documenting how the ART medications dispensed from the clinic or the previous visit were consumed.

Healthcare providers

People who offer services to sick people in a health facility.

Prophylaxis

The treatment which is given to patients in order to prevent disease from occurrence or reoccurrence.

Linkage to care: - Refer to the period starting with HIV diagnosis and ending with initial enrolment in HIV care and treatment

Adherence to treatment: - Refers to the ability of the patient to develop and follow a plan of behavioral and attitudinal change that ultimately serves to empower him/her to improve health and self manage a given illness.

Personal operation definition.

The ability to comply with ART medication prescribed and dispensed in the clinic for 90 % of time or more.

CHAPTER FOUR.

4.1. Plan of data analysis

The raw data will be scrutinized and coded and then data analysis can be done, using statistical methods.

The findings (results) of the study will be presented and discussed very well.

4.2 Discussions

-Based on the finding deep discussion will be done by seeing the results from different perspectives.

CHAPTER FIVE

5. Conclusions and Recommendations

5.1 Conclusion

- Best conclusion and summarization will be done based on the result of the study and discussion points.

5.2 Recommendations

-Possible suggestion will be given just to improve the quality and uptake of the ART services.

Reference

1. MOH, Disease prevention and control department, AIDS in Ethiopia, 5th Edition, and Addis Ababa, MOH, 2004

2. The Federal Democratic Republic of Ethiopia. Policy on anti-retroviral drugs, supply and Use. Addis Ababa, Ethiopia, July 2002.

3. Antiretroviral therapy program for HIV- infected patients in Ethiopia. Protocol prepared by Ethiopian Health and Nutrition research institute, Black Lion Hospital, Police Hospital, and Armed Force General Hospital, 2002.

4. The Federal Democratic Republic of Ethiopia. MOH press release on anti-retroviral drugs, Supply and use. Addis Ababa, Ethiopia, September 2006

5. Eric S. et al. Improving Adherence to Antiretroviral Therapy. Cliggott Publishing, Division. AIDS Read 13(2):81-90, 2003.

6. Monforte A.A., Testa L., Adorni F., et al. Clinical outcome and predictive factors of failure of highly active antiretroviral therapy in antiretroviral-experienced patients in advanced Stages of HIV-1 infection.AIDS 1998; 12:1631-7.

7. Paterson D.L., Swindells S., Mohr J., et al. Adherence to protease inhibitor therapy and Outcomes in patients with HIV infection. Ann Intern Med 2000; 133:21-30.

8. Gifford AL, Bormann JB, Shively MJ, Wright BC, Richman DD &Bozzette SA (2000). Predictors of self-reported adherence and plasma HIV concentrations in patients on Multidrug antiretroviral regimens.*Journal of Acquired Immune Deficiency Syndromes*, 23: 386-395.

9. Zolopa AR, Shafer RW, Warford A, Montoya JG, Hsu P, Katzenstein D, Merigan TC & Efron B (1999). HIV-1 genotypic resistance patterns predict response to saquinavir-ritonavir Therapy in patients in whom previous protease inhibitor therapy had failed.*Annals of Internal Medicine,* 131:813-821.

10. Wainberg MA &Friedland G (1998). Public health implications of antiretroviral therapy And HIV drug resistance. *Journal of the American Medical Association,* 279: 1977-1983.

11. Morse EV, Simon PM, Coburn M, Hyslop N, Greenspan D &Balson PM (1991). Determinants of subject compliance within an experimental anti-HIV drug protocol. *Social Science and Medicine,* 32: 1161-1167.

12. Eldred LJ, Wu AW, Chaisson RE & Moore RD (1998). Adherence to antiretroviral and

Pneumocystis prophylaxis in HIV disease.*Journal of Acquired Immune Deficiency Syndrome*, 18: 117-125.

13. Mothashari F, Riley E, Selwyn PA &Altice F (1998). Acceptance and adherence with Antiretroviral therapy among HIV-infected women in correctional facility.*Journal of Acquired Immune Deficiency Syndromes and Human Retro virology*, 18: 341-348.

Akalu, M. ,Haltbak, J. , &Blytad, A. (2005). Barriers to antiretroviral treatment adherence for Patient living with HIV infection and AIDS in Arbaminch Hospital, Southern Ethiopia. http://www.blsmeetings.net/implementhiv2006/Posters2.cfm

AIDS Bulletin (2004). Promoting ARV adherence, 13 (3)

Amico, K. R. , Fisher, W. A. , Cornman, D. H. , Shuper, P. A. , Redding, C. G. , Konkle Parker, et al. (2006). Visual Analog scale of ART adherence: Association with 3-day self- report and adherence barriers. *Journal of Acquired Immunodeficiency Syndrome, 42 (4):* 455- 459.

Andrews L. &Friedland (2000).*General Infectious Disease Clinical, 14*, 901

AyalewMengesha (2005). Assessment of adherence to antiretroviral therapy among HIV infected persons in the Ministry of National Defense Force Hospitals, Addis Ababa and Ababa University, School of Graduate Studies

14. Haubrich RH, Little SJ, Currier JS, Forthal DN, Kemper CA, Beall GN, Johnson D, Dube MP, Hwang JY &McCutchan JA (1999). The value of patient-reported adherence to Antiretroviral therapy in predicting virologic and immunologic response.*AIDS*, 13: 1099-1107.

15. Chesney MA, Ickovics JR, Chambers DB, Gifford AL, Neidig J, Zwickl B & Wu AW (2000). Self-reported adherence to antiretroviral medication among participants in HIV Clinical trials; the AACTG Adherence Instruments.*AIDS Care*, 12: 255-266.

16. Kastrissios H, Suarez JR, Katzenstein D, Girard P, Sheiner LB &Blaschke TF (1998). Characterizing patterns of drug-taking behavior with a multiple drug regimen in an AIDS Clinical trial.*AIDS*, 12: 2295-2303.

17. Gordillo V, Del Amo J, Soriano V & Gonzalez-Lahoz J (1999). Sociodemographic and Psychological variables influencing adherence to ART.*AIDS*, 13: 1763-1769.

18. Singh N, Squier C, Sivek C, Wagener M, Nguyen MH & Yu VL (1996). Determinants of Compliance with antiretroviral therapy in patients with HIV, prospective assessment with Implications for enhancing compliance.*AIDS Care*, 8: 261-269

Work Plan.

S/N	Research Activities.	Time Required.
1.	Review of Related Literature.	2 Weeks.
2.	Selection of Sample	1 Week
3.	Adoption of tool for data collection.	1 Week
4.	Pre testing of tools for data collection.	1 Week
5.	Collection of Relevant data.	3 Weeks.
6.	Editing of data.	3 Weeks.
7.	Arranging, classifying &organizing data.	5 Weeks.
8.	Processing and Statistical Analysis of data.	3 Weeks.
9.	Writing the Research report.	4 Weeks.
10.	Presentation of the report.(typing and binding).	1 Week.
	Total Time required.	24 Weeks (6 Months).

Budget Plan.

S.no	Research Activity Description	No of pages.	Total cost in Eth.Birr.	Remarks.
1.	Writing &printing of data gathering tools.		350	
2.	Orientation and familiarization of for data collectors.	15	1500	100/individual
3.	Transport cost for the Researcher	1	1500	
4.	Transport cost for data collector	15	3000	400 Birr/day for 5days.
5.	DSA for data collectors	15	7500	100 Birr/ day for 5days.
6.	Payment for data editor's transcribers.	2	4000	2000/person.
7.	Typing &binding cost.		1500	
8.	Other stationary cost		1500	
9.	Overhead expensive		2000	
10.	Total cost		22,850	

Questionnaire ID No. ----------

Indra Gandhi National Open University, Social Work Department

This Questionnaire is prepared to ask patients enrolled to ART care on ART adherence at Zewditu Memorial Hospital.

My Name is _____working as a data collector for Ato Melaku Kebede for the purpose of partial fulfillment of master degree in social work. He is conducting a study on ART adherence at Zewditu Memorial hospital. The information you give will contribute to measures that are taken on ART adherence. If you agree to be involved in this study, I would like to ask some questions and this will take about 30-45 minutes. The information you give will be kept confidential. If there is any problem you can stop at any time.

Do you agree to participate in this study?

1.Yes (Continue to ask the question) 2. No. (Stop to ask the questions)

Interviewer Name: _____ Supervisor Name: _____

Signature_____ Signature _____

Date_____

Date_____

SECTION 1.SOCIO DEMOGRAPHIC CHARCTERSTICS			
No.	**Questions**	**Coding categories**	**Code**
101	Sex	3- Male 4- Female	
102	Age		
103	Ethnic groups	2- Amhara 2- Oromo 3-Tigraie 5. Garage 5. other specify_____	
104	Marital status	6- Unmarried	

		7- Married 8- Divorced 9- Separated 10- widowed	
105	Religion	2- orthodox 2- catholic 3-protestant 4- Muslim 5-other ----------	
106	Educational status	2- Illiterate 2- read and write 3-Elementary 4-High School 5- Above high School	
107	Occupational status	8- Government employee 9- Housewife 10- Farmer 11- Unemployed 12- Daily labor 13- Student 14- Other specify ----------	
108	Monthly income(In Birr)	8- No income 9- 200-250 10- 251-500 11- 501-999 12- 1000-2000 13- 2000-3000 14- >3000	

Section 2. Social assessment			
No	**Questions**	**Coding Categories**	**Code**
201.	With whom do you live?	6. Live alone 7. My family 8. My relatives 9. Unstable 10. Other specify_____	
202	Do you have any emotional and practical support?	1.yes 2.No	
203.	If yes to question 202. What support you have?	4. Marital and finance 5. Information/advice 6. Other specify_____	
204.	Have you ever abuse substance?	1.yes 2.No	
205.	If yes to question 204, which substance do you use?	6. Chat 7. Cigarette 8. Alcohol 9. Illicit drugs 10. Others specify_____	
206.	Are you currently use/abuse drug	2. Yes 2. No	
207.	If yes to question 206, which substance do you use?	6. Chat 7. Cigarette 8. Alcohol 9. Illicit drugs 10. Others specify_____	

Section 3: Knowledge about ART and adherence			
Knowledge about ART			
No	Questions	Coding Categories	Code
301.	When did you hear about ARV?	4. Before my illness 5. After my illness 6. During my illness	
302.	From where did you get the information about ARV?	4. H/care professionals 5. Mass media 6. Others specify_____	
303.	Do you think ART benefits you?	2. Yes 2. No	
304.	Are you committed /convinced to start ART?	2. Yes 2. No	
305	After you had stared ART, What benefit did you get?	7. Improved quality of life 8. Weight gain 9. Reduced fever 10. Reduction of hospitalization 11. Reduce frequency of diahorrea 12. No benefit at all.	
Knowledge about adherence			
306.	Do you know the importance of adherence before you start ART?	2. Yes 2. No	
307.	How long have you been on ART?	_____(in months)	

308.	Have you disclosed your HIV status to any one?	1. Yes 2. No	
309.	If yes to the above question, to whom?	1. Wife 2. Family and relatives 3. Friends 4. Others specify_____	
310.	When taking ART, AIDS will be delayed?	1. Yes 2. No	
311.	When taking ART, an HIV infected person will be cured from AIDS?	1. Yes 2. No	
312.	When taking ART, it can happen that one may get sick from the Rx itself?	1. Yes 2. No	
313.	When taking ART, Do you think the person will live long?	1. Yes 2. No	
314.	When one takes ART, it has to be taken at specific time?	1. Yes 2. No	
315.	When one takes ART the daily dose should be respected not be skipped?	1. Yes 2. No	
316.	You should take pills for the rest your life to delay the development of AIDS?	1. Yes 2. No	
317.	Are you taking a fixed dose combined or single drugs?	1. Yes 2. No	
318.	What do you suggest about a fixed dose combined or single drugs?	1. Reduce pill burden 2. Easy to remember 3. Easy to take 4. I do not know	
319.	Do you feel comfortable when taking ART in front of others than before?	1. Yes 2. No 3. Not sure	
320.	Does the Rx schedule fit the daily routine than the previous?	1. Yes 2. No 3. Not sure	
321	What types of schedules do you use to remember to take your medication?	1. Pill box 2. Written reminders 3. Watch bell 4. cellphone reminder 5. Don't have	

Section 4. Patient/Adherence Supporter/providers relationship			
No	**Questions**	**Coding categories**	**Code**
401	Are you satisfied with the clinical Service?	2. Yes 2. No 3. Not sure	
402	Do you have open communication with health care providers treating you?	2. Yes 2. No	
403	Do you obtain education or assistance when you need help during your visit?	4. Every month 5. Every 2 months 6. Every 3 months	
404	Do you know the Adherence Supporters?	2. Yes 2. No	
405	Have you got adequate adherence counseling service from adherence supporters?	2. Yes 2. No	
406	Are you satisfied by the improvement you obtain for your treatment?	2. Yes 2. No 3. Not sure	
407	Are you satisfied in the confidentiality of the treatment unit?	2. Yes 2. No 3. Not sure	

Section 5. Health Care system and clinical setting			
No	**Questions**	**Coding categories**	**Code**
501	How far is your residence from the ART unit you are attending?	_____(in Km)	
502	What means of transportation do you use to visit ART Clinic	2. On foot 2. Public transport 3. Own vehicle 4. Taxi 5. Others specify _____	

503	Are you satisfied in the scheduling appointment of the treatment unit?	4. Yes 5. No 6. Not Sure	

Section 6: Adherence assessment			
No	**Questions**	**Coding categories**	**Code**
601	Have you ever missed your ART drugs	4. Yes 5. No 6. I don't know	If No leave the below Qs
602	If yes to 601 How frequent?	4. 1-2 doses per month 5. 3-5 doses per month 6. 6 or more doses per month	
603	How many doses have you missed in the last 7 days	4. One dose only 5. Two doses only 6. 3 or more than 3 doses	

Section 7: reason for skipping the doses			
No	**Questions**	**Tick all possible reasons**	
701.	Being away from Home		
702.	Were too busy		
703.	Simply forget		
704.	Too many pills to take		
705.	Wanted to avoid side effects		
706.	Did not want others to notice me taking the medication		
707	Had a change in daily routine		
708	Felt like the drug was harmful		
709	Felt a sleep		
710	Felt sick		
711	Felt depressed over whelmed		
712	Had problem of taking meal at specified time (meals. Empty stomached……)		
713	Felt good		
714	Run out of pills		
715	Taking medication reminded my HIV		
716	Confused about the dosage		
717	I thought the medication had no value		
718	People told me the medication is not good		