



**ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH**

**PREVALENCE AND ASSOCIATED FACTORS OF DEPRESSION AMONG
PATIENTS TAKING ANTI-RETRO VIRAL DRUGS IN ADAMA HOSPITAL
MEDICAL COLLEGE, EAST OROMIA, ETHIOPIA**

BY: - TESSEMA GEBRU DAMENA (BSC)

**DECEMBER 2021
ADDIS ABABA, ETHIOPIA**

LETTER FOR DECLARATION

By signing below, I proclaim that this research is my Original work, it was not done by others and claimed by an others work in any institution or person .this research had used materials that are accredited.

Name of principal Investigator:- Tessema Gebru

Signature _____

Date :-_____

Place :- Addis Ababa University College of health Science School of public health .

This thesis has been submitted for approval to:

Advisor Dr:- . Negussie Deyassa (PhD)

Signature :_____

Date :_____

Addis Ababa University
College of health Science
School of public health

Prevalence of Depression and Associated Factors among Patients Taking Anti-Retroviral Drugs in Adama Hospital Medical College, Oromia, Ethiopia.

By: Tessema Gebru

School of public health, College of health Science, Addis Ababa University Approved by
Examiner board

Name	Date	Signature
_____	_____	_____
Chairman School of Graduate Committee		
_____	_____	_____
Advisor (Primary)		
_____	_____	_____
Advisor (Secondary)		
_____	_____	_____
Examiner		
_____	_____	_____
Examiner		
_____	_____	_____

ADDIS ABABA UNIVERSITY SCHOOL OF PUBLIC HEALTH COLLEGE HEALTH
SCIENCE

NAME OF INVESTIGATOR	TESSEMA GEBRU DAMENA
NAME OF ADVISOR	DR. NEGUSSIE DEYASSA
FULL TITLE OF THE RESEARCH PROJECT	PREVALENCE OF DEPRESSION AND ASSOCIATED FACTORS AMONG PATIENTS TAKING ANTI-RETROVIRAL DRUGS IN ADAMA HOSPITAL MEDICAL COLLEGE, OROMIA, ETHIOPIA.
SUBMITTED TO	SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE DEGREE OF MASTERS IN PUBLIC HEALTH
DURATION OF THE PROJECT	APRIL _ SEPTEMBER 2021
STUDAY AREA	ADAMA HOSPITAL MEDICAL COLLEGE
TOTAL COST OF THE PROJECT	31,910:00 ETB
ADDRESSE OF INVESTIGATOR	TEL;+251-911379520 EMAIL; tessemagebru@gmail.com

Acknowledgment

First of all, I would like to express my sincere thanks for the Almighty God for making me healthy and helping me to accomplish this task.

My special gratitude goes to my advisor Dr. Negussie Deyassa for his unreserved encouragement and provision of constructive comments and guidance from the beginning of my topic selection up to this thesis development.

I am very grateful to Addis Ababa University College of Health Science, School of Public Health for providing me this golden opportunity. I am highly indebted to my friends and facilitators especially Mr. Negash Sime, Dr. Assefa Seme, Dr.Solomon Emyu, Dr.Mulugeta Tamire and Mr. Daba Ejara for their incessant moral and technical support throughout my stay in graduate study.

Acronyms and abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral Therapy
ARV	Anti Retro Viral
ASM	Appointment Spacing Model
BPR	Business Process Re-engineering
BSC	Bachelor of Science
BSC	Balanced Score Card
CD4	Cluster of Differentiation
CI	Confidence Interval
EHRIG	Ethiopian Hospitals Reform Implementation Guideline
GDP	Growth domestic Product
HAART	Highly Active Anti Retro Viral Therapy
HCF	Health Care Financing
HIV	Human Immune Virus
HMIS	Health Management Information System
HRQL	Health-Related Quality of Life
KPI	Key Performance Indicators
MDD	Major Depressive Disorder
MPH	Masters of Public Health
NCI	Neuron-Cognitive Impairment
OR	Odds ratio
PHQ	Patient Health Questionnaire
PLHA	People Living with HIV AIDS
PS	Purposive Sampling
RNA	Rebio Nucleic Acid
SPSS	Statistical package of Social Science
UNAIDS	United Nation HIV/AIDS
WHO	World Health Organization

Table of content

Acknowledgment	i
Acronyms and abbreviations	ii
Table of content.....	iii
List of Tables.....	v
List of Figures	vi
ABSTRACT	vii
1. Introduction	1
1.1. Background.....	1
1.2 . Statement of the Problem.....	2
1.3. Significance of the study	4
2. Literature review	5
2.1. Magnitude of the problem.....	5
2.2. Associated Factors.....	5
2.3. Conceptual framework.....	8
3. Objective	12
3.1. General objective.....	12
3.2. Specific objectives.....	12
4. Methods and Materials	13
4.1. Study Area and Period.....	13
4.2. Study design	13
4.3. Source Population	13
4.4. Study Population	13
4.5. Operational definition	14
4.6. Sample size determination.....	14
4.7. Sampling technique.....	14
4.8. Study Variables.....	15
4.9. Data collection tool	15
4.10. Data collection procedure	16
4.11. Data quality assurance	16
4.12. Data analyses	16
4.13. Ethical Consideration	17
4.14. Dissemination of the Research Finding.....	17

5. Result.....	18
5.1. Socio-demographic and economic characteristics of HIV positive patients	18
5.2. Psychological and social characteristics of HIV positive patients	20
5.3. Chronic Non-communicable diseases among PLHA	21
5.4. HIV/AIDS and Nutrition related conditions of HIV positive patients	22
5.5. Depression among HIV Positive patients.....	23
5.6. Factors associated with depression among HIV positive patients.....	25
6. Discussion	27
7. Conclusion and Recommendation.....	29
8. Reference.....	30
9. Annex I: Participant information sheet and consent form (English Version)	35
10. Annex II: Information sheet and consent (Afan Oromo Version).....	38
11. Annex III: Information sheet and consent (Amharic Version).....	41

List of Tables

Table 1 : Socio-demographic and economic characteristics of patients taking ART in Adama hospital medical college from April to May, 2020.	19
Table 2 : Psychological and social characteristics of patients taking ART in Adama hospital medical college from April to May, 2020.	20
Table 3 : Presence of chronic Non-communicable diseases among patients taking ART in Adama hospital medical college from April to September , 2021.	21
Table 4 : HIV/AIDS and Nutrition related conditions of patients taking ART in Adama hospital medical college from April 01 to September 30 2021.	22
Table 5 : Results in multivariable logistic regression showing determinants of depression among HIV positive patients taking ART in Adama Hospital Medical college, Oromia region, April to May, 2020.	26

List of Figures

Figure 1 :- Conceptual frame work of Prevalence of Depression and association factors among HIV patients Taking antiretroviral drugs at Adama Hospital Medical College. Adama, Ethiopia (Adopted from Mental health of Muslim Nursing Students in Thailand 2012)	8
Figure 2 : severity of depression as assessed by PHQ-9 among HIV positive patients Taking ART at Adama Hospital Medical College, April 01 to September, 2021.	24
Figure 3 : Prevalence of depression among HIV positive patients Taking ART at Adama Hospital Medical College, April01 to September, 2021.	24

ABSTRACT

Background: Depression is the most common preventable mental illness among people living with human immunodeficiency virus (PLHA) with the rates of two to four times higher than those found in general populations. Nowadays depression is estimated to affect 350 million people in the world. This study aims to assess the magnitude and predictors of depression among PLHA in eastern part of Oromia regional state, Ethiopia.

Objective: To assess the prevalence and associated factors of depression among PLHA taking Antiretroviral drug at Adama Hospital Medical College.

Methods: We employed an institutional based cross-sectional study from April 01 to September 30, 2021 in Adama Hospital Medical College, Oromia regional state, Ethiopia. A total of 420 PLHA aged 18 years and above were recruited using a systematic random sampling technique. We collected the data through a face-to-face interview, observation and document review. We entered the data into EPI-info Version 7 and analyzed using SPSS version 21. Binary logistic regression analysis was conducted to determine the association between explanatory variables on the outcome variable. Factors with a p-value of less than 0.25 in the bivariable analysis were further entered into the multivariable analysis to control for potential confounders. Adjusted Odds Ratio (AOR) with 95% CI was used as a measure of association and p-value less than 0.05 was taken as statistically significant.

Results: A total of 420 PLHA taking ART were participated in this study. The prevalence of depressive symptoms as assessed by PHQ-9 was 52.4% (95% CI= 47.6-57.1). Multivariable binary logistic regression analysis revealed that employment status [AOR=0.22(95% CI= 0.13-0.36)], patients most recent CD4 count [AOR=6.99 (95% CI=2.81-17.38)], months on ART [AOR=5.05 (95% CI =2.38-10.74)] and chronic non-communicable diseases [AOR=7.90 (95% CI = 4.21-14.85)] were significantly associated with depression among HIV positive patients.

Conclusion: Significant proportion of HIV positive patients taking ART drug had depressive symptoms. Employment was found to be preventive while low CD4 count, starting ART therapy recently, and presence of chronic non-communicable diseases (CNCDS) were found with increased odds of depression among HIV positive patients taking ART.

Key words: Depression, ART, Adama, Ethiopia

1. Introduction

1.1. Background

Nowadays depression is estimated to affect 350 million people in the world and major depressive disorder (MDD) is the most common prevalent neuropsychiatric symptom in Human Immuno deficiency Virus (HIV) type one patients (1). According to the World Health Organization, Human Immuno Virus/Acquired immuno deficiency syndrome(HIV/AIDS) and depression are among the 10 leading causes of the disease burden in the developing world and Low- and middle-income countries(2). People suffering from depression may be more likely to participate in risky sexual behavior, and they are therefore at greater risk of contracting HIV (3–5).

Depression is manifested through loss of interest, depressed mood, change in sleep, change in appetite and poor psycho motor activity. In addition, difficulty to make decision, uncomfortable or immoral feeling, and easily getting fatigue and repeated feelings of death or suicide are also the manifestation of depression (6). Depression is the most frequently observed psychiatric disorder among PLHA. Its specific prevalence is difficult to identify as a result of the wide variations across the globe, ranging from 20 to above 70% (7).

Depression and depressive symptoms are key for casters for poor adherence to ARV drugs and followed by poor clinical outcomes. Therefore it is important to measure the degree of depression and depressive symptoms among HIV-infected patients using the 9-item Patient Health Questionnaire (the 9-PHQ) and data from HIV infected patients in routine clinical care(8). Depression is not only causing distressing and impairing condition, but also affects negatively different of self-care behaviors needed for comprehensive management of HIV disease. (3,9).

Problems with mental health related to HIV infection are quite frequent due to stressful events such as the emotional impact of diagnosis; possible family rejection in professional and social life; stigmatization and discrimination are still accompanying with the disease and clinical features, chronic course of the disease and side-effects of certain antiretroviral medications such as Zidovudine and others (10, 11).The magnitude of depression in PLHA taking ART was found to be high and was positively associated with urban dwellers, with lower socioeconomic class, unemployed, and government employees. Hence, depression among PLHA taking ART is still under-diagnosed and under treated; there is a need to incorporate mental health service as an integral component of HIV care (7).

1.2. Statement of the Problem

According to the World Federation of Mental Health report of 2012, depression interferes with the daily life of people and causes pain for both patients and those who care about them. Similar report indicated that depression was the third leading cause of burden of diseases worldwide, representing 4.3% of the total disability adjusted life years (12). Depression is the most frequently observed psychiatric disorder among PLHA. Its specific prevalence is difficult to identify as a result of the wide variations across the globe, ranging from 20 to above 70% (7).

The integration of mental health care with HIV/AIDS services is a World Health Organization (WHO) global priority. HIV and major depressive disorder are frequently co-morbid and are both highly prevalent in sub-Saharan Africa. However, research on mental health is scarce in sub-Saharan Africa where HIV infection levels are highest. Depression prevalence is increased in HIV/AIDS in high-income countries and is associated with reduced treatment adherence and increased disease progression and mortality in high income as well as low and middle-income countries (13). It can be effectively treated in both high and low-income countries. Although two-thirds of the world's HIV-positive population live in sub-Saharan Africa few studies have assessed their burden of depression, and such research has been recently assessed as a priority for action by the WHO Secretariat(14).

Like other chronic patients, HIV/AIDS infected individuals face like long-term discomfort, physical deterioration, physical and economic dependence and eventual death(15). Risks for depression among HIV/AIDS patients increase when recent affective losses occur (death or rejection of all sorts), an accelerated evolution of opportunistic infections, increasing rate of hospitalizations; its duration as well as physical deterioration. Furthermore, in patients with HIV disease, severity of depression correlates with rapidity of decline in CD4 count, suggesting that failure to treat depression may accelerate HIV disease progression and impact on survival. In addition, depressed HIV patients treated with antidepressants are more likely to adhere to anti-retroviral treatment than those not(7).

While treatment scale-up has led to dramatic gains in life expectancy. The public health significance of identifying and adequately treating depressive disorders among persons with HIV is further magnified by their important adverse HIV-related impacts, including delays in treatment initiation, poor adherence and disease progression (16).

In Ethiopia, the prevalence of depression among PLHA ranges from 11.7% in Debre Markos to 73.3% in Fitcha zonal hospital (17,18). Different studies conducted in different parts of the country showed that mental disorders associated with HIV/AIDS can result from the psychological impact of having a

fatal disease, or stem from the effects of psycho social stressors associated with the illness like stigma and discrimination. Most PLHA psychiatric patients actually suffer from multiple disorders, such as long-term discomfort, physical deterioration, physical and financial dependence and eventual death. In Ethiopia, depression contributes to about 6.5% of the burden of diseases. This is the highest share of burden compared to other forms of mental disorders(19). However, the magnitude of depression and associated factors among PLHA was not adequately addressed in Eastern part of Oromia, Ethiopia.

1.3. Significance of the study

Information on prevalence of depression and associated factors in PLHA taking ART is not well studied in Eastern part of Oromia regional state and particularly in Adama hospital Medical College where over 7,000 patients were taking ART. This indicates that there is a need to have information about depression to assess its prevalence and associated factors among PLHA taking ART in the study area. Therefore, this cross-sectional study was conducted among PLHA taking ART. Understanding the magnitude of depression will contribute to the careful design of initiatives that are targeted to address this group of population in promoting effective education on ARV drug adherence. The findings of this study might be useful in designing health education programs that are targeted at depression considering the risk of HIV/AIDS. The finding of this study will also help ministry of health, policy makers, Adama hospital medical college and other partners to have updated information on magnitude of depression among PLHA and develop appropriate screening and intervention mechanism. Additionally, it will also help as source of information for researchers who are interested in studying depression among PLHA.

2. Literature review

2.1. Magnitude of the problem

Depression is the most frequently observed psychiatric disorder among PLHA. Its specific prevalence is difficult to identify as a result of the wide variations across the globe, ranging from 20 to above 70% (7). This is a three-fold greater prevalence of major depression in the general population. According to the WHO 2015 report, 350 million people were affected by depression worldwide. Findings from different studies show that 121 million people living with HIV/AIDS are affected by depression globally (1). Studies conducted in different countries on prevalence of depression among HIV patients showed 58.75% in Delhi (20), 29.5% in Italy (21), 13.2% in United States (22), 44% in South Africa (23), and 46% in Uganda (24). In low- and middle-income countries, about 76% and 85% of people with severe mental disorders do not get treatment for their mental health problem.(8).

Studies conducted in different part of Ethiopia showed the prevalence of depression among HIV, 43.9% in Mekele (7), Ethiopia, 45.8% in Harari (11), Ethiopia and 38.94% in Debrebirehan (25) and Fitcha town (73.3%) (18).

2.2. Associated Factors

2.2.1. Socio-demographic Characteristics

A study conducted in South Africa found that widowed study participants experienced fewer symptoms of depression than those who were single (OR = 0.30, CI 0.13-0.69) (26). A survey done in Harar town of Ethiopia showed that marital status of the respondents was an important factor associated with depressive morbidity. Widowed PLWHA were more likely to have depression than patients who are single. (11).

Across sectional study done in Cameroon indicated that age >40, unemployment and CD4 count \leq 200 cells/l were found to be independently associated with depressive symptoms. PLHA whose age is less or equals 40 were 2 times more likely to have depression than their counter parts. PLHA who were unemployed were 2 times more likely to have depression than employed patients (27). A study conducted in Debre Markos, Ethiopia also found that those patients who had experience of quitting work were also more depressive (AOR= 2.73, 95% C.I: 1.778, 6.329) (17)

2.2.2. HIV/AIDS and other NCDs related Variables

The rising of non-communicable diseases (NCDs) in SSA, combined with high levels of chronic infectious diseases such as HIV is resulting in a different pattern of multi morbidity. Low-income groups in South Africa (SA) have seen a dramatic increase in prevalence of NCDs and have the highest burden of HIV, a chronic infectious disease resulting in concurrent epidemics. However, little is known about the impact of co morbid chronic diseases on long-term HIV management and this research will help increase knowledge of people who want to know the association between NCD comorbidity and HIV control(28).

A study conducted in Cameroon found that HIV positive patients with $CD4 \leq 200$ cells/mm³ were 4 times more likely to have depression than patients with $CD4 > 200$ cells/mm³ (27). Another study conducted in a tertiary hospital in South Western Nigeria which revealed that current low CD4 count is a risk factor for depression among HIV positive patients (29). A study conducted in Ayder hospital, Tigray region of Ethiopia indicated that Late clinical stage of the illness (AOR= 4.2 (95% CI; 1.19, 14.44)) and impairment in the activity of daily living were significantly associated with neurocognitive deficit (AOR= 7.19 (95% CI; 1.73, 21.83)). (30).

Similarly a study conducted in Debrebrhan hospital, Ethiopia found that patients with HIV/AIDS Stage III were 2 times more likely (AOR=2.317(1.108, 4.848)) to have depression as compared to stage I patients. This study also indicated that patients with HIV/AIDS Stage IV were 8 times more likely (AOR=8.769(1.928, 39.872)) to have depression as compared to stage I patients. (25) .

A survey done in rural Uganda showed that there were an improvement in depressive symptoms over long follow up period after ART initiation (31). A study conducted by F Gutiérrez et al. found that longer exposure to ART was associated with a decreased incidence rate ratio (IRR) of depression in unadjusted and adjusted analyses (32).

2.2.3. Psychological and Social Factors

A study conducted in South Africa found that stigma was positively correlated with symptoms of depression (OR = 1.13, CI 1.06-1.20). Similar study found that respondents who participated in a

support group were less likely to have been depressed than those who had not belonged to a support group (OR = 0.21, CI 0.05-0.99). (26.). This finding was also supported by a study done in Debre Markos, Ethiopia which also found that those who face stigma and discrimination from the community were 3 times more likely to have depression than their counter parts (AOR= 3.42, 95% C.I: 1.628, 7.188). (17.)

A study done in Hawassa, Ethiopia found that clients who had poor social support were 2.5 times more likely to have depressive symptom when compared to clients who had strong social support (AOR=2.53, 95% CI 1.70, 9.13). (5.) A study conducted in Debre Markos, Ethiopia also found that those patients who had poor social support were more likely to have depression than those who have good and fair social support in their locality (AOR= 10.1, 95% C.I: 1.91 33.16) (17)

Similarity, a study done in Debrebrhan found that Perceived stigmatized (AOR=3.597(1.861, 6.954)) was associated with depression. Clients with perceived stigmatized were 3.597times likely to develop depression than their referent (25.) .A study conducted in Debre Markos, Ethiopia also found that those who live alone were 2.5 times more likely to have depression compared to those who live with their family (AOR= 2.465 (95% C.I: 1.196, 5.078) (17)

The study found that patients were over two times more likely to adhere if they had greater levels of social support; social support also had a greater effect on adherence for patients that took more than one medication (33).

2.3. Conceptual framework

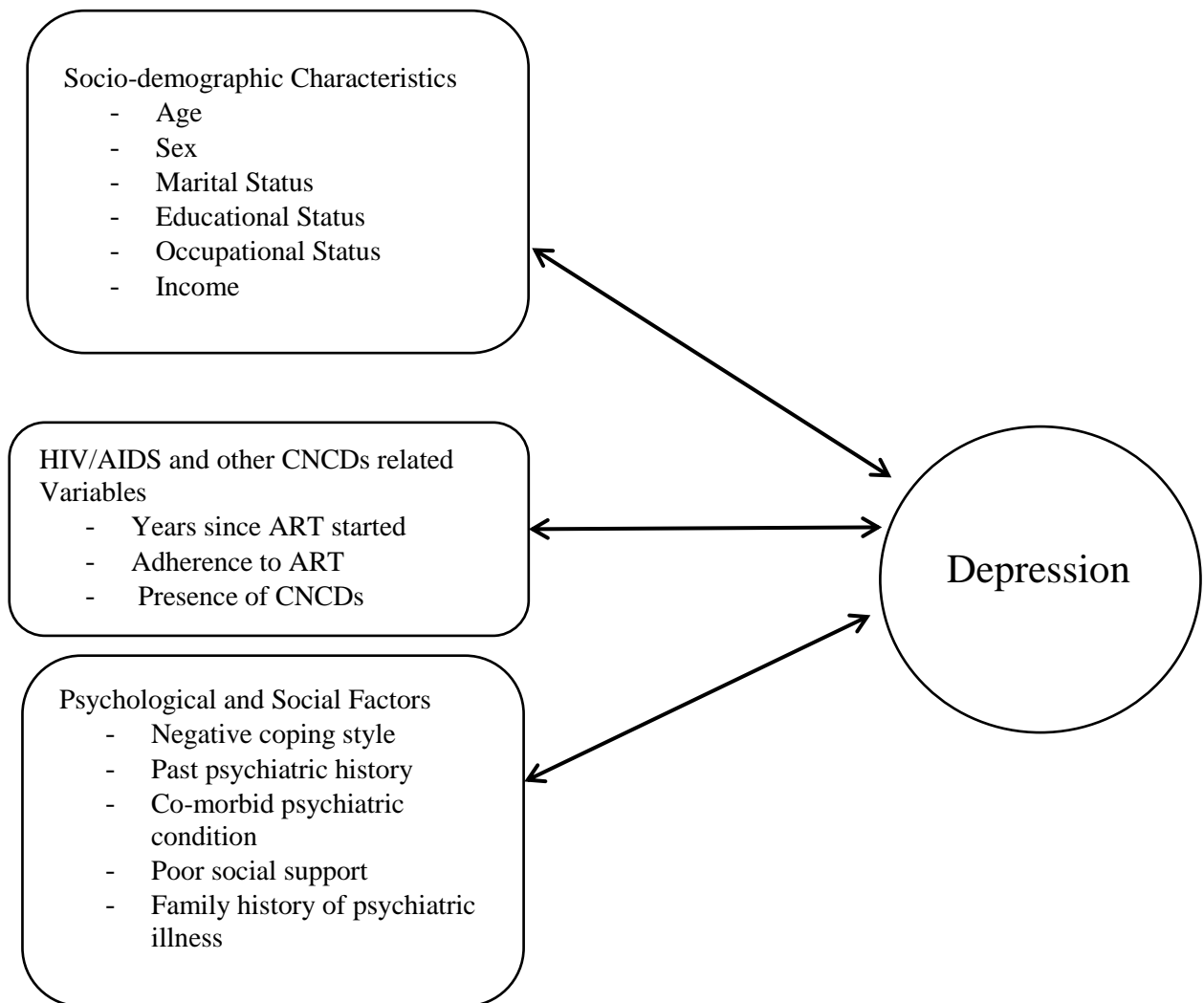


Figure 1:- Conceptual frame work of factors associated with depression among HIV patients taking antiretroviral drugs (Adapted from Mental health of Muslim Nursing Students in Thailand 2012)

3. Objective

3.1. General objective

- To assess the prevalence and associated factors of depression among HIV positive patients taking ART in Adama Hospital Medical College from April 01 to September 30, 2021

3.2. Specific objectives

- To assess the prevalence of depression among HIV positive patients taking ART in Adama Hospital and Medical College
- To identify factors associated with depression among HIV positive patients taking ART in Adama Hospital Medical College

4. Methods and Materials

4.1. Study Area and Period

The study was conducted at Adama Hospital Medical College (AHMC) located at Adama town, Eastern of Oromia Region. Adama is located 100 Kms away from Addis Ababa in the East direction. Adama Hospital Medical College was previously known by the names of Haile Mariam Mamo Memorial Hospital and Adama Referral Public Hospital at different times. It is the only public Medical Hospital situated at Adama town.

The Hospital was established in 1938 E.C by missionaries from abroad, and it was among the first non-governmental Hospitals in the country. It was hand overed by government during the Dergue regime, in 1974. The Hospital was upgraded to a Medical College in 2011G.C, and started to play academic and research role in addition to its normal medical service, and development and administrative activities. This hospital and college is currently serving a catchment population of more than six million people from five regions (Oromia, Amhara, Afar, Somali, and Dire-Dawa).Regarding the HIV/AIDS services, there are different professional categories assigned like General Practitioners, Heath officers, Nurses, Case managers, Mother support groups, Pharmacy technologist and Others those who took training on this specific program. There are more than 7000 patients currently taking ART drugs in this hospital and are served usually by follow up on Appointment Spacing model,3 multi month dispensary and monthly basis. The study was conducted from April 01 to September 2021

4.2. Study design

We employed Institutional based cross-sectional study design

4.3. Source Population

The source population was all adult HIV positive people visiting the Adama Hospital Medical College during the study period.

4.4. Study Population

The study population was adult HIV positive people on ART and who are selected by systematic sampling from Adama Hospital Medical College

Inclusion criteria

ART users with an age greater than or equal to 18 years, and those who attend the ART clinic was included in the study.

Exclusion criteria

Critically ill ART users and those who cannot respond properly to the questionnaire was excluded from the study.

4.5. Operational definition

Depression: - a person who score in the PHQ-9 greater or equals the cutoff point of 4 and has a common mental illness that negatively affects how he or she feels, the way he/ she thinks and how he/ she acts.

Good adhered to ART drugs: - patients who take $\geq 95\%$ of the prescribed dose was considered as adherent to medication as stated in Ethiopian consolidated ART guideline.

4.6. Sample size determination

The sample size is computed using Epi Info 7 stat calc. using a population survey formula by proportion for a single population, with an assumption of a level of confidence at 95% and margin of error at 5 %, and based on study done at Harari town revealed that a prevalence of 45.8% of depression (7) to obtain a maximum sample size.

$$n = \left(\frac{Z_{\alpha/2}}{d} \right)^2 P(1 - P)$$

n = Sample size

P= assumption of the proportion of depression among ART Users (45.8%)

Z α /2= the standard score (critical value) corresponding to 95% confidence level = 1.96

d= the proportion of sampling error between the sample and the population = 5% (0.05)

10% non-response rate was added and the final sample size was 420 people living with HIV/AIDS and visiting the ART clinic.

4.7. Sampling technique

Study participants was selected using a systematic random sampling technique. Using sequence of visiting ART clinic by study subjects as a sampling frame, we selected study participants by systematic sampling. Based on the ART registration book, Adama Hospital Medical College, has about 7000 people age of 18

years and above are on ART visiting on average within 2 months. Out of these, 420 eligible study participants were selected using systematic random sampling (SRS) technique. Every 16th (7000/420) clients was interviewed and the first client within first day of survey was selected by lottery method, and further selection was made based on the sampling interval.

4.8. Study Variables

4.8.1. Dependent variable.

Depression status

4.8.2. Independent Variables

- Socio-demographic variables, including age, sex, ethnic group, income, educational status, employment status, marital status, and religion will be used.
- Conditions related to their HIV status including like involvement in PLHA association, duration of ART utilization, Adherence to ART, Presence of CNCD, negative coping style, past psychiatric health problem history, poor social support, and family history of psychiatric history will also be included.

4.9. Data collection tool

Data were collected using an interviewer-administered questionnaire. A format that contains study variables of interest was prepared based on the Patient Health Questionnaire, (9 PHQ) and contents of depression of HIV patients taking ART. Depression was assessed using PHQ-9 quick depression assessment which ranges from 0 to 27. The severity of depression was characterized as minimal (0–4), mild (5–9), moderate (10–14), moderately severe (15-19) and severe depression (≥ 20). The interviewer administered questionnaire has socio-demographic and economic conditions; the questionnaire was also adapted from reviewing different kinds of literature and considering the local situation of the study subjects.

4.10. Data collection procedure

The principal investigator gave training for data collectors and supervisors for one day on data collection methods, how to take informed consent, how to approach participants, ethical procedure and general information on the depression status of HIV patients taking ART and the objective of the study. Face to face interview, observation and document review was done to collect the data. Document review was used to fill some of the information like CD4 count, Viral load and WHO clinical staging.

Four BSc nurses who were working in the same hospital and 1 MPH was assigned as data collectors and supervisors respectively to check for the daily activity, consistency and completeness of the questionnaire and to give appropriate support during the data collection process. The principal investigators monitored the overall activities every other day. Incomplete and not clearly filled questionnaires was rejected.

4.11. Data quality assurance

The English version questionnaire was translated in to local language, Amharic and Afan Oromo and back translated in to English by translators who are blind to the original questionnaire and fluent in three languages. The questionnaire was pre-tested on 5% of the study population in the non-selected hospital /Bishoftu Hospital/ to ensure clarity, wordings, logical sequence and skip patterns of the questions. Appropriate modifications were made after discussing with the supervisors and data collectors before starting the actual data collection process. Every day the filled questionnaires was checked before a respondent go from the setting by data collectors and supervisors.

4.12. Data analyses

After data collection, questionnaire was checked for missed data and errors and then data entered into Epi-info version 7 and analyzed using the statistical package for social science (SPSS) version 21. The data were edited and cleaned before analysis. Descriptive statistics such as frequency, mean, standard deviation, median, minimum and maximum of the study variables was used to describe variables of the study. Binary Logistic Regression was used to identify factors associated with depression and anxiety range among HIV patients taking ART. Assumptions for logistic regression was considered and model fitness was tested by Hosmer and Lemeshow goodness-of-fit test statistic and was taken at greater than 0.05. Before inclusion of predictors, multicollinearity was checked using the cutoff point variance inflation factor (VIF) <10. Odds ratio was used to look for strength and direction of an association for selected variables. Factors with a p-

value less than 0.25 in the bivariable analysis was further entered into the multivariable analysis to control for potential confounders. Adjusted Odds Ratio (AOR) with 95% CI was used as a measure of association and p-values less than 0.05 was taken as statistically significant. Finally, the results of the findings were presented using text, graphs and tables.

4.13. Ethical Consideration

The study was approved by Addis Ababa university institutional review board and formal letter of permission was obtained from Addis Ababa University, school of public health and Oromia Regional Health Bureau. Official letter of cooperation from the above organization was written to respective health facilities (Adama Hospital Medical collage). There is no potential risk that may cause any harm to respondents. All the necessary precaution for COVID 19 prevention was kept during data collection. The importance of the study was explained to the participation of the study and informed written consent was requested from the subjects included in the study immediately before the data collection and they have full right to refuse the interview at any time if they did not want to proceed. The respondents were informed that they will not lose anything (do not affect their treatment regimen) for not participating in the study

4.14. Dissemination of the Research Finding

The result of the study will be presented to Addis Ababa University School of public health. The final report will be communicated with different stakeholders including the regional health bureau and health facilities. Moreover, efforts will be made to publish the findings of the study and disseminated through journal and scientific publication.

5. Result

5.1. Socio-demographic and economic characteristics of HIV positive patients

A total of 420 HIV positive patients were participated in the study and the response rate was 100%. The mean (SD) age of the patients were (10.7%) (n=42.8) years. More than half, 64.0% (n=269) of the patients were females. Majority, (88.1%) (n=370) were urban residents. Nearly one third, 36.4% (n=153) of the study participants attended primary school. Nearly half, 48.1% (n=202) of the participants were married. The majority of the ethnic groups were Amhara and Oromo with 47.4 % (n=199) and 37.9% (n=159) respectively. Among the study subjects 71.2% (n=299) were Orthodox followed by Protestants 15.2 % (n=64) and Muslims 13.3% (n=56). 46.9% (n=197) of PLHA were unemployed. Nearly half of the participants, 51.9% (n=218) had an average monthly income of 1001-5000 Ethiopian Birr (Table 1).

Table 1: Socio-demographic and economic characteristics of patients taking ART in Adama hospital medical college from April to May, 2020.

Variables (n=420)	Frequency	Percent
Age of the patients (Years)		
18-24	25	6.0
25-34	49	11.7
35-44	162	38.6
≥45	184	43.8
Sex of the patients		
Male	151	36.0
Female	269	64.0
Residence		
Urban	370	88.1
Rural	50	11.9
Educational status of the patients		
No formal education	88	21.0
Primary education	153	36.4
Secondary education	123	29.3
Tertiary education	56	13.3
Marital status		
Married	202	48.1
Divorce/Separated	77	18.3
Single	47	11.2
Widowed	87	20.7
Separate	7	1.7
Ethnic group		
Amhara	199	47.4
Oromo	159	37.9
Tigray	16	3.8
Gurage	34	8.1
Others	12	2.9
Religion		
Orthodox	299	71.2
Protestant	64	15.2
Muslim	56	13.3
Others	1	0.2
Work status		
Employed	223	53.1
Unemployed	197	46.9
Income (ETB)		
<1000	183	43.6
1001-5000	218	51.9
≥5001	19	4.5

5.2. Psychological and social characteristics of HIV positive patients

(10%) (n=42) of the study participants consume alcohol while only 2.9 % (n=9) chew chat. Almost all, 99.5 % (n=418) patients were non-smokers. 6.0% (n=25) of the study participants had past psychiatric history. Nearly one fifth, (19%) (n=90) of HIV positive patients' have co-morbid psychiatric condition while 2.9 % (n=12) are taking antidepressants. 6.0% (n=25) of the patients had family history of psychiatric illness. Among the study participants, 7.6% (n=32) replied that they had poor social support. Majority, 86.4 % (n=363) had no impairments in activities of daily living. (Table 2)

Table 2: Psychological and social characteristics of patients taking ART in Adama hospital medical college from April to May, 2020.

Variables (n=420)	Frequency	Percent
Alcohol consumption		
Yes	42	10.0
No	378	90.0
Chewing Chat		
Yes	12	2.9
No	408	97.1
Smoking Cigarettes		
Yes	2	0.5
No	418	99.5
Past psychiatric history		
Yes	25	6.0
No	395	94.0
Co-morbid psychiatric condition		
Yes	80	19.0
No	340	81.0
Taking antidepressants		
Yes	12	2.9
No	408	97.1
Family history of psychiatric illness		
Yes	25	6.0
No	395	94.0
Poor social support		
Yes	32	7.6
No	388	92.4
Living companion		
Yes	357	85.0
No	63	15.0

Sources of financial support		
Self	307	73.1
Other sources	113	26.9
Impairment in activities of daily living		
Yes	57	13.6
No	363	86.4

5.3. Chronic Non-communicable diseases among PLHA

Among HIV positive patients, 8.6% (n=36) had diabetes mellitus. (7.9%) (n=33) participants had hypertension and 2.6% (n=11) had cardiac problem. One in ten, 10.5% (n=44) of the study participants had history of Asthma attack. Overall, 27.9% (n=117) of the survey participants had at least one chronic non-communicable diseases. (Table 3)

Table 3: Presence of chronic Non-communicable diseases among patients taking ART in Adama hospital medical college from April to September, 2021.

Variables (n=420)	Frequency	Percent
Diabetes		
Yes	36	8.6
No	384	91.4
Hypertension		
Yes	33	7.9
No	387	92.1
Cardiac diseases		
Yes	11	2.6
No	409	97.4
Asthma		
Yes	44	10.5
No	376	89.5
Chronic non-communicable diseases		
Yes	117	27.9
No	303	72.1

5.4. HIV/AIDS and Nutrition related conditions of HIV positive patients

Nearly half, 51.7% (n= 217) of the study participants were concordant positive while 15% (n= 63) were discordant. One third, 33.3% (n=140) of the HIV positive patients don't know their partners HIV status. Regarding viral suppression, 95.5% (n=401) of the participants had viral load of <1000 copies/mm³. Nearly two third, 63.8 % (n=268) of the patients presented with CD4 <200 cells/mm³ at the time of diagnosis. Regarding most recent CD4, 37.9% (n= 159) of the study participants had ≥500 cells/mm³. Majority, 79.5% (n=334) of the HIV positive patients were in stage 1 WHO clinical stage. Nearly one third, 36.9% (n=155) of HIV positive patients had ever developed opportunistic infection. Majority, 91.7% (n=385) of the participants were on first line treatment. (Table 4)

Table 4: HIV/AIDS and Nutrition related conditions of patients taking ART in Adama hospital medical college from April 01 to September 30 2021.

Variables (n=420)	Frequency	Percent
Partner HIV status		
Positive	217	51.7
Negative	63	15.0
Unknown	140	33.3
Viral load		
≥1000 copies/mm ³	19	4.5
<1000 copies/mm ³	401	95.5
CD4 at diagnosis		
<200 cells/mm ³	268	63.8
200-499 cells/mm ³	126	30.0
≥500 cells/mm ³	26	6.2
Most recent CD4 count		
<200 cells/mm ³	67	16.0
200-499 cells/mm ³	194	46.1
≥500 cells/mm ³	159	37.9
WHO clinical stage		
Stage 1	334	79.5
Stage 2	41	9.8
Stage 3	33	7.9
Stage 4	12	2.9
Ever developed opportunistic infection		
Yes	155	36.9
No	265	63.1
Treatment level		

First line	385	91.7
Second line	35	8.3
ART dose given per day		
Once daily	371	88.3
Twice daily	48	10.2
Three times daily	6	1.4
Months on ART		
≤24 months	76	18.1
>24 months	344	81.9
Any side effect of ART medication		
Yes	44	10.5
No	376	89.5
Currently taking any treatment other than ART		
Yes	41	9.8
No	379	90.2
Adherence to ART medication		
Adhered	400	95.2
Not adhered	20	4.8
HIV disclosure status		
Disclosed	310	73.8
Not disclosed	110	26.2
Felt stigmatization		
Yes	132	31.4
No	228	68.6
Daily eating pattern		
Three meals or more	368	87.6
Two meals or less	52	12.4
BMI		
Under weight	45	10.7
Normal	304	72.4
Over weight	71	16.9

5.5. Depression among HIV Positive patients

Based on the PHQ9 depression severity assessment scale, 33.3% (n=140) of the study participants have minimal depression while 9 (2.1%) have severe depression.

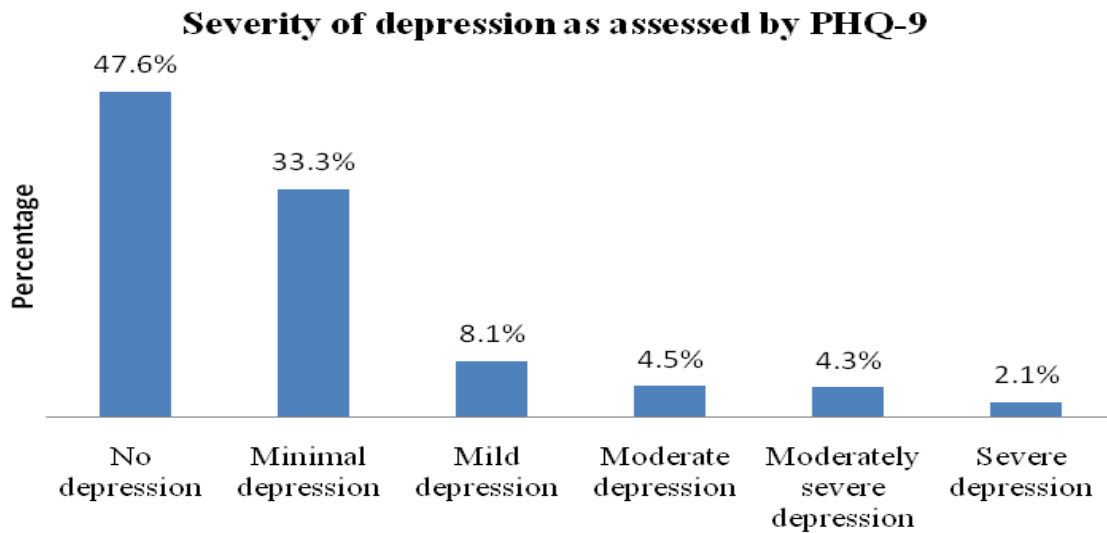


Figure 2: severity of depression as assessed by PHQ-9 among HIV positive patients taking ART at Adama Hospital Medical College, May to April, 2020.

The prevalence of depression among patients taking ART in Adama Hospital Medical College was 52.4% (95% CI= 47.6-57.1).

Prevalence of depression among HIV positive patients

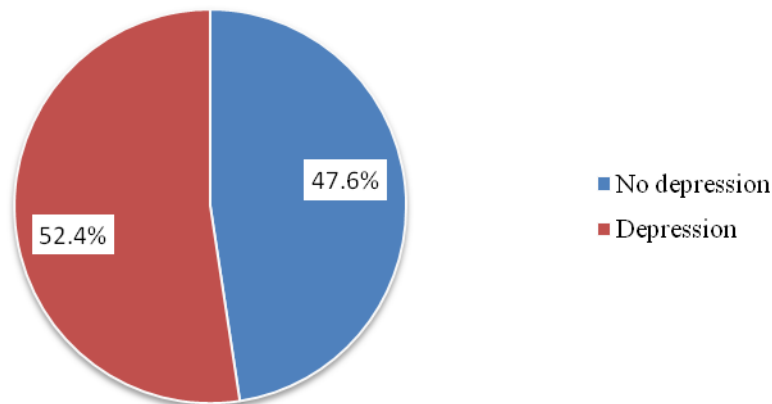


Figure 3: Prevalence of depression among HIV positive patients taking ART at Adama Hospital Medical College, April 01 to September 30, 2021.

5.6. Factors associated with depression among HIV positive patients

The bivariable logistic regression analysis revealed that depression among HIV positive patients had association with educational level of the patients, work status, chewing chat, family history of psychiatric illness, patients most recent CD4 count, months on ART and chronic non-communicable diseases.

Multivariable binary logistic regression analysis was carried out in order to identify the independent determinant of depression among HIV positive patients receiving ART. Those variables which had p value of less than 0.25 in bivariate analysis were entered in multivariable analysis. Step wise back ward logistic regression method was employed. In multivariable analysis work status, patients most recent CD4 count, months on ART and chronic non-communicable diseases were significantly associated with depressive symptoms among HIV positive patients.

The odds of employed patients to have depressive symptoms were 78% [AOR=0.22(95% CI= 0.13-0.36)] less likely compared to unemployed patients. HIV positive patients who had most recent CD4 count <200 cells/mm³ were 7 times [AOR=6.99 (95%CI=2.81-17.38)] more likely to have depression than patients with CD4 count ≥500 cells/mm³. Patients who received ART for ≤24 months were 5 times [AOR=5.05 (2.38-10.74)] more likely to have depression than their counterparts. HIV positive patients with co-morbid chronic non-communicable disease were 8 times [AOR=7.90 (4.21-14.85)] more likely to have depression than their counterparts (Table 5).

Table 5: Results in multivariable logistic regression showing determinants of depression among HIV positive patients taking ART in Adama Hospital Medical college, Oromia region, April to May, 2020.

Variables (n=420)	Depression		COR (95% CI)	AOR (95% CI)
	Yes n= 220 (%)	No n= 200 (%)		
Level of education				
No formal education	50	38	2.19(1.10-4.35)	1.45(0.59-3.54)
Primary education	84	69	2.02(1.08-3.80)	1.83(0.81-4.14)
Secondary education	65	58	1.87(0.98-3.56)	1.46(0.63-3.36)
Tertiary education	21	35	1	1
Work status				
Employed	84	139	0.27(0.18-0.41)	0.22(0.13-0.36)**
Unemployed	136	61	1	1
Chat chewing				
Yes	11	1	10.47(1.34-81.87)	6.82(0.69-67.23)
No	209	199	1	1
Family history of psychiatric illness				
Yes	20	5	3.90(1.43-10.59)	3.04(0.92-10.06)
No	200	195	1	1
Most recent CD4 count				
<200 cells/mm ³	59	8	9.14(4.09-20.38)	6.99(2.81-17.38)*
200-499 cells/mm ³	90	104	1.10(0.70-1.63)	1.03(0.62-1.71)
≥500 cells/mm ³	71	88	1	1
Months on ART				
≤24 months	64	12	6.43(3.35-12.34)	5.05(2.38-10.74)**
>24 months	156	188	1	1
Chronic Non-communicable diseases				
Yes	99	18	8.27(4.76-14.37)	7.90(4.21-14.85)**
No	121	182	1	1

NB: 1- Reference group, *= P<0.05, **= P<0.0

6. Discussion

This study revealed that 52.4% of HIV positive patients taking ART had depression. This finding is comparable with a study conducted in some parts of Ethiopia like Tigray (43.9%), Harar town (45.8%), central zone of Tigray (57.9%), Southwest Ethiopia (55.8%), Gonder (60%) and (7, 11, 34-36). This finding is lower than a study reported from Fitcha zonal hospital (73.3%) and W. M. Bezabhe et al., Ethiopia (73.0%) (18,37). This finding is higher than a study done in Debrebrihan referral hospital (38.9%), Debreworkos town (11.7%), Alert hospital (41.2%), H. Alemu et al, Ethiopia (13.1%) and Addis Ababa (15.0%) (9, 17,38-40). This might be due to differences in socio-economic status, study period, sample size, population being studied and data collection tools.

Results of the multivariable binary logistic regression in this study showed that employment status, patients most CD4 count, months on ART and chronic non-communicable diseases were significantly associated with depression among HIV positive patients taking ART in Adama hospital medical college.

We found that employed patients were 78% less likely to have depression than unemployed patients. This finding was supported by a study conducted in Nigeria, that revealed unemployment and low income was associated with depression among people living with HIV (PLHIV) (29). A study in Southwest Regional Hospitals of Cameroon also indicated that unemployment was found to be associated with depression among HIV positive patients than employed patients (27). This might be due to the fact that being employed will reduce the socio-economic burden that might impose additional stress on HIV positive patients. In addition to diagnosis of HIV, unemployment might put the patient in stress and worries. This double burden of stress might lead the patients to depressive disorder.

HIV positive patients who had most recent CD4 count ≤ 200 cells/mm³ were 7 times more likely to have depression than patients with CD4 count ≥ 500 cells/mm³. This finding was consistent with a study conducted in a tertiary hospital in South Western Nigeria which found that current low CD4 count is a risk

factor for depression among HIV positive patients (29). A study conducted by centers for AIDS research social and behavioral science research network also indicated that patients with low CD4 cell counts and higher HIV-1 RNA level had depression when compared to their counterparts (41). A prospective clinical trial analyse on the factors associated with changes in depressive symptomatology indicated that increase in CD4 was independently associated with improvement in major depressive disorder among HIV positive patients (34). Consistent with this finding a study in Southwest Regional Hospitals of Cameroon indicated patients with CD4 count ≤ 200 cells/mm³ were 4 times at increased risk of developing depression (27). This might be due to the fact that low CD4 count might be associated with opportunistic infection which further bring additional worries, stress and physical disabilities.

Patients who are taking ART for ≤ 24 months were 5 times more likely to have depression than their counterparts. A study conducted in rural Uganda showed that there were an improvement in depressive symptoms over long follow up period after ART initiation (31). A study conducted by F Gutiérrez et al. found that longer exposure to ART was associated with a decreased incidence rate ratio (IRR) of depression in unadjusted and adjusted analyses (32). This might be attributed to ongoing counseling and support the patients might receive about HIV diagnosis and treatment which in turn might reduce mental stress and anxiety leading to depressive symptoms.

HIV positive patients with at least one co-morbid chronic non-communicable diseases (diabetes, hypertension, cardiac diseases and asthma) were 8 times more likely to have depression than their counterparts. This finding was supported by a study conducted by Watkins CC and Treisman GJ which found neuropsychiatric symptoms, including depression, cognitive impairment, and substance abuse are common among HIV infected patients with chronic co-morbid conditions (42). This might be due to the fact that co-morbid chronic non-communicable diseases will add great pressure to the already existing challenge in the fight against HIV.

7. Conclusion and Recommendation

Significant proportion, 52.4% of HIV positive patients taking ART had depressive symptoms. Our research demonstrated the major predictors of depression among HIV positive patients taking ART. Patients employment status, most recent CD4 count, months on ART, and the presence of chronic non-communicable diseases were predictors of depression among HIV positive patients. Employed patients were less likely to have depression. However, patients with most CD4 count less than 200 cells/mm³, those patients who taking ART for ≤ 24 months and having chronic non-communicable diseases were at increased risk of developing depression.

Minster of health and partners working on HIV need to strengthen mental health screening and treat depression and anxiety among PLHA with due attention on unemployed patients, low CD4 count, patients newly initiated on ART and with co-morbid chronic non-communicable patients. Further research on risk factors of depression and anxiety should be conducted to strengthen and broaden the current findings.

8. Reference

1. World Health Organization. http://www.who.int/mental_health/management/schizophrenia/en.
2. World Health organization. HIV/AIDS fact sheet World Health organization.
3. UNAIDS, Fact Sheet. "Global Statistics." (2021).
4. Amare T, Getinet W, Shumet S, Asrat B. Prevalence and Associated Factors of Depression among PLHIV in Ethiopia: Systematic Review and Meta-Analysis, 2017. *AIDS Res Treat.* 2018;2018:1
5. Duko B, Geja E, Zewude M, Mekonen S. Prevalence and associated factors of depression among patients with HIV/AIDS in Hawassa, Ethiopia, cross-sectional study. *Ann Gen Psychiatry.* 2018 Dec;17(1):45.
6. Tegegne MT, Mossie TB, Awoke AA, Assaye AM, Gebrie BT, Eshetu DA. Depression and anxiety disorder among epileptic people at Amanuel Specialized Mental Hospital, Addis Ababa, Ethiopia. *BMC Psychiatry.* 2015 Dec;15(1):210.
7. H. Berhe and A. Bayray, "Prevalence of depression and associated factors among people living with HIV/AIDS in Tigray, north ethiopia: a cross sectional hospital based study," *International Journal of Pharmaceutical Sciences and Research*, vol. 4, no. 2, p. 765, 2013.
8. Crane PK, Gibbons LE, Willig JH, Mugavero MJ, Lawrence ST, Schumacher JE, et al. Measuring depression levels in HIV-infected patients as part of routine clinical care using the nine-item Patient Health Questionnaire (PHQ-9). *AIDS Care.* 2010 Jul;22(7):874–85.
9. D. Asmare Eshetu and S. Meseret, "Prevalence of Depression and Associated Factors among HIV/AIDS Patients Attending ART Clinic at Debrebirhan Referral Hospital, North Showa, Amhara Region, Ethiopia," *Journal of Clinical Psychiatry*, vol. 1, no. 1, 2015.
10. Briongos-Figuero LS, Bachiller-Luque P, Palacios-Martin T, De Luis-Roman D, Eiros-Bouza JM. Depression and health related quality of life among HIV-infected people. *Eur Rev Med Pharmacol Sci.* 2011 Aug 1;15(8):855-62.
11. Mohammed M, Mengistie B, Dessie Y, Godana W. Prevalence of depression and associated factors among HIV patients seeking treatments in ART clinics at Harar Town, Eastern Ethiopia. *J AIDS Clin Res.* 2015;6(474):2.

12. World Federation for Mental Health. Depression: a global crises book. 2012. p. 6.https://www.who.int/mental_health/management/depression/wfmh_paper_depression_wmhd_2012
13. Too EK, Abubakar A, Nasambu C, Koot HM, Cuijpers P, Newton CR, Nyongesa MK. Prevalence and factors associated with common mental disorders in young people living with HIV in sub-Saharan Africa: a systematic review. *Journal of the International AIDS Society*. 2021 Jun;24:e25705.
14. Marwick KFM, Kaaya SF. Prevalence of depression and anxiety disorders in HIV-positive outpatients in rural Tanzania. *AIDS Care*. 2010 Apr;22(4):415–9.
15. Wondatir BC, Abdelmenan S. Prevalence and associated factors of depression among hiv positive clients at Yekatit 12 hospital medical college, Addis Ababa, Ethiopia. 2018;7.
16. Tsai AC. Reliability and Validity of Depression Assessment Among Persons With HIV in Sub-Saharan Africa: Systematic Review and Meta-analysis. *JAIDS J Acquir Immune Defic Syndr*. 2014 Aug;66(5):503–11.
17. G. Dejenun and S. Zewdu, “Prevalence and Associated Factors of Depression among HIV Infected Patients in Debre Markos Town Northwest Ethiopia,” *International Journal of Emergency Mental Health and Human Resilience*, vol. 17, no. 1522-4821, pp. 714–716, 2015.
18. B. Tolasa, D. B. Demissie, T. Tesfaye, and T. Belachew, *Food Insecurity and Associated Factors among People Living with HIV Attending ART Clinic in Fitcha Zonal Hospital*, Ethiopia, 2016.
19. Bitew T. Prevalence and Risk Factors of Depression in Ethiopia: A Review. *Ethiop J Health Sci*. 2014 Apr 14;24(2):161.
20. Bhatia MS, Munjal S. Prevalence of depression in people living with HIV/AIDS undergoing ART and factors associated with it. *Journal of clinical and diagnostic research: JCDR*. 2014 Oct;8(10):WC01.
21. Bert F, Lo Moro G, Corradi A, Acampora A, Agodi A, Brunelli L, Chironna M, Cocchio S, Cofini V, D’Errico MM, Marzuillo C. Prevalence of depressive symptoms among Italian medical students: The multicentre cross-sectional “PRIMES” study. *Plos one*. 2020 Apr 17;15(4):e0231845.
22. Do AN, Rosenberg ES, Sullivan PS, Beer L, Strine TW, Schulden JD, Fagan JL, Freedman MS, Skarbinski J. Excess burden of depression among HIV-infected persons receiving medical care in the

United States: data from the medical monitoring project and the behavioral risk factor surveillance system. *PloS one*. 2014 Mar 24;9(3):e92842.

23. Zimasa DY, Teke A, Abaver DT. Prevalence of Depression among HIV Positive Adults on Anti-Retroviral Therapy in OR Tambo, Eastern Cape, South Africa: A cross-sectional descriptive study.
24. Kemigisha E, Zanoni B, Bruce K, Menjivar R, Kadengye D, Atwine D, Rukundo GZ. Prevalence of depressive symptoms and associated factors among adolescents living with HIV/AIDS in South Western Uganda. *AIDS care*. 2019 Jan 8.
25. Eshetu DA, Meseret S, Kebede MA, Techane GN, Gizachew KD, Tegegne MT. Prevalence of depression and associated factors among HIV/AIDS Patients attending ART Clinic at Debrebirhan referral hospital, North Showa, Amhara Region, Ethiopia. *Clin Psychiatry*. 2015;1(1):1-7.
26. Pappin M, Wouters E, Booyesen FL. Anxiety and depression amongst patients enrolled in a public sector antiretroviral treatment programme in South Africa: a cross-sectional study. *BMC public health*. 2012 Dec;12(1):1-9
27. Ngum PA, Fon PN, Ngu RC, Verla VS, Luma HN. Depression among HIV/AIDS patients on highly active antiretroviral therapy in the southwest regional hospitals of Cameroon: a cross-sectional study. *Neurology and therapy*. 2017 Jun;6(1):103-14.
28. George S, McGrath N, Oni T. The association between a detectable HIV viral load and non-communicable diseases comorbidity in HIV positive adults on antiretroviral therapy in Western Cape, South Africa. *BMC Infect Dis*. 2019 Dec;19(1):348.
29. Adeoti AO, Dada MU, Fadare JO (2018) Prevalence of Depression and Anxiety Disorders in People Living with HIV/AIDS in a Tertiary Hospital in South Western Nigeria. *Med Rep Case Stud* 3: 150. doi:10.4172/2572-5130.1000150
30. Belete T, Medfu G, Yemiyamrew E. Prevalence of HIV associated neurocognitive deficit among HIV positive people in Ethiopia: a cross sectional study at Ayder Referral Hospital. *Ethiopian journal of health sciences*. 2017 Feb 6;27(1):67-76.

31. Chan, B.T., Weiser, S.D., Boum, Y. *et al.* Declining Prevalence of Probable Depression Among Patients Presenting for Antiretroviral Therapy in Rural Uganda: The Role of Early Treatment Initiation. *AIDS Behav* **19**, 19–26 (2015). <https://doi.org/10.1007/s10461-014-0785>
32. Gutierrez, F., et al. "Risk of clinically significant depression in HIV-infected patients: effect of antiretroviral drugs." *HIV medicine* 15.4 (2014): 213-223.
33. Khamarko K, Myers JJ. The Influence of Social Support on the Lives of HIV-Infected Individuals in Low- and Middle-Income Countries. 2013;40.
34. N. B. Weldehaweria, E. H. Abreha, M. G. Weldu, and K. H. Misgina, "Psychosocial correlates of nutritional status among people living with HIV on antiretroviral therapy: A matched case control study in Central zone of Tigray, Northern Ethiopia," *PLoS ONE*, vol. 12, no. 3, Article ID e0174082, 2017.
35. M. Endeshaw, J. Walson, S. Rawlins et al., "Stigma in Ethiopia: Association with depressive symptoms in people with HIV," *AIDS Care Psychological and Socio-medical Aspects of AIDS/ HIV*, vol. 26, no. 8, pp. 935–939, 2014.
36. Addis B, Wolde M, Minyihun A, Aschalew AY. Prevalence of depression and associated factors among patients with epilepsy at the University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia, 2019. *PloS one*. 2021 Oct 25;16(10):e0257942.
37. W. M. Bezabhe, L. Chalmers, L. R. Bereznicki, P. Gee, and G. M. Peterson, "Antiretroviral adherence and treatment outcomes among adult Ethiopian patients," *AIDS Care Psychological and Socio-medical Aspects of AIDS/HIV*, vol. 28, no. 8, pp. 1018–1022, 2016.
38. G. Tesfaw, G. Ayano, T. Awoke et al., "Prevalence and correlates of depression and anxiety among patients with HIV on-follow up at Alert Hospital, Addis Ababa, Ethiopia," *BMC Psychiatry*, vol. 16, no. 1, article no. 368, 2016.
39. H. Alemu, D. Haile Mariam, A. Tsui, S. Ahmed, and A. Shewamare, "Effect of depressive symptoms and social support on weight and CD4 count increase at HIV clinic in Ethiopia," *AIDS Care Psychological and Socio-medical Aspects of AIDS/HIV*, vol. 24, no. 7, pp. 866–876, 2012.

40. L. A. Mekuria, M. A. G. Sprangers, J. M. Prins, A. W. Yalew, and P. T. Nieuwkerk, “Health-related quality of life of HIV-infected adults receiving combination antiretroviral therapy in Addis Ababa,” *AIDS Care Psychological and Socio-medical Aspects of AIDS/HIV*, vol. 27, no. 8, pp. 934–945, 2015.
41. Simoni JM, Safren SA, Manhart LE, et al. Challenges in addressing depression in HIV research: assessment, cultural context, and methods. *AIDS Behav.* 2011;15(2):376-388. doi:10.1007/s10461-010-9836-3
42. Watkins CC, Treisman GJ. Neuropsychiatric complications of aging with HIV. *J Neurovirol.* 2012;18(4):277-290. doi:10.1007/s13365-012-0108-z

9. Annex I: Participant information sheet and consent form (English Version)

ADDIS ABAB UNIVERSITY SCHOOL OF PUBLIC HEALTH

Prevalence of depression and associated factors among patients taking anti-retro viral drugs in Adama hospital medical college Oromia Ethiopia, 2020: Hospital based study

PARTICIPANT INFORMATION SHEET

Introduction: I am _____ a staffs of Addis Ababa university at a position of data collectors. I would like to invite you to take part in this study entitled “prevalence of depression and associated factors among patients taking anti-retro viral drugs in Adama hospital medical college”. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to listen the following information carefully. Ask questions if anything you listen is not clear or would like more information. Take time to decide whether or not to take part.

This participant information sheet will help you decide if you would like to take part. It sets out why we are doing the study, what your participation would involve, what the benefits and risks to you might be, and what would happen after the study ends. We will read you this information and the decision for being involved in the study is up to you. Feel free to do this.

Purpose of the study: is to know prevalence of depression and associated factors among patients taking anti-retro viral drugs in, Adama hospital medical college, Oromia, Ethiopia.

Duration of the study: the survey will be conducted from April to May, 2020 and you will stay with us a maximum of 30 minutes.

Reason for your invitation and right to involve: You have been asked to take part in this study because you are adults age > 18 years old. A minimum of **420** individuals like you from this Adama Hospital Medical College will participate in the Study.

Your participation in this study is fully voluntarily. It is up to you to decide for participation or not to participate or withdraw at any time. We will describe the study and go through the question I will ask you. then ask you to give a signed consent to show you agreed to take part.

Possible risks of the study: We don't expect any serious side-effects in this study participation; however, if any survey related problems occurred, we will make the appropriate action and service linkage immediately.

Possible benefits of the study: We cannot promise this study will help you directly but the information we get from the study will help to monitor and improve prevalence of depression and associated factors among HIV patients Taking ART

Confidentiality: All information which is collected about you during the course of the research will be kept strictly confidential, and any information about you and address will have not included in the final report so that you cannot be recognized (the anonymity is strictly kept).

Require further information: If you would like to get further information about this study please feel free to contact the principal investigator Mr. Tessema Gebru (phone +251911379520).

Thank you for taking the time to consider this study.

ADDIS ABAB UNIVERSITY SCHOOL OF PUBLIC HEALTH

Prevalence of depression and associated factors among patients taking anti-retroviral drugs in, Adama hospital medical college Oromia Ethiopia, 2021: Hospital based study

CONSENT FORM

I confirm that I have listened the participant information sheet of this study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, or my rights being affected.

I understand that the information collected will be used to support government of Ethiopia in the future, and may be shared anonymously across stakeholders and the government in the country to inform planning and improve program implementation.

Now, I want to thank you in advance for your participation in this study

Would you like to participate in our research? 1. Yes 2. No

IF '2 or NO', THANK THE RESPONDENTS AND END THE INTERVIEW

10. Annex II: Information sheet and consent (Afan Oromo Version)

Yuunivarsiitii Finfinnee Mana baruumssaa Fayyaa Hawasaa

Prevalence of depression and associated factors among patients taking anti-retroviral drugs in, Adama hospital medical college Oromia Ethiopia, 2021: Hospital based study

Waraqaa Odeffannoo qo'annoo

Seensa: Ani maqaan koo _____ hojataa Univarsiti Finfinnee yoo ta'uu qoodni hojii kiyyaa ragaaa funaanudha. Qorannoo tatamsaina dhukuboota sammuu fi dhimoota isa waliin walitti dhufiinssa qaban (Prevalence of depression and associated factors among patients taking anti-retroviral drugs in, Adama hospital medical college Oromia Ethiopia) irrattii akka hirmmattu sii afererera. Hirmaachuuf murtessuun dura qorrnoon maaliif akka barbachisuu fi siif faayidaa maal akka qabuu beekuu qabda. Odeffannoon arman gadii qayyabannan dhaggefachuuf qopha'ii. Wanta ifa hin taanee yoo jiraatee gaafii gaafachuu nidandessa. Yeroo xiqoo fudhadhuutii qoranna kana irrattii himaachuu ykn dhisuu kee murtessi.

Waraqaan oddeffannoo kun qo'annoo kanaa irrattii hirmaachuu ketiif si gargaara. Oddeffannoon kun, maaliif qorrnoon kun barbachisee, hirmaannan kee maal akka fakkatuu, faayidaa fi rakkoo(midhaa) sirrattii gessisuu fi qorranoon erga xumurame booda maal akka fakkatuu of kessa qaba. Oddeffannoo kan siifin dubisnaa, sana booda qorannoo kana irrattii hirmaachuuf murtiin kan keetii. Kana goochuuf homaa sittii dhaga'amu hin qabduu.

Kaayyoo Qo'annoo: Namoota qoricha farra HIV fudhachaa jirani fi tatamsaina dhukuboota sammuu fi dhimoota isa wajjin walqabataa ta'eegargar baasu fi qaama ilaaluf firii qo'annaa dhiyeessuu.

Yeroo qo'annoo fudhatuu: Qorrannoon kun kan gaggefamuu **Ebla 01/2021 hanga Fulbaana 30 2021.** Yoo baay'atee nu wajjiin kan turtuu daqiiqaa **30'** qofa.

Sababa atii fildamtee fi mirga hirmaachuu keetii: Ati kan gaafatamtuu umriin kee waggaa 18 ol waantateef. Gara namoota 422 ta'an Koollejjii Fayyaa Hopitaala Adamaa irraa Hirmaannan keessan qorrannoo kana irrattii hirmaachuuf feedhii guutuu irrattii hunda'a. Qo'annoo kana irrattii hirmaachuu ykn hirmaachuu dhiisuu ykn yeroo barbaaddan addaan kutuu dandeessuu. Waa'ee qorrannoo kana ibsuun fi oddeffannoo ga'aa kenninaa. Sana booda qorannaa kana irrattii hirmaachuu keetiif fedhii kee agarsiisuuf ni mallattessita.

Rakkoo qo’annoo wajjin dhufuu: Qo’annoo kannarrattii hirmaachuu kessanniin rakkoon niimmama jennee wanta yaadnu hin jiru, haa ta’uu malee, rakkoon yoo ummamnee battalumattii murtii barbaachisaa ta’ee ni fudhtamaa.

Faayidaa Qo’annoo : Qo’annoo kanarra faayidaa kallattii ni argatta jenne waadaa wanta galluu hin jiruu garuu infoormeesshinii (raga) kaanaa irra argamuu Namoo qoricha ART fudhachaa jira fi dhibee sammootii(depression) rakkachaa jiran fayyaduu danda’aa.

Iccitii eeguu: Ragaaleen isiinirra qorannoo kanaaf funanamee iccitiin issaa kan eegamuu fi gabaasa dhuma kessattii odfeennoon maqaa, tessoo fi kkf kan kessan akka hin ibsamnee isiin hubachisuu barbaadna.

Ragaa dabalataa yoo barbaaddee: Qorannoo kanaa irra ragaa dabalataa yoo barbaaddee itti gaaftamaa qorannoo Obboo Tasammaa Gabruu (Bilbila 0911379520) gaafachuu dandessu.

Qorannoo kanarrattii hirmaachuu keetiif galatoomi.

Yuunivarsiitii Finfinnee Mana baruumssaa fayyaa hawasaa

Prevalence of depression and associated factors among patients taking anti-retro viral drugs in, Adama hospital medical college, Oromia, Ethiopia, 2020: Hospital based study

Unka Waligaltee

Qorranna kan irratti hirmaachuuf waraqaan oddeffannoo qopha'ee naaf ibsamu isa nan mirkannessa. Carraa Oddeeffannoo qorranna akkan beeku fi gaafii akkan gaafadhuu carraa argadheerra akkasumas gaafii gaafadhhee qubsaan naaf deebifameera. Qorranna kanaa irrattii hirmaachuuf feedhii kiyya irrattii kan hunda'eedha , sababa tokko malee ykn mirgii kiyya yoo tuqamee yeroo barbaadee kessa gaafii giddudhaan addaan kutuu danda'a.

Ragaan annarra funaanamuu sagataa motummaan Itoophiyaa Dhibee sammuu finamoota qoricha Farra HIV fudhachaa jiraniif faayidaa akka kennuu qayyabadheera,akkasumaas ragaan qaama ilaalatuu fi motummaan karoorara akka fooyyessuf gargaaruu danda'a.

Qorranna kanairrtii hirmaachuu keetiif duraan durssee baayeen sigalateefadha

Qorannoo kana irrattii hirmaachuuf feedhii qabdaa? 1 = Eyyan 2 = Lakkii

Debiin '2' ykn' lakii ta'ee. Gaafatamaa galteenfadhuutii, gaafii asumattii dhaabii.

Aanaa_____Ganda_____Gooxii_____Garee/qaxanaa_____

Maqaa gaafatamaa_____Mallattoo_____Guyyaa_____

Lakk. Bilbilaa_____

Maqaa Gaafataa_____Mallattoo_____Guyyaa_____

Guyyaa Gaafiin Jalqabamee_____Yeroo- Sa'aatii/Daqqiqa: -----/-----

Guyyaa Gaaffiin xumuramee_____Dd/mm/year ____/____/_____

11. Annex III: Information sheet and consent (Amharic Version)

በአዲስ አበባ ዩኒቨርሲቲ የግህበት ስነ-ምግባር ትምህርት ቤት

የኤች አይቪ መድሃኒት በሚወስዱ ሰዎች ላይ የድብት ህመም ስርጭትና ተዛማጅ ሁኔታዎች የሚከሄድ ጥናት በአዳማ ሆስፒታል ሜዲካል ኮሌጅ ፡ አሮሚያ ፡ ኢትዮጵያ

ሆስፒታልን መሰረት ያደረገ ጥናት በ 2013/2014

የተሳታፊዎች የመረጃ ወረቀት (**Information sheet**)

ትውውቅ፡ አኔ _____ የ አዲስ አበባ ዩኒቨርሲቲ ሰራተኛ የሆንኩኝ የሥራ ድርሻዬ መረጃ መሰብሰብ ነው፡፡ በ አዳማ ሆስፒታል ሜዲካል ኮሌጅ የፀረ ኤች ኤቪ መድሃኒት ከሚወስዱ ሰዎች የድብት ስርጭትና ተያያዥነት ያላቸው ሁኔታዎች ላይ በምናደርገው ጥናት ላይ እንዲሰላተፉ ተጋብዞታል፡፡ ለመሳተፍ ከመወሰንዎ በፊት ጥናቱ ለምን እንደሚያስፈልግና ለእርስዎ ምን ጥቅም እንዳለዉ አለብዎት፡፡ ቀጥሎ ያሉትን ሃሳቦች በጥሞና ለማዳመጥ ይዘጋጁ፡፡ ግልጽ ያልሆነ ነገር ካለ ጥያቄ መጠየቅ ይችላሉ፡፡ ትንሽ ጊዜ ስደዉ በጥናቱ መሳተፍ መቻል/ አለመቻልዎን ያሳውቁን ይህ የምስጥዎት መረጃ በዚህ ጥናት እንዲሰላተፉ ረዳዎታል፡፡ መረጃዉ ይህ ጥናት ለምን እንዳስፈለገ ፤ ተሳትፎህ ምን እንደሚመስል በአንተ ላይ ሊደርስ የሚችልና ጥናቱ ከተጠናቀቀ በ“ላ ምን እንደሚመስል በወሰጡ ይዘዎታል፡፡

ጽሁፉን አንብልዎታለሁ ከዚያ በ“ላ በዚህ ጥናት መሳተፍ ወሳኔ ዉ የእርስዎ ነው፤ ይህንን ለማድረግ ምንም ነገር ሊሰማዎት አይገባም፡፡

የጥናቱ ዓላማ፡ ፀረ ኤች ኤቪ መድሃኒት እየወሰዱ ያሉ ሰዎችና የድብት ህመም ስርጭትና ተዛማጅ ሁኔታዎችን ሌይቶ ማወቅና ለመንግስትና ለሚመለከተው አካል ማሳወቅ ነው፡፡

ጥናቱ የሚወስደዉ ጊዜ፡ ይህ ጥናት ከመጋቢት ማያ ዝያ 01/2013 እስከ መስከረም 30/2014 ድረስ ነው፡፡

እርስዎ ከእኛ ጋር የሚቆዩት ቢበዛ 30 ደቂቃ ቢቻ ነው፡፡

ለጥናቱ የተመረጠበት ምክንያት፡ እድሜዎት ከ18 ዓመት በላይ ስለሆኑ አግባብ ያለዉ ምላሽ ይሰጣሉ በማለት ነው፡፡ ሌሎች ቁጥራቸው 420 የሚሆኑ ከዚህ ከአዳማ ሆስፒታል ሜዲካል ኮሌጅ በዚህ ጥናት ላይ የሚሰላተፉ ሰዎች ያሉ ሲሆን ፤ በጥናቱ ላይ መሳተፍ፤ አለመሳተፍ ወይም በፈለጉ ጊዜ ማቀረጥ ይችላሉ፡፡ ጥናቱን አስመልክቶ በቂ መረጃ እንሰጥዎታለን ፤ ከዚያ በ“ላ በዚህ ጥናት ላይ ለመሳተፍ ፍላጎትዎ ለማሳየት ይፈርማሉ፡፡

ከጥናቱ ጋር ሊከሰት የሚችል ነገር፡ በዚህ ጥናት ላይ በመሳተፍዎ ችግር ይፈጠራል ብለን የምንሰጋዉ ነገር የለም፡፡ ይሁን እነጂ ችግር እንኩዋን ቢፈጠር አፋጣኝ እርምጃ ይወስዳል፡፡

የጥናቱ ጥቅም: ከዚህ ጥናት በቀጥታ ጥቅም ያገኛሉ ብለን የምንገባው ቃል የለም፤ ነገር ግን ከዚህ ጥናት በሚገኘው መረጃ የኤች አይቪ መድሃኒት እየወሰዱ ያሉትን ሰዎችና የድብት ህመም ያለባቸውን ሰዎች ለጠቅም ይችላል፡፡

ሚስጦር ስለመጠበቅ : ይህ ከእርሶ የሚሰበሰበው መረጃ ሚስጦርነቱ የተጠበቀ ነው፡፡ በመጨረሻም ጥናቱ ሲጠናቀቅ የእርሶዎን አድራሻና ስም የማንጠቅስ መሆኑን እንገልጻለን

ተጨማሪ ክፍለ-ገጽ : በዚህ ጥናት ላይ ተጨማሪ መረጃ ክፍለ-ገጽ የጥናቱ ባለቤት አቶ ተሰማ ገብሩን በስልክ ቁጥር 0911379520 ደውለው መጠየቅ የችላሉ፡፡

በጥናቱ ስለተሳተፉ እጅግ በታም እናመሰግናለን

**በአዲስ አበባ ዩኒቨርሲቲ የማህበረ ሰብ ጤና ትምህርት ቤት
የኤች አይቪ መድሃኒት በሚወስዱ ሰዎች ላይ የድብት ህመም ስርጭትና ተዛማች ሁኔታዎች
የሚካሄድ ጥናት በአዳማሆስፒታል ሜዲካል ኮሌጅ : አሮሚያ : ኢትዮጵያ**

የስምምነት ፎርም

በዚህ ጥናት ለመሳተፍ በመርጃ ወረቀቱ ላይ የተዘጋጀውን ፅሁፍ ተነቦልኝ በትክክል መረዳቴን አረጋግጣለሁ

ስለጥናቱ ያለውን ሁኔታ እንዳውቅና ጥያቄም እንድጠይቅ ፣ ባገኘሁት እድል ለጠየኩት ጥያቄዎች አጥጋቢ መልስም ተሰቶኛል፤ ጥናቱን የምሳተፈው በራሴ ሙሉ ፍላጎት ነው። ያለምንም ምክንያት መብቴ የሚነካ ከሆነ በፈለኩ ጊዜ ጥያቄውን በመሃል ማገረጥ አችላለሁ። ከኔ በሚሰበሰበው መረጃ የኢትዮጵያ መንግስት የኤች አይቪ መድሀኒት በሚወስዱ ሰዎች ላይ የድብት ህመም ስርጭትና ተዛማች ሁኔታዎችን ለይቶ ችግሩን ለመቅረፍና ለቀጣይ ጊዜቶች በዕቅድ ውስጥ በማስገባት ችግሩን ለመቅረፍ ሊረዳ ችላል።

በዚህ ጥናት ላይ በመሳተፍዎ በቅድሚያ ላመሰግኖት እወዳለሁ።

በዚህ ጥናት ለመሳተፍ ፍቃደኛ ኖት ? 1. አዎ 2. አይደለም

መልሱ 2 (አይደለም) ከሆነ ተጠያቂውን አመስግንና ጥያቄውን እዚሁ ላይ አቁም።

የተጠያቂውስም _____ ፊርማ _____ ቀን _____ ስልክቁጥር _____

የጠያቂውስም _____ ፊርማ _____ ቀን _____ ስልክ ቁጥር _____

ጥያቄዎ የተጀመረበት ሰዓት _____ ደቂቃ _____

ጥያቄዎ የተጠናቀቀበት ሰዓት _____ ደቂቃ _____

English Version Questionnaire

Session A. SOCIO DEMOGRAPHIC CHARACTERISTICS		
S.No	Question	Response
101.	Age in complete year	/__/_/
102.	Sex	1.Female 2.Male
103.	Residence	1.Urban 2.Rural
104.	Religion	1.Orthodox Christian 2.Protestant 3.Muslim 4.Catholic 5. Others (Specify)...
105.	Level of education	1.No formal education 2.Less than primary school = < grade 6 3.Primary school = grade 6-8 4.Secondary school = 9-12 5.College = 2-3 years 6.Faculty = 4-6 years

106.	Ethnic Group	1.Oromo 2.Amhara 3.Tigre 4.Gurage 5.Others
107.	Marital Status	1.Married 2.Not married 3.Divorced 4.Widowed 5.Separated
108.	Work Status	1.Employed 2.Non Employed
109.	Average Monthly income	_ _ _ _ _ _ _ _ _
Session B. psychological and social factors		
201.	Alcohol consumption	1.Yes 2.No
202.	Chewing Chat	1.Yes 2.No
203.	Smoking Cigarettes	1.yes 2.No
204.	Past psychiatric history	1.Yes 2.No
205.	Co-morbid psychiatric condition	1.Yes 2.No
206.	Family history of psychiatric illness	1.Yes 2.No
207.	Poor social support	1.Yes 2.No
Session C .Presence of chronic Non-communicable diseases		
301.	Diabetes Mellitus	1.Yes 2.No
302.	Hypertension	1.Yes

		2.No
303.	Cardiac disease	1.Yes 2.No
304.	Asthma	1.Yes 2.No
Session D. Other possible Factors associated Depression of PLHIV		
401.	HIV Status of partner	1.Negative 2.Positive
402.	Viral Load status	1. >1000 copies 2.< 1000 copies
403.	CD 4 count on diagnosis	1.>500 2.200-499 3.<200
404.	CD 4 count during data collection	1.>500 2.200-499 3.<200
405.	Disclosure status	1.Disclosed 2.Not disclosed
406.	Living Companion	1.Yes 2.No
407.	Source of Financial support	1.Self 2.Other sources
408.	HIV/AIDS clinical Stage	1.Stage I 2.Stage II 3.Stage III 4.Stage IV
409.	Impairment in activity of daily living	1.Yes 2.No
410.	Felt stigmatization	1.Yes 2.No
411.	Have you been develop Opportunistic infection	1.Yes 2.No
412.	Duration on ART drugs in complete months.	___/___
413.	Taking antidepressant?	1.Yes 2.No
414	Treatment Level	1.1 st Line 2.2 nd Line

415	ART dose given per day	1.Once daily 2. Twice daily 3. Three times aday
416	Any treatment taken other than ART	1.Yes 2. No
417	Any side effects of ART medication	1.yes 2. No
418	Adherence Status	1.Adhered 2. Not Adhered
419	Daily eating pattern	1.3 meals or more 2.2 meals or less
420	Body mass index(BMI)	1.underweight 2.Normal 3.Over weight

Patient Health Questionnaire (PHQ-9)

Name _____ date _____

Over the last 2 weeks, how often have you been bothered by any of the following problems? (Use “√”to indicate your answer

S.No	Patient Health Questionnaire (PHQ-9)	Not at all	Several days	More than half the days	Nearly every day
		0	1	2	3
501	Little interest or pleasure in doing things	0	1	2	3
502	Feeling down, depressed, or hopeless	0	1	2	3
503	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
504	Feeling tired or having little energy	0	1	2	3
505	Poor appetite or over eating	0	1	2	3
506	Feeling bad about yourself of that you are a failure or have let yourself or your family down	0	1	2	3

507	Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
508	Moving or speaking so slowly that other people could have noticed. Or the opposite-being so fidgety or restless that you have been moving a lot more than usual.	0	1	2	3
509	Thoughts that you would be better off dead, or of hurting yourself.	0	1	2	3
Add columns				+	+

Total sum _____

Gaaffilee marii kan Afaan Oromoo

Session A. Socio Demographic Characteristics		
101	Umurii waggaan	____/____
102	Saala	1. Dubartii 2. Dhiira
103	Iddoo jireenyaa	1. Magaala 2. Baadiyyaa
104	Amanttaa	1. KIRSTAANA ORTODOOKSII 2. PROTESTAANTTII 3. MUSLIIMA 4. KAATOLIKII 5. KAN BIRAA (YAAIBSAMU)
105	Sadarkkaa baruumssaa	1. Barumssa seera qabeessa hintaane 2. Sada.1ffaa gadi =kutaa6 gadi 3. Sada.1ffaa =kutaa 6-8 4. Sada.2ffaa=9-12 5. Koollejji waggaa 2-3 6. Fakalitii = waggaa 4-6

106	Sabummaa	1. Oromoo 2. Amaara 3. Tigree 4. Guraagee 5. Kanbiraa
107	Haala fuudha fi heerumaa	1. Kan fuudhe/heerumtte 2. Kan hinfuune/heerumnne 3. Kan hiike/hiiktte 4. .kan abbanwarra/haatiwarraa jalaadu'e/duute. 5. Kan adda ba'e/baate
108	Haala hojii	1. Kan qacaramtte 2. Kan hin qacaramnne
109	Galii giddugala ji'aa	___/___/___/___/___
Session B.Psychological and Social Factors		
201	Alkoolii ni fayyadamtuu	1. Eyyen ni fayyadama 2. Hinfayyadamu
202	Jimaa ni qaamaatuu	1. Eyyen ni qama'a 2. Hinqama'u
203	Tamboo ni xuuxuu	1. Eyyen ni xuuxa 2. Hixuuxu
204	Dhukkuba sammuu kanaan dura ni qabduu ?	1. Eyyen niqaba 2. Laki hinqabu
205	Dhibee biraa dhukkuba sammuu waliinwalqaba ni turee?	1. Eyyen ni ture 2. Hinturre
206	Dhukkubnni sammuu maatii keessa nijiraa	1. Eyyen nijira 2. Hinjiru
207	Deeggarssi hawasaa dadhabaadha?	1. Eyyen 2. Miti
Session C: Presence of Chronic Non- Communicable diseases		
301	Dhibee sukara niqabduu	1. Eyyeen 2. Hinqabu
302	Dhibee dhiibbaa dhiigaa niqabduu	1. Eyyen 2. Hinabu
303	Dhibee Onnee niqabduu	1. Eyyen 2. Hinqabu
304	Dhibee Asmii niqabduu	1. Eyyen 2. Hinqabu
Session D: Other Possible Factors Associated Depression of PLHIV		
401	Haala HIV abba warraa/haadha warraa	1. Negative 2. Positive
402	Lakkoofssa Vaayirasii	1. Koopii 1000 ol/ml 2. Koopii 1000 gad/ml

403	Lakkoofssa “CD4” yeroo duraaf(on diagnosis)	1. Dhibba shanii ol(>500) 2. 200-499 3. Dhibbalama gadi
404	Lakkoofssa CD4 yeroo ragaan kun sassaabbamu	1.Dhibba shanii ol(>500) 2.200-499 3.Dhibbalama gadi
405	Icittii ofii dabarsanii nama biraatti himuu	1. Eyyen hime jira 2. Lakkii hin himne
406	Namnni waliin jiraatu jiraa	1. Eyyen 2. Hinjiru
407	Maddi galii	1. ofii kootif 2. Iddoo biraatirraayi
408	Sadarkkaan HIV irra jiu	1. Sadarkkaa 1 ffaa 2. Sadarkkaa 2ffaa 3. Sadarkkaa 3ffaa 4. Sadarkkaa 4ffaa
409	Guyyaa guyyaa hojachuuf rakkoon fayyaa ni jira	1. Eyyen 2. Hinjiru
410	Namarraa gargar ba’uu sitti dhaga’amaa	1. Eyyen 2. Hindhaga’amu
411	Dhibeewwan carra fayyadamtootan qabamttee beektaa	1. Eyyen 2. Qabamee hinbeeku
412	Qoricha HIV irra yeroo meeqaf turtte	_____ / _____
413	Qoricha Sammuu fudhachaa jirtaa	1. Eyyen 2. Hinfudhadhu.
414	Sadarkkaa qoricha fudhachaa jiru	1. Sadarkkaa 1ffaa 2. Sadarkkaa 2ffaa 3. Sadarkkaa 3 ffaa
415	Guyyaatti Qoricha HIV yeroo meeqa fudhata	1. Guyyaatti al tokko 2. Guyyaatti al lama 3. Guyyaatti al sadi
416	Yaalii HIV tiin ala Yaaliin biraa fudhatte jiraa	1. Eyyen 2. Hinfudhanne
417	Rakkoo kamiyyuu kan qorichi HIV ume jiraa	1. Eyyen 2. Hinjiru
418	Sadarkkaa qorichaan walitti hidhamiinssaa	1. Gaarii 2. Gaarii miti
419	Guyyaatti Yeroo meeqa nyayata nyaatu	1. Nyata sadii ol 2. Nyata lamaa gadi
420	Haala ulfaatina qaamaa (BMI)	1. Ulfaatina barbaachisuu gadi 2. Ulfaatina sirri ta’e. 3. Ulfaatin barbaachisuu ol

Gaaffilee Haala Fayyaa Maammila ittiin qorannu

Maqaa _____ Guyyaa _____

Torbban darbban lamaan keessa qabxiilewwan armaan gaditti xuqaman keessa kamiin sardamaa turee?

Lakk	Gaaffilee maamilaaf dhiyyatu	gongumaa	Guyyaa baayee	Guyyaa cinaa ol	Guyyaa guyyan
		0	1	2	3
501	Hojii guyyaa guyyaan hojjettu keessatti fedhii fi kaka'uumssi kee gadi bu'ee turee?	0	1	2	3
502	Calisuu , Mukaa'u fi abdii kutachuun ni jira	0	1	2	3
503	Irribnni si fudhachuu diduu yokin irriba rafuun sirakkisee beekaa	0	1	2	3
504	Dadhabuu , yookin humna dhabuun ni jiraa?	0	1	2	3
505	Fedhiin Nyaata fudhachu kee gadi bu'ee?	0	1	2	3
506	Of jibbuu yookin gatii hinqabu ofis ta'ee maatii koo gaddisiisen jira dandeettin jedhu sitti dhaga'amaa?	0	1	2	3

507	Hojii hojjetanirratti yaada keessan walitti qabuun isin rakkisa? Fakkeenyaaf namoota walii yoo taphatan xiyyeeffannaan dhaggeeffachurratti rakoon jiraa?	0	1	2	3
508	Namoonni biraa hangga sirratti beekanitti suuta jettee deemuu fi haasawuun sirraa mulataa?	0	1	2	3
509	Jiraachurra du'aatii naaf wayya jedhanii yaaduu yookinimmoo miirri of miidhuu sirraa mullataa?	0	1	2	3
	Ida'aa		+	+	

Ida'ama walii gala _____

መጠይቆች የማወያያ ነጥቦች በ አማርኛ

ክፍል ሀ. ስነ ሕዝባዊ መለያ ባህሪዎች		
ተራ ቁጥር	መጠይቅ	ዝርዝር መልስ
101.	እድሜ ሙሉ ዓመት	---/---/
102.	ፆታ	1.ሴት 2.ወንድ
113.	መኖሪያ ሥፍራ	1.ከተማ 2.ገጠር
104.	ሐይማኖት	1.ኦርቶዶክስ ክርስቲያን 2.ፕሮቴስታንት 3.ሙስሊም 4.ካቶሊክ 5.ሌላ ካለ ይግለፁ
105.	የትምህርት ደረጃ	1.ያልተማረ 2.ከአንደኛ ደረጃ በታች (1-6) 3.አንደኛ ደረጃ =ከ6-8 4.ሁለተኛ ደረጃ = ከ 9-12 5.ኮሌጅ = 2-3 ዓመት 6.ፋካሊቲ, = 4-6 ዓመት
106.	ብሄር	1.ኦሮሞ 2.አማራ 3.ትግሬ 4.ጉራጌ 5.ሌላ
107.	የጋቢቻ ሁኔታ	1.ያገባ/ች 2.ያላገባ/ች 3.የፈታ/ች

		4.ባል/ሚስት የሞተችበት/ባት 5.ተለያይቶ የሚኖሩ
108.	የሥራ ሁኔታ	1.ሥራ ያለው 2.ሥራ ይሌለው
109.	አማካይ የወር ገቢ	___/___/___/___
ክፍል ለ :- የስነ ልቦናዊና ማህበራዊ ጉዳዮች		
201.	አልኮል ይጠቀማሉ(ይጠጣሉ)?	1.አዎ 2.የለም
202.	ጫት ይቅማሉ ?	1.አዎ 2.የለም
203.	ሲጋራ ያጨሳሉ ?	1.አዎ 2.የለም
204.	ያለፈ የአእምሮ ህመም ነበር ወይ?	1.አዎ 2.የለም
205.	ከህመሙ ጋር የተገናኘ የአእምሮ መረበሽ ነበር ወይ?	1.አዎ 2.የለም
206.	በቤተሰብ (በዘር)የአእምሮ ህመም ነበር ወይ	1.አዎ 2.የለም
207.	በአካባቢዎ የማህበራዊ ድጋፍ ይደረግሎታል	1.አዎ 2.የለም
ክፍል ሐ :- የቆዩና ተላላፊ ያልሆኑ በሽታዎችን በተመለከተ		
301.	የስኳር በሽታ ነበረብዎት?	1.አዎ 2.የለም
302.	የደም ግፊት ነበረብዎት?	1.አዎ 2.የለም
303.	የልብ ህመም ነበረብዎት?	1.አዎ 2.የለም
304.	በአስም ተይዘው ያውቃሉ?	1.አዎ

		2.የለም
ክፍል ሙ:- ሌሎችኤችአይቪ በደማቸው ያለባቸው ሰዎችና ድብትን የሚያመለክቱ ተዛማች ጉዳዮች		
401.	የባለቤት የኤች አይቪ ሁኔታ	1.ቫይረስ በደሙ/à ዩሌለ 2/ቫይረስ በደሙ/à ያለ
402.	የኤች አይቪ ቫይረስ መጠን	1.ከ1000 ኮፒ በላይ 2.ከ1000 ኮፒ በታች
403.	ቫይረሱ በደሙ/ምዋ የተገኘ ጊዜ የነበረው የሲ.ዲ 4 መጠን	1.ከ500 በላይ 2.ከ200-499 3.ከ200 በታች
404.	አሁን መረጃው ሲሰበሰብ ያለው የሲ.ዲ 4 መጠን	1.ከ 500 በላይ 2.ከ 200-499 3.ከ 00 በታች
405.	የራስን ሚስጥር አሳልፎ ለሌላው መናገር	1.ተናግራያለሁ 2. አልተናገርኩም
406.	አብሮት የሚኖር ሰው አለ ወይ	1.አዎ አለ 2.የለም ቢቻይን ነው
407.	የገንዘብ እርዳታ ምንጭ	1.ክራስ 2/ከሌላ ምንጭ
408.	የኤች አይቪ ኤይድስ ደረጃ	1.ደረጃ አንድ 2.ደረጃ ሁለት 3.ደረጃ ሶስት 4.ደረጃ አራት
409.	የየአለት ሥራዎትን ያለ ምንም ድካም ይሰራሉ	1.አዎ 2.የለም ይደክመኛል
410.	ኤች አይቪ በደምዎ ውሥጥ ስለአለ ሰዎች መድሎ ያደርሱብኛል ብለው ያስባሉ	1.አዎ 2. አይ አስቤ አላውቅም
411.	በተገባዎቹ በሽታዎች ታመዉ ያውቃሉ	1.አይ አልታመምኩም 2.አዎ ታምሜ ነበር
412.	የኤች አይቪ ኤይድስ መድሐኒትን ለምን የህል ጊዜ ወሰዱ በወር የገለፅ	----/---

413.	ለድብት/ድብርት ማነቃቂያ መድሐኒት ይወስዳሉ	1.አዎ 2.አይ አልወስድም
414	የህክምና ደረጃ	1.ደረጃ አንድ 2.ደረጃ ሁለት
415	በቀን የሚወስዱት የመድኃኒት መጠን	1.በቀን አንድ ጊዜ 2. በቀን ሁለት ጊዜ 3. በቀን ሦስት ጊዜ
416	ከኤአርቲ መድኃኒት የተለየ ሌላ መድኃኒት ይውስዳሉ ወይ	1.አዎ እወስዳለሁ 2. አይ አልወስድም
417	የኤአርቲ መድኃኒት የጎንዮሽ ጉዳት አድርሰዎታል	1.አዎ 2.የለም
418	የህመምተኛውና መድኃኒት ቁርኝት ሁኔታ	1.ቁርኝት አለ 2. አለተቆራኝም
419	እለታዊ የአመጋገብ ሁኔታ	1.በቀን 3 ጊዜና ከዚያ በላይ 2. በቀን 2 ጊዜና ከዚያ በታች
420	የሰውነት ክብደት መጠን (BMI)	1.ከጤነኛ ክብደት በታች 2. ጤነኛ 3. ከጤነኛ ክብደት በላይ

PHQ-9

ማስታወሻ አልፎ አልፎ ብቻ (2-6 ቀናት) ፤ በዛ ላለ ጊዜ (7-11 ቀናት) ፤ ከሞላ ጎደል በየቀኑ (12-14 ቀናት) መሆኑን ይግለጹ።

ስም _____ ቀን _____

ባለፉት ሁለት ሳምንታት ከነዚህ ከምዘረዘራቸው ችግሮች ውስጥ ፤ የትኞቹ ደርሰውብዎት (በየትኞቹ ተቸግረዋል) እንደነበር እጠይቅዎታለሁ።

ተ.ቁ	9 የዳሰሳ መጠይቆች	ምንምች ግርዶለም	ብዙ ቀን	ከግማሽ ቀን በላይ	በየቀኑ
		0	1	2	3
501	የእለት ተእለት ተግባርዎን ለማከናወን (ለመስራት) ያለዎት ተነሳሽነት ወይም ፍላጎት በጣም ቀንሶ ነበር?	0	1	2	3
502	የመከፋት፣ የመደበት ወይም ተስፋ የመቁረጥ ስሜት ይሰማዎት ነበር	0	1	2	3
503	. እንቅልፍ አልወሰድ ብሎዎት ወይም በደንብ መተኛት አቅትዎት የቸግሩ ነበር?	0	1	2	3
504	የድካም ወይም የአቅም ማነስ ስሜት ይሰማዎት ነበር?	0	1	2	3
505	የምግብ ፍላጎትዎ ቀንሶ ነበር?	0	1	2	3
506	ራስዎን የመጥላት ወይም ዋጋ የለኝም የማለት ወይም ራሴንም ሆነ ቤተሰቤን አሳዝኛለሁ የሚል ስሜት ተሰምትዎት ነበር?	0	1	2	3
507	በሚሰሩት ሥራ ላይ ሀሳብዎን ለመሰብሰብ/ትኩረት መስጠት አስቸግርዎት ነበር? (ለምሳሌ፣ ክሰዎች ጋር ሲጨዋወቱ ትኩረት ስጥቶ ማዳመጥ)	0	1	2	3
508	ለሌሎች ሰዎች እስከሚታወቅ ድረስ በእንቅስቃሴዎ ወይም በንግግርዎ ብጣም ቀስ በለዉ ነበር?	0	1	2	3
509	. ከምኖር ብሞት ይሻለኛል ብለዉ አስበዉ ወይም ራስዎን በሆነ መንገድ ሲጎዱ አስብዉ ነበር?	0	1	2	3
			+	+	

ጠቅላላድምር : _____