



**ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH  
SCIENCES, DEPARTMENT OF FAMILY MEDICINE**

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**PREVALENCE OF DEPRESSION AND ASSOCIATED FACTORS AMONG  
HIV PATIENTS ATTENDING ART CLINIC IN ALERT HOSPITAL, FROM  
JUNE 1 TO JULY 31, 2023 ,ADDIS ABABA,ETHIOPIA**

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Family Medicine)

**A THESIS REPORT SUBMITTED TO AAU, DEPARTMENT OF FAMILY  
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SPECIALTY CERTIFICATE IN FAMILY MEDICINE**

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## THESIS REPORT SUBMISSION FORM

Name of the principal investigator	Dr Girma Daniel Bushiso
Name of the primary advisor	Dr Elnatan Kebebew [Family Physician ,Assistant Professor of Family Medicine]
The full title of thesis report	Prevalence Of Depression And Associated Factors Among HIV patients attending Alert Hospital Ethiopia, From June 1 to July 31,2023
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The project's overall cost	26,410 Ethiopian Birr
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## PRINCIPAL INVESTIGATOR ASSURANCE

I, the undersigned, accept full responsibility for the scientific and ethical conduct of the research project and agree to provide necessary progress reports in accordance with the Terms and Conditions of the Office for Scientific Publications in effect at the time of grant award. I shall provide timely progress reports to consultants and obtain necessary advice and approvals from key consultants during the study process.

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## ACRONYMS AND ABBREVIATION

AIDS	Acquired immune deficiency syndrome
ART:	Antiretroviral therapy
cART:	combination antiretroviral therapy
DASS-21:	Depression, Anxiety and Stress Scale-21
CI:	Confidence interval
DTG:	Dolutegravir
EPI Data:	Epidemiological Data
HADS:	Hospital Anxiety and Depression Scale
HIV:	Human immune deficiency virus
OR:	Odd ratios
OSSS-3:	Oslo social support scale-3
PHQ-9:	Patient Health Questionnaire-9
PLWHA:	People living with HIV/AIDS
SNNP:	Southern Nation Nationalities and People
SPSS:	Statistical Package for Social Science
WHO:	World Health Organization
YLD:	years lived with disability

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## ABSTRACT

### **Background:**

The global HIV/AIDS 2017 report estimated that 36.9 million people were living with HIV/AIDS. Sub-Saharan Africa accounted for around two thirds of the global HIV infection rate, with Eastern and Southern Africa, including Ethiopia, accounting for 43% of new cases. Depressive illness affects 12% to 60% of HIV-positive individuals and is often undiagnosed. A study in Ethiopia found a variable prevalence of depression among HIV/AIDS patients. The study used the PHQ-9 screening tool to measure depression levels and related factors among ART clinic patients.

**Objective:** The intention of this study was to evaluate the prevalence and associated factors of depression in HIV patients visiting ART clinic at Alert Hospital, Addis Ababa, Ethiopia from June 1 to July 31, 2023.

### **Methods:**

A Hospital-based cross-sectional research was conducted among adults HIV patients aged 18 years or older visiting ART clinic at Alert Hospital from June 1 to July 31, 2023. Data were collected through face-to-face interviews using pre-tested structured questionnaires and patient chart review. The final sample size was 356 participants selected through convenience sampling. The collected data were imported into EPI Data 3.1 where they were coded, sorted, processed and validated using SPSS version 27.

**Result:** The outcome showed that 47.8% of people had depression (95% CI: 45.41 - 50.19). Furthermore, multivariable analysis revealed that the following factors were statistically significant: alcohol [AOR= 1.959; 95% CI: 1.008, 3.808), perceived HIV stigma [AOR=1.978% CI: 1.252, 3.124)], poor social support [AOR= 1.500 95% CI: (1.252, 3.124)], and WHO HIV stage [AOR=0.585(0.331, 1.034)].

**Conclusion:** This study showed that nearly half of the ART clinic's patients affected by depression. Depressive symptoms were substantially correlated with alcohol consumption, a lack of social support, and the perception of HIV stigma.

**Recommendation:** Many HIV-positive patients in the ART clinic suffer from depression. Therefore, we advise organizations implementing HIV programs to manage depression in patients who are HIV positive and to conduct routine screenings using the PHQ-9 Depression Assessment Tool and researchers to carry out prospective design studies for better result.

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# 1. INTRODUCTION

## 1.1 Background

One of the biggest threats to world health today is HIV/AIDS. About 940,000 individuals have died and 1.8 million new cases of HIV infection had been reported globally by the end of 2017, leaving 36.9 million people living with the virus (PLWHA). It was revealed that 39% of them had experienced depression. Nearly 800,000 individuals die by suicide annually, and over 300 million people worldwide suffer from depression, according to a new WHO research.(1)

Depression is one of the most frequent mental illnesses among HIV/AIDS patients. Research indicates that depression is twice as common in HIV-positive individuals as it is in HIV-exposed individuals. HIV/AIDS and depression are predicted to be the two main causes of disability worldwide by 2030. Depression is a common problem among HIV/AIDS patients in low- and middle-income nations. In sub-Saharan Africa, between 9 and 32% of persons living with HIV (PLWHA) report having depression. It varies from 7.3 to 73.3% in Ethiopia.(2)

The prevalence estimates of depression, anxiety, and stress among PLWHA have been observed to differ worldwide. Variations in the estimations have been ascribed to various study sites and methodological strategies. Recent studies from high-income countries, for example, the United States, suggest a 36% prevalence of depression among a large national sample of HIV-positive men and women. In the United Kingdom, the prevalence estimates of depression among people living with HIV was 19.8% .16 Studies in India using DASS-21 reported that 50% PLWHA suffered from depression.(2)(3)

It was estimated that up to 19% of PLWHA in sub-Saharan Africa suffered from mental illnesses. In Brazil, 32% of HIV-positive people suffer from depression. Additional research on the prevalence of depression among HIV patients in other nations revealed that it was 40.9% in China, 18.9% in Malawi, and 26.7% in Cameroon.(4)

In Ethiopia, the study conducted in different part regions showed 48.6% in Hawassa, 14.6% in Aksum town, 45.8% in Harar town, 35.5% in Addis Ababa, 20% in Dessie referral hospital, South Wollo and 32% of people in South Ethiopia suffer from depression. (3)(5)

## 1.2 Statement of the Problem

In 2010, depression was thought to have contributed to 2.2 million additional deaths worldwide due to suicide or the exacerbation of coexisting conditions. Compared to 5% of the overall population, it is substantially more prevalent among persons living with HIV, whose prevalence estimates range widely from 13 to 78%. Throughout their disease, people with HIV frequently have protracted depressive episodes, which negatively impact their quality of life. Individuals living with HIV who also have depression have a lower likelihood of adhering to antiretroviral medication (ART) effectively, a higher likelihood of experiencing clinical progression due to non-adherence and developing virologic failure. In individuals living with HIV, depression may worsen existing disease states and lead to poorer health outcomes. In terms of disability and mortality are increasing from depression worldwide. People with depressive disorders are 40% more likely to die prematurely.(5)

350 million individuals worldwide suffer from depressive symptoms, which rank as the fourth most common cause of disability. Prominent depressive symptoms impact 3.63 million persons (PLHIV) in countries of Sub-Saharan Africa, where depression is a prominent problem. Estimates of the frequency of depression among PLWH in Ethiopia have varied widely in the past, ranging from 11.7 to 76.7 %.(6)

When HIV infection is severe, depressive symptoms can have a detrimental effect on how the virus progresses and raise the risk of suicide and death. Recurring negative feelings, diminished working capacity, loneliness, physical deterioration, difficulty solving problems, increased forgetfulness or concentration issues, and decreased economic output are all consequences of depression symptoms, which are again more severe in HIV-positive individuals. HIV outcomes have been found to be worse in mentally ill individuals. This might be due to a number of causes, including immunological alterations brought on by the mental illness itself and poor adherence to highly active antiretroviral treatment (HAART).(7)

### 1.3 Significance of the study

It is unknown how common depression is among HIV-positive individuals in Africa, despite the continent's high HIV prevalence and the awareness that depression exacerbates HIV outcomes. In low-resource nations, depression diagnoses are much less prevalent. This can be attributed to a variety of factors, such as overbooked clinics, scarce resources for mental health professionals, and variations in the predicted versus real manifestation of depression in HIV-positive individuals. (8)

Approximately two thirds of all HIV infections worldwide occur in Sub-Saharan Africa, with 43% of new infections occurring in Eastern and Southern Africa, which includes Ethiopia. One of the sub-Saharan countries most impacted by HIV is Ethiopia, where depression remains a significant public health concern. Depressive disorders affect between 12% and 66% of HIV-positive people, and between 50% and 60% of these patients do not obtain a diagnosis unfortunately, there is little data currently available on the prevalence of depression and the risk factors for depression among PLWHA populations in Ethiopia.(9)

A limited number of research conducted in various regions of Ethiopia indicate a variable and non-significant frequency of depression among people living with HIV/AIDS. Research conducted between 2012 and 2016 revealed that the burden of depression varied, ranging from 14.6% to 48.6%. Furthermore, the Hospital Anxiety and Depression Scale (HADS), which has a cut-off point of greater than or equal to 8 scores, was used in a prior study on depression and related factors at Alert Hospital in 2015. It is less sensitive than the Patient Health Questionnaire (PHQ-9), which requires an update. (10)

The 9-item Patient Health Questionnaire PHQ-9 is a preferred as it has been favored depression screening tool when used with PLWHA in, Ethiopia, Kenya, Uganda, Nigeria Cameroon and South Africa. The PHQ-9 is a reliable screening tool with sensitivity and specificity ranging from 86% to 91.6% and 67% to 81.2 %, respectively. The scores 5–9, 10–14, 15–19, and 20–27 points correspond to mild, moderate, moderately severe, and severe degrees of depression symptoms, respectively, in terms of severity. (11)

This study was conducted by administering the valid and sensitive tool PHQ-9 to find out the magnitude of depression, associated factors with OSSS-3 and perceived stigma scale and these will provide updated information on burden of depressive symptoms and related factors among HIV patients attending ART clinic at Alert Hospital.

## 2. LITERATURE REVIEW

### 2.1 Prevalence

Depression has been found to be twice as common among HIV/AIDS patients worldwide as in the general population, and two to four times as common in those who are infected with the virus. In HIV-positive people, mental illness often affects 12% to 60% of the population and goes untreated in 50% to 60% of cases. (12)

Depression will be the world's biggest source of illness burden by 2030. Approximately 76% and 85% of persons with serious mental problems in low- and middle-income nations, respectively, do not receive treatment for their mental health issue. Compared to the general population, HIV-positive people have a far greater frequency of mental health issues (13) (14)

The overall frequency of depression in HIV patients varies between 22 to 45%. According to reports, between 20 and 40 percent of people receiving therapy in the United States have depression at some point in their lives. In China, India, and Brazil, 53.3%, 56%, and 36% of patients were identified as having depression by the use of brief structured screening tools. According to other research conducted in India, the prevalence of depression varied between 58.75% and 67.3% throughout time. Comparably, 61% was seen in Denmark. (9–14). (9–14)

In sub-Saharan Africa, the combined prevalence of depression among PLWHA was 9 to 32%.56.7% of HIV/AIDS patients in Nigeria, 47% in Uganda, and 37.6% in South Africa reported having depression. The prevalence ranged from 12.8 to 78% in low-, middle-, and high-income countries according to systematic reviews and meta-analyses. Studies conducted in Kenya, Namibia, and Tanzania revealed that 28% and 58% of Black Americans live in these three African nations.(15)

Among HIV/AIDS patients in Ethiopia, the combined prevalence of depression was 38.93%.According to systematic reviews and meta-analyses, the prevalence of depression varied from 20% in Dessie to 48.6% in research conducted in Hawassa (6)(11)(16). According to a cross-sectional survey, 50.5% of HIV patients who visit the Wolaita Sodo University Teaching and Referral Hospital's ART Clinic also suffer from depression.(14) According to a

similar survey, 44.9%, 42.96%, 41.8%, 41.7%, and 41.2% of patients in Southeast Ethiopia's public hospitals—the Public Hospitals of Nekemte Town, Ambo Town, Gimbi General Hospital, and Alert Hospital—had depression, respectively.(7)(17) (18) Other studies conducted at Debre Birhan, yekatit 12 hospital medical college, at Jimma University Medical Center and Harrar show that 38.94% 32.9 % and 31% & 31% respectively.(19)(20)(21)

## 2.2 Associated factors

Previous studies on depression in HIV patients at follow-up in ART clinic, evaluated the relationship between depression and HIV in PLWHA found that depression was substantially correlated with HIV stage III, poor medication adherence, perceived stigma, and poor social support. Therefore, in order to provide decision makers and implementers with the information they need, a thorough research that can compile the results of prior studies is required (4) (18)

Literatures showed that a number of factors, including WHO HIV/AIDS stage, current CD4 count, medication adherence, drug regimen, current drug side effect, duration of HAART treatment and viral load, presence of opportunistic infection, and psychosocial variables like living condition, perceived stigma, social support, HIV serostatus disclosure, and lost job, were associated with the occurrence of depression among PLWHA (17)(22)

Age, sex, ethnicity, baseline CD4 count, and viral load are important characteristics linked to an elevated risk of mental illness, according to US studies. (17) Additional research carried out in Chongqing, China, revealed that the main variables linked to depression include age, place of residence, occupation, and income.(4) Data from a cross-sectional research carried out in Pakistan includes information on gender, age, education, employment position, place of residence, religion, social support networks, fear of discrimination and stigma, overseas work experience, CD4 cell count, familial history of depression, and drug addiction. (23)

A cross-sectional study conducted at rural Kilifi, Kenya show that being on a second-line cART regimen, having any existing chronic disease or opportunistic infection, being separated, divorced, or bereaved, feeling stigmatized by HIV, and being unable to attend clinics were all considerably associated with an increased risk for positive depression. In contrary, depression was linked to male sex and higher educational attainment, according to a cross-sectional study conducted at the Cape Coast Teaching Hospital in Ghana .(24)

Male sex, living in an urban setting, having opportunistic infections, having poor medication adherence, and having a high perceived stigma associated with HIV are among the key characteristics linked to depression among HIV patients, according to a cross-sectional research done at Gimbi General Hospital. (3) In a similar studies, research from Jimma University Medical Center indicates that depression is related to sex, marital status, opportunistic infections, and treatment adherence. (20) Additional research carried out in the Southeast Ethiopian public health facilities, Dessie referral Hospital, Alert Hospital, and Harar town reveals that the parameters that substantially correlate with depression in HIV patients are CD4 count < 200, HIV stage III, and felt stigma related to HIV patients. On the other hand, despite similarities in previous studies, a research done at Wolaita Sodo University Teaching and Referral Hospital found that male sex was substantially related with depression.(6) (17) (20)

### **3. OBJECTIVE**

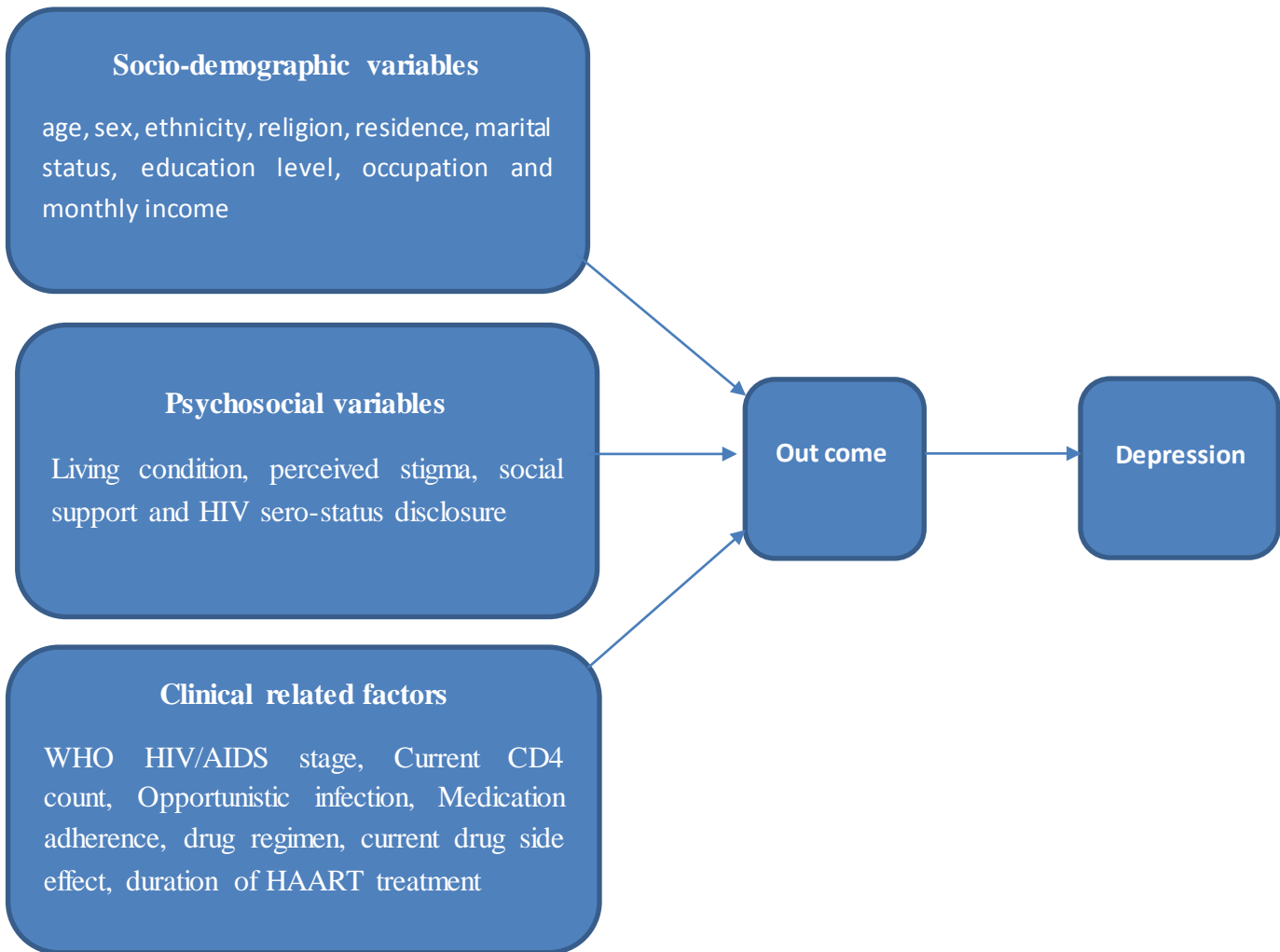
#### **3.1 General Objective**

- To assess the prevalence of depression and associated factors among HIV patients attending ART Clinic at Alert Hospital, from June 1 to July 31, 2023, Addis Ababa, Ethiopia.

#### **3.2 Specific Objectives**

- To determine the prevalence of depression among HIV patients attending ART Clinic at Alert Hospital, from June 1 to July 31, 2023 Addis Ababa, Ethiopia.
- To identify associated factors of depression among HIV patients attending ART Clinic at Alert Hospital, from June 1 to July 31, 2023 Addis Ababa, Ethiopia.

### 3.3 Conceptual frame work



## 4. METHODS

### 4.1 Study area and period:

The study was conducted from June 1 to July 31, 2023 at Alert Hospital which is found in Kolfe Keranio Kifle Ketema, 01 woreda, Addis Ababa, Ethiopia.

### 4.2 Study design:

An institutional cross-sectional research was carried out among HIV patients who visited Alert Hospital in Ethiopia's ART Clinic throughout the study period.

### 4.3 Study population:

All people ( $\geq 18$  years) who received ART follow-up care at Alert Hospital served as the population's source. The convenience sample approach was used to recruit research participants from HIV patients who were visiting ART Clinics during the study period.

### 4.4 Inclusion:

We included in our research PLWHA who were at least eighteen years old and who had been taking ART for at least six months.

### 4.5 Exclusion criteria:

- ✓ HIV patients who were not willing to participate in the study were also eliminated.
- ✓ Those HIV patients who were very sick and did not communicate during the study time were also omitted.

### 4.6 Sample Size & Sample Determination:

Using a single population estimation formula with a 95% confidence interval and 5% margin of error, the sample size was calculated taking into account the 32.9% population proportion of depression prevalence from the Yekatit 12 Hospital Medical College study, as well as a 5% nonresponse rate.(9)

$$N = \frac{(Z_{\alpha/2})^2 * P(1-P)}{d^2}$$

$$N = \frac{(1.96)^2 * 0.329(1-0.329)}{0.05^2}$$

$$(0.05)^2$$

$$N = \frac{3.8416 * 0.329 - 0.108241}{0.0025} = \frac{3.8416 * 0.220759}{0.0025}$$

$$0.0025$$

$$0.0025$$

N=339 + Non response rate of (0.05\*339)

$$N=339+17=356$$

$$N=356$$

### Where

n= the minimum sample size needed

$$P = 0.329$$

q: (1-p)

d = A 5% margin of error is the intended accuracy between the population parameter and sample size.

Z  $\alpha/2$  = standard normal score at 95% confidence interval.

**4.7 Sampling procedure:** During the eight-week data collecting period, research participants who underwent follow-up were selected using the convenience sample approach.

### 4.8 Study Variables:

**4.8.1 Dependent variables:** Depression.

**4.8.2 Independent variables:**

- ✓ Socio-demographic variables (age, sex, ethnicity, religion, residence, marital status, education level, occupation and monthly income).
- ✓ Psychosocial variables (living condition, perceived stigma, social support and HIV sero-status disclosure).

- ✓ Clinically associated criteria include the length of HAART treatment, the existence of opportunistic infection, the current CD4 count, medication adherence, drug regimen, and current drug side effects.

#### **4.9 Data collection procedures and quality assurance:**

A standardized questionnaire was used for in-person interviews, and patient charts were reviewed in order to gather data. For uniformity, the questionnaire was first translated into the Amharic native tongue before being expertly translated back to English. A pretest comprising 5% of the questionnaire was administered to ART patients who had follow-up care at Alert Hospital. Supervisors and data collectors received one-day training. The nine-item Patient Health Questionnaire (PHQ-9) and clinical and behavioral factors, as well as sociodemographic traits, are among the data gathering instruments. Depression was classified based on DSM-5 criteria and a PHQ-9 score of greater or equal 5.(25) Medication Adherence identified as Good adherence - equal to or greater than 95% adherence i.e., missing only 1 out of 30 doses or missing 2 from the 60 doses implies good adherence, Poor adherence - less than 85% adherence, i.e. missing >5 doses out of 30 doses or > 10 doses from 60 doses implies poor adherence.(26) Together with an 11-item HIV stigma scale, the Oslo 3-item social support scale has three categories: "poor support" (3–8), "moderate support" (9–11), and "strong support" (12–14). (20)(26) (27)

#### **4.10 Data management and Data analysis:**

Once certain that the data were consistently complete, these were imported into EPI Data version 3.1 and transferred to SPSS Windows version 27 for further analysis. Logistic regression, both bivariate and multiple, was fitted. Variables with a bivariate analysis  $P$  value  $< 0.25$  were incorporated into the multivariate analysis, and those with a multivariate analysis  $P$  value  $< 0.25$ , 95% CI, were deemed statistically significant.

#### 4.11 Operational Definitions:

➤ **Depression:**

- ✓ The DSM-5 states that depression is a prevalent mental illness that manifests as low energy, a sad mood, a lack of interest or pleasure, a sense of guilt or low self-worth, disturbed sleeping or eating, and difficulty concentrating.(28)
- ✓ Individuals who had a score of five or more were considered to be depressed, whereas those who had a score of less than five were not depressed. The intensity of depressive symptoms is represented by a score of 5–9, 10–14, 15–19, and 20–27, which correspond to mild, moderate, very severe, and extremely severe, respectively.(28)

➤ **HIV-related Perceived Stigma:** Individuals who scored the sum total of 0–20 on a four-point Likert short version with 12 items on the HIV stigma scale were considered not to have perceived stigma, whereas those who scored "≥21" were assumed to have imagined stigma.(27)

➤ **Social Support:**

- ✓ **Poor social support:** defined as when individual scores “3-8 “based on Oslo Social Support Scale.(2)
- ✓ **Moderate social support:** defined as when individual scores “9-11” based on Oslo Social Support Scale.(2)
- ✓ **Strong social support:** defined as when an individual score “12-14 “based on Oslo Social Support Scale.(2)

➤ **Adherence:**

- ✓ **Good adherence** – Defined as missing just one out of every thirty doses or two out of every sixty doses, which is equivalent to or more than 95% adherence.(26)
- ✓ **Fair adherence** – 85–94%; that is, missing 2 to 4 doses out of thirty doses or 4 to 9 doses out of sixty doses.(26)
- ✓ **Poor adherence** – < 85%, or skipping more than 5 doses out of thirty doses or more than ten doses out of sixty doses, indicates poor adherence.(26)

- **Side effects of ART:** In their medical records, respondents disclosed adverse symptoms such as altered appetite, nausea, vomiting, difficulty sleeping, rash, limb numbness, limb pain, exhaustion, changes in body form, hair loss, and changes in eyesight. (26)

**4.12 Ethical Consideration:** The Department of Family Medicine, College of Health Sciences, and AAU all provided ethical approval. Study participants provided their informed verbal agreement after being informed of the study's goal and how confidentiality would be protected by withholding their personal information.

## 5. RESULT

### 5.1 Socio-Demographic Features

Out of 356 samples, information was collected from all participants achieving a 100% response. The greatest number of responders (37.5%) fell between the ages of 30 and 39. A large number of the participants 322(90.4%) were urban dwellers and 234(65.7%) were females and almost one-third 122(34.3%) of them were married. From overall proportion, 71(19.9%) had no formal education. From occupational status of the participants, most 107(30.1%) were Government workers and only few families 36(10.1%) had > 10,000 birr monthly income. Concerning Living condition of participants, few live alone. (Table 1)

**Table 1: Socio-demographic features of clients who were attending ART clinic, Alert Hospital Ethiopia, 2023 (n=356)**

variable	Category	Frequency	Percentage (%)
Age	18-29 years	83	23.3
	30-39 years	133	37.4
	40-49years	92	25.8
	≥50	48	13.5
Sex	Male	122	34.3
	Female	234	65.7
Residence	Urban	322	90.4
	Rural	34	9.6
Marital Status	Married	122	34.3
	Unmarried	107	30.0
	Divorced	64	18.0
	Widowed	63	17.7
Education	No formal education	71	19.9
	Grade 1-8	128	36.0
	Grade 9-12	104	29.2
	College and above	53	14.9

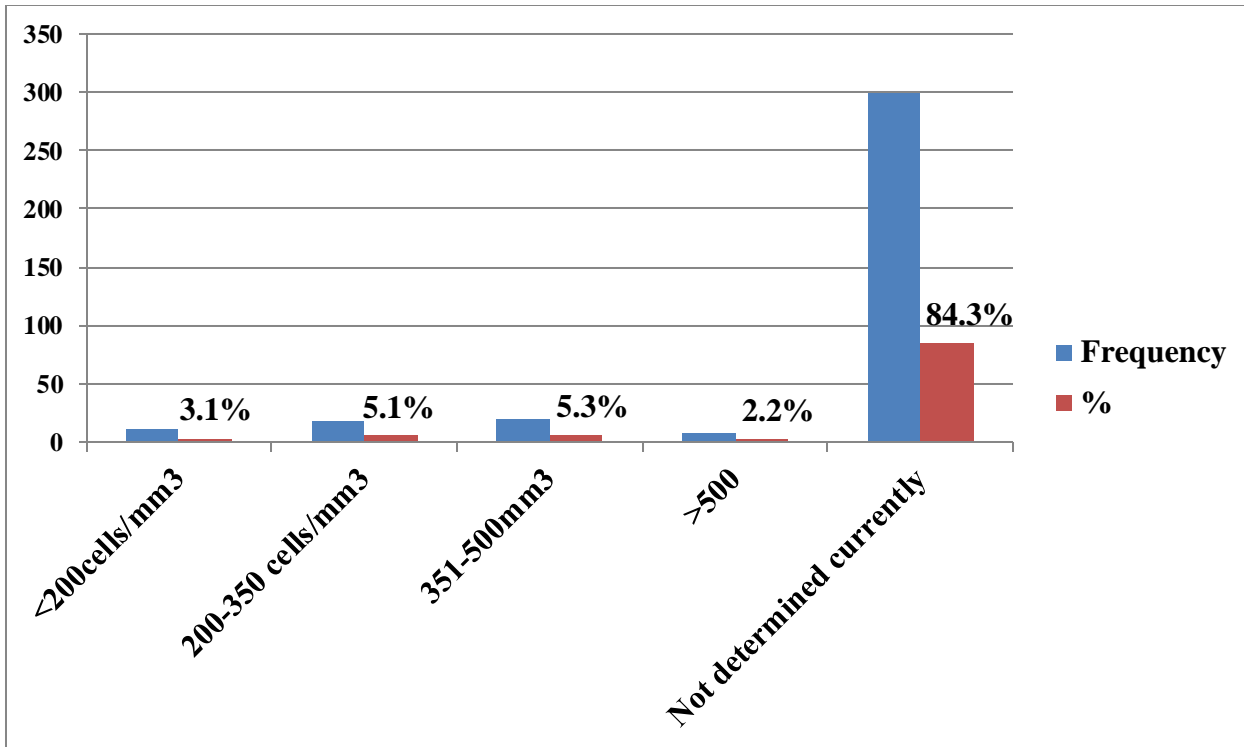
occupation	Government employee	107	30.1
	Private employee	88	24.7
	Merchant	41	11.5
	House wife	46	12.9
	Student	41	11.5
	Others	33	9.3
Income	<5000 birr	213	59.8
	5000-10,000 birr	107	30.1
	>10,000	36	10.1
Living Condition	With Family	199	55.9
	Alone	157	44.1

**5.2 Clinical and psychosocial features of Respondents:** Majority respondents 309 (86.8%) were at Clinical HIV stage T1 and T2 and few of them 16 (4.5%) had been taking HAART for the past 20 years. Majority of participants 300 (84.3%) current CD4 s status was not determined and only few of them 7(2%) experienced opportunistic infection in the past. Almost two-third 222 (62.6%) of them had good drug adherence. Few 47 (13.2%) of the participants take medications other than HAART. More than half 200 (56.2%) of participants exposed their HIV status to other person and most of them 197(55.3%) had strong social support, 219 (61.5%) experienced perceived HIV stigma.(table 2)

**Table 2: Distribution of Clinical and psychosocial factors among people living with HIV/AIDS at Alert Hospital,2023**

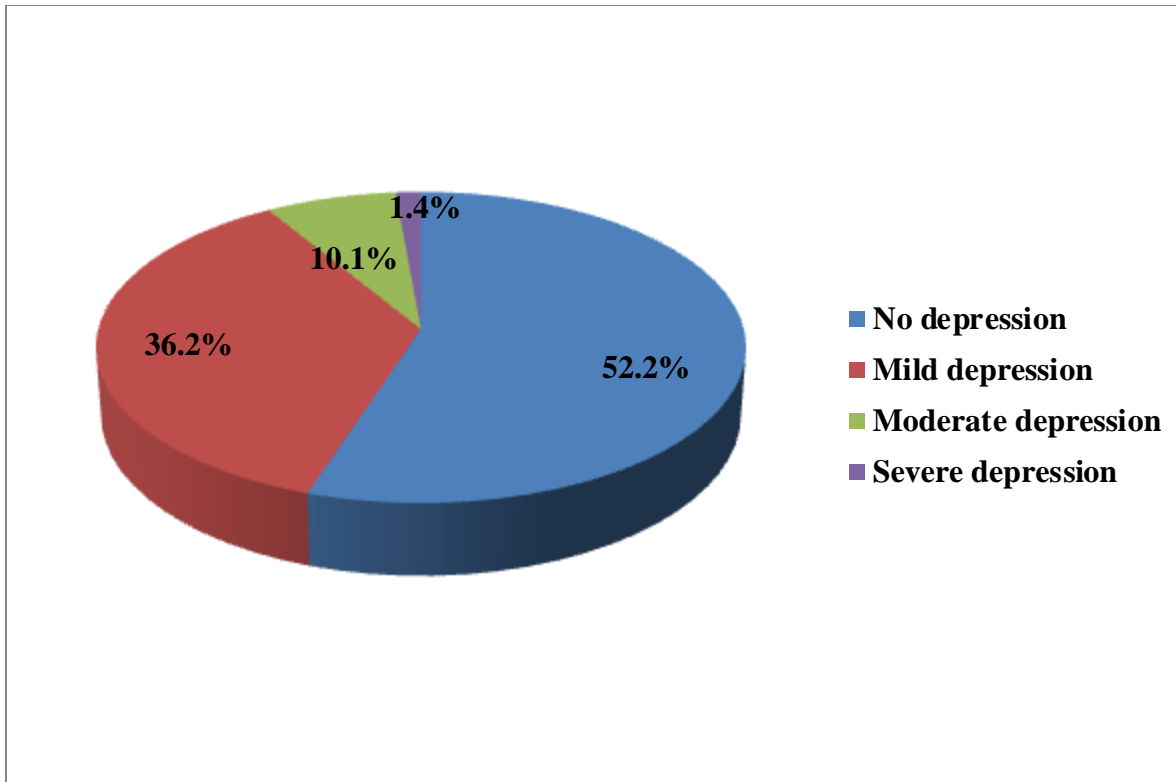
<b>variable</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Personal Hx of depression	Yes	5	1.4
	No	351	98.6
Current WHO T-Stage	Stage T1 and T2	309	86.8
	Stage T3 and T4	47	13.2
HAART treatment level	DTG based 1st Line	321	90.2
	Non-DTG based 1 <sup>st</sup> Line	28	7.9
	2nd Line	7	2.0
Duration of Treatment	< 5years	121	34.0
	5 years -10 years	150	42.1
	11 years -20 years	69	19.4
	>20 years	16	4.5
HAART Side effect	Appetite change & fatigue	9	2.5
	Nausea or vomiting	5	1.4
	Difficult sleeping, pain and numbness of limbs	2	0.6
	Rashes and body shape change	2	0.6
Drug adherence	Good Adherence	222	62.6
	Poor Adherence	133	37.4
Taking other Medication	Yes	47	13.20
	No	309	86.80
Which Other Medication	For Diabetics	5	1.4
	For Hypertension	36	10.1
	For TB	5	1.4
	For Other illness	1	0.3

Opportunistic infection	yes	7	2.0
	No	349	98.0
Type of opportunistic infection	Respiratory	1	0.3
	CNS	3	0.8
	Mucocutaneous	3	0.8
HIV disclosure status	yes	200	56.18
	No	156	43.82
Current Alcohol Use	Yes	41	11.50
	No	315	88.50
Kehat use	Yes	8	2.25
	No	348	97.75
Cigarette smoking	Yes	4	1.12
	No	352	98.88
Social Support	Strong Social Support	167	46.9
	Poor Social Support	189	53.1
Perceived HIV Stigma	Yes	219	61.5
	No	137	38.5



**Figure 1: Distribution of current CD4 Status of the participants**

**5.3 Prevalence of depression among PLWH:** Among adult PLWH, the prevalence of depression was 47.8% (95% CI: 45.41 - 50.19). Out of 356 respondents, 170 (47.8%) experienced depression based on the PHQ-9 cut point of  $\geq 5$ .



**Figure 2: PHQ-9 Score of the of study participants**

**5.4 Factors associated with Depression PWLH:** Each independent variable's relationship to depression was evaluated using binary logistic regression. Residence, marital status, family income, treatment adherence, WHO stage, alcohol use, social support, and HIV-related stigma were all linked to depressed symptoms at a p-value of less than 0.25, according to the results of a bivariate logistic regression analysis. In the bivariate analysis, variables with a p value of less than 0.25 were taken into consideration as potential candidates for the multivariable regression model. Alcohol use, social support, HIV perceived stigma, and WHO stages were all substantially correlated with depressive symptoms in the multivariable logistic regression, with a p value of less than 0.25 serving as the cutoff.

The odd of developing depression among PLWHA who currently use alcohol was 2 times higher when compared to those who had no alcohol use [AOR= 1.959; 95% CI: 1.008, 3.808]. Individuals who experienced perceived HIV Stigma were affected two folds higher odd of developing depressive symptoms when compared with those who did not have perceived HIV Stigma [AOR=1.978% CI: 1.252, 3.124]. Depression was 1.5 times higher [AOR= 1.500 95% CI: (1.252, 3.124)] in participants who had poor social support as compared with those who have strong social support. As compared with

Stage T1 & TII individuals with Stage TIII & TIV were 0.4 times less likely developed Depression [AOR=0.585(0.331, 1.034)]. (Table 3)

**Table 3: Factors associated with depression among HIV clients**

VARIABLE	Depression		COR(95%CI)	AOR(95%CI)
	Yes	No		
WHO T-Stage				
Stage I & II	144(44.45%)	165(46.34%)	1	1
Stage III & IV	26(7.30%)	21(5.90%)	1.792 (1.026, 3.127)*	0.585(0.331,1.034)*
Drinking Alcohol				
Yes	25(7.02%)	16(4.49%)	1	1
No	45(12.64%)	170(47.75%)	2.095 (1.090, 4.027)*	1.959(1.008,3.808)*
Social support status				
Good Social support	64(%)	103(28.93%)	1	1
Poor social support	106(%)	83(23.31%)	1.295( .843, 1.989)*	1.500(0.951, 0.787)*
HIV perceived stigma				
Yes	115(%)	104 (29.21%)	1	1
No	55(%)	82(23.03%)	1.779(1.152, 2.747)*	1.978(1.252, 3.124)*

\*Indicates P-value  $\leq 0.25$ , is said to be statistically significant.

## 6. DISCUSSION

The prevalence of depression among PLWHA was observed to be 47.8% [95% CI (45.41, 50.19)] in this study. This finding is consistent with the research carried out in the teaching and referral hospital of Wolaita Sodo University, Hawassa, Harrar and Nekemte Town; show that 50.5%, 48.6%, 45.8% and 44.9% respectively.(7)(14)(11)(16) This might be related to similar study population, design and study instrument used. In contrary to this study finding, lower prevalence rates were reported at Debre Birhan Hospital, Yekatit 12 hospital medical colleges, at Jimma University Medical Center and Harrar show that 38.94%, 32.9 % and 31% & 31% respectively(18)(19)(20)(21). This discrepancy might be due to deference in depression assessment instrument they used Hamilton depression scale and Hospital anxiety and depression scale respectively. Higher prevalence rates were reported in China, India and Brazil that showed 53.3%, 53.3% and 56%, respectively. Another studies done in at different periods in India revealed that the prevalence of depression 58.75%, 61%.and 67.3%. These finding may be due to difference in study population, socio demographic characteristics and sample size. (9)(14)

In this study, PLWHA who currently use alcohol were 2 times higher to experience depression in comparison to individuals without current alcohol use. This finding is similar with research conducted in Gimbi,Pakistan.(3)(23)This might be due to substance use behavior is the risk for depressive symptoms.

Individuals who experienced perceived HIV Stigma were affected two times higher to experience depression as compared with those without perceived HIV Stigma. This finding is similar with research conducted in Wolaita Sodo Hospital, Alert Hospital, Dessie referral Hospital and Harar town and public health facilities. (6) (17) (18)(20) This could be due to persons living with HIV may internalize the stigma and anticipate stigmatizing encounters as a result of perceived HIV-related stigma in the community, which can have a negative impact on their health and psychosocial outcomes like depressive symptoms. Individuals who had poor social support were 1.5 times more affected with depression as compared with those who have strong social support. This study is similar with research conducted in Hawassa, Chaina and Pakistan.(4) (11) (23) this might be because depression can result from social isolation brought on by a lack of social support. As compared status of Stage T1 & TII, individuals with Stage TIII & TIV were 0.4 times less likely to develop Depressive symptoms. This finding is contrary to studies done in Wolaita Sodo Hospital and Chaina even though those studies recommended a need for a comprehensive study that can aggregate previous studies for decision makers. (4)(18)

Other factors, those of sociodemographic characteristics, clinical and behavioral conditions like CD4 count, opportunistic infections and medication adherences were not statistically significant in this study which was associated in other studies; Hawassa, Dessie and Chaina.(4)(8)(11)

## 7. CONCLUSION AND RECOMMENDATION

### 7.1 Conclusion:

- The purpose of this study was to ascertain the prevalence of depression and related variables among HIV/AIDS patients who were seen at Alert Hospital. In this research, depression affected over half of the ART clinic's patients. The WHO stages of alcohol use, inadequate social support, and HIV-related stigma were found to be substantially linked to depressed symptoms.

### 7.2 Recommendation:

- Although the burden of depression is high among HIV-positive patients, it is underdiagnosed and undertreated in the ART clinic. Hence, institutions working on HIV programs should address these factors by screening using PHQ-9 Depression assessment tool and manage depression among HIV positive patients.
- Despite the significant prevalence of depression among HIV-positive patients, the ART clinic underdiagnosed and undertreats the condition. Therefore, Organizations implementing HIV programs have to take these variables into consideration by managing depression in HIV-positive patients and conducting screenings with the PHQ-9 Depression Assessment Tool.
- To obtain better results, researchers should carry out prospective design studies.

### 7.3 Limitation of the study:

- A single hospital was used as the site of this investigation. Therefore, extra caution is advised when extrapolating the findings to other contexts and the conclusion cannot be applied to Ethiopians.
- There might be issue of Social desirability response bias, especially to substance related questions.
- Secondary data problems: Incomplete records and missed medical Charts of the data were another limitation to access important variables from patient chart.

### 7.4 Strength: Applying currently recommended PHQ-9 Depression assessment tool and other scales despite tight Schedule for the study.

## 8. REFERENCES

1. Tran BX, Ho RCM, Ho CSH, Latkin CA, Phan HT, Ha GH, et al. Depression among Patients with HIV / AIDS : Research Development and Effective Interventions ( GAP RESEARCH ). 2019.
2. Weldesenbet AB, Kebede SA, Tusa BS. The Effect of Poor Social Support on Depression among HIV / AIDS Patients in Ethiopia : A Systematic Review and Meta-Analysis. 2020;2020.
3. Abadiga M. Depression and its associated factors among HIV / AIDS patients attending ART clinics at Gimbi General hospital , West Ethiopia , 2018. BMC Res Notes [Internet]. 2019;1–8. Available from: <https://doi.org/10.1186/s13104-019-4553-0>
4. Tan T, Zhou C, Lu R, Chen C, Bai C, Li L, et al. Depression and Associated Factors Among Men Living with HIV / AIDS Aged 50 Years and Over in Chongqing , China. 2022;(September):2033–40.
5. Mirkena Y, Reta MM, Haile K, Nassir Z, Sisay MM. Prevalence of depression and associated factors among older adults at ambo town , Oromia region , Ethiopia. 2018;1–7.
6. Id YD, Id BK, Id MY, Arefaynie M. Depressive symptoms and associated factors among HIV positive patients attending public health facilities of Dessie town: A cross- sectional study. 2021;1–12. Available from: <http://dx.doi.org/10.1371/journal.pone.0255824>
7. Abdisa E, Tolesa T, Abadiga M. Prevalence of Depressive Symptoms and Its Associated Factors among People Living with HIV Attending Public Hospitals of Nekemte Town , Western Ethiopia , 2021. 2021;2021.
8. Wollo S. Prevalence of depression and associated factors among HIV / AIDS patients attending antiretroviral therapy clinic at Dessie referral. Int J Ment Health Syst [Internet]. 2020;1–8. Available from: <https://doi.org/10.1186/s13033-020-00389-0>
9. Wondatir BC. Prevalence and associated factors of depression among hiv positive clients at yekatit 12 hospital medical college , addis ababa , ethiopia. 2018;(2):38–45.

10. Nyongesa MK, Mwangi P, Wanjala SW, Mutua AM, Newton CRJC. Prevalence and correlates of depressive symptoms among adults living with HIV in rural Kilifi , Kenya. 2019;1–10.
11. 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* [Internet]. 2018;17(1):4–9. Available from: <https://doi.org/10.1186/s12991-018-0215-1>
12. Amha H, Denekew B, Asnakew S. Depressive symptoms and associated factors among adults attending antiretroviral therapy clinic in Debre Markos comprehensive specialized. 2022;
13. Amare T, Getinet W, Shumet S, Asrat B. Prevalence and Associated Factors of Depression among PLHIV in Ethiopia : Systematic Review and Meta-Analysis , 2017. 2018;2018.
14. Hospital R. Depression and Associated Factors Among Adult HIV / AIDS Patients Attending Antiretroviral Therapy at Wolaita Sodo University Teaching and. 2020;707–15.
15. Adeoti AO, Dada MU, Fadare JO. Medical Reports and Case Studies Prevalence of Depression and Anxiety Disorders in People Living with HIV / AIDS in a Tertiary Hospital in South Western Nigeria. 2018;3(1):3–7.
16. Engda AS, Belete H, Tilahun FA, Demeke SM, Engidaw NA, Wubetu AD, et al. Prevalence of Depression and Associated Factors Among Normal and Overweight Reproductive Age Women , Ethiopia : Community-Based Comparative Cross-Sectional Study. 2021;337–47.
17. Desta F, Tasew A, Tekalegn Y, Zenbaba D, Sahiledengle B, Assefa T, et al. Prevalence of depression and associated factors among people living with HIV / AIDS in public hospitals of Southeast Ethiopia. *BMC Psychiatry* [Internet]. 2022;1–10. Available from: <https://doi.org/10.1186/s12888-022-04205-6>
18. Tesfaw G, Ayano G, Awoke T, Assefa D, Birhanu Z, Miheretie G. Prevalence and correlates of depression and anxiety among patients with HIV on- follow up at Alert Hospital , Addis Ababa ,. *BMC Psychiatry* [Internet]. 2016;1–7. Available from: <http://dx.doi.org/10.1186/s12888-016-1037-9>
19. Asmare Eshetu D, Meseret S. 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.
20. Dorsisa B, Ahimed G, Anand S, Bekela T. Prevalence and Factors Associated with Depression among HIV / AIDS-Infected Patients Attending ART Clinic at Jimma University Medical Center , Jimma , Southwest Ethiopia. 2020;2020.
  21. Motumma A, Negesa L, Hunduma G, Abdeta T. Prevalence and associated factors of common mental disorders among adult patients attending HIV follow up service in Harar town , Eastern Ethiopia : a cross- sectional study. 2019;1–9.
  22. Checa A, Navas E, Valencia V, Alcívar J. Depression is associated with CD4 levels in people living with HIV in Ecuador. 2021;22(6):224–8.
  23. Junaid K, Ali H, Khan AA, Khan TA, Khan AA. Prevalence and Associated Factors of Depression among Patients with HIV / AIDS in Lahore , Pakistan: Cross-Sectional Study Prevalence and Associated Factors of Depression among Patients with HIV / AIDS in Lahore , Pakistan: Cross-Sectional Study. 2022;
  24. Agyemang SO, Ninomni J, Bennin L, Agyare E, Gyimah L, Senya K, et al. Prevalence and associations of depression , anxiety , and stress among people living with HIV: A hospital - based analytical cross - sectional study. 2022;(June):1–10.
  25. Patient health questionnaire ( PHQ-9 ) name : date : Several More than Nearly half the every day. 2005;9–10.
  26. Ethiopia ministry of health. National Comprehensive HIV Prevention , Care and Treatment Training for Health care Providers Participant Manual. ART Guidel. 2020;2021(May):256–7.
  27. Reinius M, Wettergren L, Wiklander M, Svedhem V, Ekström AM, Eriksson LE. Development of a 12-item short version of the HIV stigma scale. 2017;1–10.
  28. Mufson L, Morrison C, Shea E, Kluisza L, Robbins R, Chen Y, et al. Screening for depression with the PHQ-9 in young adults affected by HIV. 2023;(646):276–82.

## ANNEXES

### ANNEX 1: INFORMATION SHEET AND CONSENT FORM IN ENGLISH

Addis Ababa University, College of Health Sciences, Department of Family Medicine

Hello! My name is .....I am Family Medicine resident in AAU, College of Health Sciences, Department of Family Medicine . I am conducting a study on depression prevalence among HIV patients at Alert Hospital in Addis Ababa, Ethiopia, requiring participants to participate in 15-20 minute interviews to provide valuable insights.

Confidentiality of information is guaranteed, and questions can be dropped at any time. For questions or updates on the study, contact the principal investigator. Feeling uncomfortable with questions? Drop them anytime.

Dr Girma Daniel Bushiso; Mob. : +251-911-77-04-8 E-mail : <<bushisogirma@gmail.com >>

Would you willing to participate in this study?

Yes.....continue the next page

No.....skip to the next participant

**Consent form:** I willingly give my permission to participate in this study after being fully informed about its goals and advantages.

Respondent's signature\_\_\_\_\_

Date of interview: \_\_\_\_\_ Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

Interviewer Name\_\_\_\_\_Signature\_\_\_\_\_Date\_\_\_\_\_

ANNEX 2: Checklist for collection of data on depression and related variables

**Instructions:** Tick on the box from the list of options below

**A. Sociodemographic Information**

101. Participant sex

0. Male

1. Female

102. Participant Age

0. 18-29

2. 40-49

1. 30-39

3.  $\geq 50$

103. Religion

0. Orthodox

2. Protestant

1. Muslim

3. Others

104. Residence

0. Urban

1. Rural

105. Educational status of the Participant

1. No formal education

3. Grade 9-12

2. Grade 1-8

4. College and above

106. Marriage status of the participant

1. Married

3. Divorced

2. Unmarried

4. Widowed

107. Occupation

1. Government Employ

3. Merchant

5. Student

2. Private employ

4. Housewife

6. Other

108. Household current net monthly income

1. < 5000 Birr

2. 5,000-10,000 Birr

3. >10,000Birr

109. Living Condition

0. With family

1. Alone

**B. Clinical, Psycho-social and behavioral Characteristics**

201. Personal or family Hx of depression

- 0. Yes
- 1. No

202. HAART treatment level

- 1. DTG based 1<sup>st</sup> line Rx
- 2. Non DTG based 1<sup>st</sup> line Rx
- 3. Second line Rx

203. Duration of HAART treatment

- 1. < 5yrs
- 2. 5 yr-10 yrs
- 3. 11yrs-20 yrs
- 4. >20 yrs

204. ART Pills taken per day

- 1. one
- 2. two
- 3. three

205. Frequency of ART drug

- 0. Once
- 1. Twice

206. Presence of ART drug side effect

- 0. Yes
- 1. No

207. If yes, what side effect

- 1. Appetite changes and fatigue
- 2. Nausea or vomiting
- 3. Difficulty sleeping, pain and numbness in the limbs
- 4. Rashes and body shape changes
- 5. Others & specify

208. Medication Adherence

- 1. Missed  $\leq 2$  doses of 30 doses or  $\leq 3$  doses of 60 doses
- 2. 4-8 doses missed per month
- 3.  $\geq 9$  doses missed per month

209. Taking Medication other than ART

- 1. Yes
- 2. No

210. If yes, for which disease?

- 1. For diabetics
- 2. For Hypertension
- 3. For TB
- 4. Others

211. Current CD4 Count

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| 1. < 200 cells/mm <sup>3</sup>   | 4. >500 cells/mm <sup>3</sup> Not |
| 2. 200-350 cells/mm <sup>3</sup> | 5. Not determined currently       |
| 3. 351-500 cells/mm <sup>3</sup> |                                   |

212. Current WHO stage/T- stage

- |           |             |
|-----------|-------------|
| 0. I & II | 1. III & IV |
|-----------|-------------|

213. Presence of Opportunistic infections currently

- |        |       |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

214. If yes, which Opportunistic infection?

- |                |                     |
|----------------|---------------------|
| 1. Respiratory | 3. Gastrointestinal |
| 2. CNS         | 4. Others           |

215. HIV serostats disclosure to any person

- |        |       |
|--------|-------|
| 0. Yes | 1. No |
|--------|-------|

216. Currently drinking Alcohol

- |        |       |
|--------|-------|
| 0. Yes | 1. No |
|--------|-------|

217. If yes, which type of alcohol?

- |                |         |        |
|----------------|---------|--------|
| 1. Tella       | 3. Beer | 5. Tej |
| 2. Local Areke | 4. Wine |        |

218. How often you drink alcohol?

- |                       |                              |
|-----------------------|------------------------------|
| 1. Every day          | 3. At least once per tonight |
| 2. At least once/week | 4. Occasionally              |

219. Currently chew chat

- |        |       |
|--------|-------|
| 0. Yes | 1. No |
|--------|-------|

220. How often you chew kehat?

- |                           |                            |
|---------------------------|----------------------------|
| 1. Every day              | 3. At least once fortnight |
| 2. At least once per week | 4. Occasional              |

221. Currently Smoke Cigarettes

- |        |       |
|--------|-------|
| 0. Yes | 1. No |
|--------|-------|

222.How often do you smoke?

1. Every day
2. At least once per week
3. At least once forth per night
4. Occasional

223.How many cigarettes you smoke per day?

1. < ½ packet
2. ½-1 packet daily
3. > 1 packet/day

**C. Patient Health Questionnaire-9 format for assessment of depressive symptoms among HIV patients**

	Over the last 2 weeks, how often have you been bothered by any of the following problems? (use "√" to indicate your answer)	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
301	Little interest or pleasure in doing things				
302	Feeling down, depressed, or hopeless				
303	Trouble falling or staying asleep, or sleeping too much				
304	Feeling tired or having little energy				
305	Poor appetite or overeating				
306	Feeling bad about yourself or that you are a failure or have let yourself or your family down				
307	Trouble concentrating on things, such as reading the newspaper or watching television				
308	Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual				
309	Thoughts that you would be better off dead, or of hurting yourself				
<b>Total</b>					

**D. Oslo Social Support Scale (OSSS-3) format for assessment of depressive symptoms among HIV patients**

401	OSLO-1	How many people are so close to you that you count on them to have great personal problems?	<ol style="list-style-type: none"> <li>1. 'None'</li> <li>2. '1-2'</li> <li>3. '3-5'</li> <li>4. '5+'</li> </ol>
402	OSLO-2	How much interest and concern do people show in what you do?	<ol style="list-style-type: none"> <li>1 'none'</li> <li>2 Little</li> <li>3 'Uncertain'</li> <li>4 'Some</li> <li>5 'a lot'</li> </ol>
403	OSLO-3	How easy is it to get practical help from neighbors if you should need it?	<ol style="list-style-type: none"> <li>1. 'very difficult</li> <li>2. 'difficult</li> <li>3. 'Possible'</li> <li>4. 'Easy'</li> <li>5. 'Very Easy'</li> </ol>
<b>Total</b>			

**E. The short version with 12 items HIV stigma scale to identify perceived HIV stigma**

S.No	A four-point Likert scale questions	(1)Strongly disagree	(2) Disagree	(3)Agree	(4)Strongly agree
501	<b>Personalized stigma</b>				
	1. People may avoid touching me if they know I have HIV				
	2. People I are about stopped caring after learning I have HIV				
	3. Have lost friends by telling them I have HIV				
502	<b>Disclosure concerns</b>				
	1. Telling someone I have HIV is risky				
	2. I work hard to keep my HIV a secret				
	3. I am very careful whom I tell that I have HIV				
503	<b>Concerns about public attitude</b>				
	1. People with HIV are treated like outcasts				
	2. Most people believe that a person who has HIV is dirty				
	3. Most are uncomfortable around someone with HIV				
504	<b>Negative self-image</b>				
	1. I feel guilty because I have HIV				
	2. People’s attitudes about HIV make me feel worse about my self				
	3. I feel I’m not as good as others because I have HIV				
<b>Total</b>					

ANNEX 3: የመረጃ መሰብሰቢያ እና የፍቃደኝነት ቅጽ

አዲስ አበባ ዩኒቨርሲቲ፣ የጤና ሳይንስ ኮሌጅ፣ የቤተሰብ ሕክምና ክፍል

ሀሎ! ስሜ .....ይባላል። በአዲስ አበባ ዩኒቨርሲቲ ፣ የጤና ሳይንስ ኮሌጅ፣ የቤተሰብ ሕክምና ክፍል ሬዚደንት ነኝ ። በአለርት ሆስፒታል፣ በኤች አይቪ ታማሚዎች ላይ ስለ ድብርት ስርጭት እና ተያያዥ ሁኔታዎች ላይ ጥናት እያደረግሁ ነው።

ለጥናቱ ተመርጠዋል። ትብብር በማድረግ እውነተኛ ምላሽ እንደምሰጡ ተስፋ በማድረግ በአክብሮት እጠይቃለሁ። እንዲሁም ስለ ጥናቱ ላብራሪ ትኩረት እንዲሰጡኝ እጠይቃለሁ።ጥናቱ ቢቃለ መጠይቆች የሚካሄድ ሲሆን በዚህ ጥናት ውስጥ እኛን ለመርዳት ከ15-20 ደቂቃ ያህል ጊዜያችሁ ጥቂት ይጠየቃሉ።

ስሞት በዚህ ቅጽ አይጻፍም እና ከምትነግሩን ማንኛውም መረጃ ጋር በተያያዘ ፈጽሞ ሌላ ጥቅም ላይ ሊውል አይችልም። ሁሉም በእርስዎ የተሰጡ መረጃዎች በጥብቅ ሚስጥራዊ ይሆናሉ። በጥያቄው ላይ ምቹት ካልተሰማዎት በፈለጉት ጊዜ መተው መብትዎ ነው። ይህንን ጥናት በተመለከተ ጥያቄዎች ካሉዎት ወይም ከተጠናቀቀ በኋላ ውጤቱን እንዲያውቁት ከፈለጉ፣ እባክዎን ዋና መርማሪውን ለማነጋገር ነፃነት ይሰጣዎታል።

ዶ/ር ግርማ ዳንኤል ቡሽሶ; ሞባይል: +251-911-77-04-8 ኢሜይል: << bushisogirma@gmail.com >>

በዚህ ጥናት ውስጥ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ.....የሚቀጥለውን ገጽ ይቀጥሉ

አይ.....ወደ ቀጣዩ ተሳታፊ ዝለል

የፍቃድ ቅፅ፡ስለ ጥናቱ ዓላማዎች እና ጥቅሞች በደንብ ከተብራራሁ እና ከተረዳሁ በኋላ በዚህ ጥናት ለመሳተፍ በፈቃዴ ተስማምቻለሁ።

የተጠሪ ፊርማ \_\_\_\_\_

የቃለ መጠይቁ ቀን፡- \_\_\_\_\_ የተጀመረበት ጊዜ፡- \_\_\_\_\_ የተጠናቀቀበት ጊዜ፡- \_\_\_\_\_

የጠያቂው ስም \_\_\_\_\_ ፊርማ \_\_\_\_\_ ቀን \_\_\_\_\_

ANNEX 4: የድብርት ስርጭት እና ተያያዥ ምክንያቶች መረጃን ለመሰብሰብ የማረጋገጫ ዝርዝር መመሪያዎች፡-ከታች ካሉት አማራጮች ዝርዝር ውስጥ በሳጥኑ ላይ ምልክት ያድርጉ

**A. የስነ-ምህበራዊና ስነ-ሕዝብ መረጃ**

101. የተሳታፊው ጾታ

- 0. ወንድ 1. ሴት

102. የተሳታፊው ዕድሜ

- 1. 18-29 3. 40-49
- 2. 30-39 4. ≥50

103. ሃይማኖት

- 1. ኦርቶዶክስ 3. ፕሮቴስታንት
- 2. ሙስሊም 4. ሌሎች

104.

104. መኖሪያ

- 0. ከተማ 1. ገጠር

105. የተሳታፊው የትምህርት ደረጃ

- 1. መደበኛ ትምህርት የለም 3. 9-12 ክፍል
- 2. ከ1-8ኛ ክፍል 4. ኮሌጅ እና ከዚያ በላይ

106. የጋብቻ ሁኔታ?

- 1. ያገባ 3. የተፋታ/ች
- 2. ያላገባ 4. ባል የሞተባት

107. ሥራ

- 1. የመንግስት ሰራተኛ 3. ነጋዴ 5. ተማሪ
- 2. የግል ተቀጣሪ 4. የቤት እመቤት 6. ሌሎች

108. የቤተሰብ ወቅታዊ የተጣራ ወርሃዊ ገቢ

- 1. < 5000 ብር 2. 5,000-10,000 ብር 3. 10,000 ብር በላይ

109. የኑሮ ሁኔታ

- o. ከቤተሰብ ጋር 1. ብቻውን

**B. ከሊኒካዊ, ስነ-አዕምሮ የምህበራዊ እና ግለ-ባህሪያት**

201. የግል ወይም የቤተሰብ የመንፈስ ጭንቀት ታሪክ

- 0. አዎ 1. አይ

202. የ HAART ሕክምና ደረጃ

- 1. በዲቲጂ ላይ የተመሰረተ 1ኛ መስመር ህክምና 2. በDTG ላይ የተመሰረተ 1ኛ መስመር ህክምና
- 3. ሁለተኛ መስመር ህክምና

203.የ HAART ሕክምና ቆይታ

- 1. < 5 አመት
- 2. 5 አመት - 10 አመት
- 3. 11 አመት - 20 አመት
- 4. > 20 አመት

204.በቀን የሚወሰዱ የ ART ክሊኒካል ብዛት

- 1. አንድ
- 2. ሁለት
- 3. ሶስት

205.የ ART መድሃኒት መጠን ድግግሞሽ

- 1. አንድ ጊዜ
- 2. ሁለት ጊዜ

206.የ ART መድሃኒት የጎንዮሽ ጉዳት መኖር

- 0. አዎ
- 1. አይ

207.አዎ ከሆነ, ምን የጎንዮሽ ጉዳት

- 1. የምግብ ፍላጎት ለውጦች እና ድካም
- 2. ማቅለሽለሽ ወይም ማስታወክ
- 3. በቂ እንቅልፍ ማጣት ፣ በእግሮች ውስጥ ህመም እና የመደንዘዝ ስሜት
- 4. ሽፍታ እና የሰውነት ቅርጽ ይለወጣል
- 5. ሌሎች & ይግለጹ

208.የመድሃኒት አወሳሰድ

- 1. ከ 30 ደብዳቤ ≤ 2 ደብዳቤ ያመለጠ ወይም ደብዳቤ ከ60 ደብዳቤ ≤ 3 ያመለጠ
- 2. በወር 4-8 ደብዳቤ ቀርቷል
- 3. በወር ≥ 9 ደብዳቤ ቀርቷል።

209.ከ ART ሌላ መድሃኒት መውሰድ

- 0. አዎ
- 1. አይ

210.አዎ ከሆነ ለየትኛው በሽታ?

- 1. ለስኳር ህመምተኞች
- 2. ለከፍተኛ የደም ግፊት
- 3. ለቲቢ
- 4. ሌሎች

211.የአሁኑ የሴ.ዲ 4 ብዛት

- 1. < 200 ሕዋሳት / ሚ.ሜ 3
- 2. 200-350 ሕዋሳት / ሚ.ሜ 3
- 3. 351-500 ሕዋሳት / ሚ.ሜ 3
- 4. >500 ሕዋሳት/ሚ.ሜ 3
- 5. በአሁኑ ጊዜ አልተወሰነም።

212.የአሁኑ የዓለም ጤና ድርጅት ደረጃ/T- ደረጃ

- 0. I & II
- 1. III & IV

213.በአሁኑ ጊዜ የአፖርቹኒስቲክ ኢንፌክሽኖች መኖር

- 0. አዎ
- 1. አይ

214.አዎ ከሆነ፣ የትኛው የአጋጣሚ ኢንፌክሽን?

- 1. የመተንፈሻ አካላት
- 2. አንጎል
- 3. የጨጓራና ትራክት
- 4. ሌሎች

215.የኤች አይቪ በደም መኖሩን መረጃ ለማንኛውም ሰው ማሳወቅ

- 0. አዎ
- 1. አይ

216.በአሁኑ ጊዜ አልኮል መጠጣት

- 0. አዎ
- 1. አይ

217.አዎ ከሆነ፣ የትኛው የአልኮል አይነት?

- 1. ጠላ
- 2. አካባቢያዊ Areke
- 3. ቢራ
- 4. ወይን
- 5. ጠጅ

218.ምን ያህል ጊዜ አልኮል ትጠጣለህ?

- 1. በየቀኑ
- 2. ቢያንስ በሳምንት አንድ ጊዜ
- 3. ማታ ቢያንስ አንድ ጊዜ
- 4. አልፎ አልፎ

219.በአሁኑ ጊዜ ጫት ማኘክ

- 0. አዎ
- 1. አይ

220.ምን ያህል ጊዜ ነው kehat ያኝኩት?

- 1. በየቀኑ
- 2. ቢያንስ በሳምንት አንድ ጊዜ
- 3. ቢያንስ ማታ አንድ ጊዜ
- 4. አልፎ አልፎ

221.በአሁኑ ጊዜ ሲጋራ አጨስ

- 0. አዎ
- 1. አይ

222.ምን ያህል ጊዜ ታጨሳለህ?

- 1. በየቀኑ
- 2. ቢያንስ በሳምንት አንድ ጊዜ
- 3. ቢያንስ ምሽት አንድ ጊዜ
- 4. አልፎ አልፎ

223.በቀን ስንት ሲጋራ ያጨሳሉ?

- 1.  $< \frac{1}{2}$  ጥቅል
- 2. በቀን  $\frac{1}{2}$ -1 ፓኬት
- 3.  $> 1$  ፓኬት / ቀን

**C. የታካሚ ፒ.ኤች.ኤም-9 ቅርፅ በአለርት ሆስፒታል ART ክሊኒክ በሚከታተሉ የኤችአይቪ በሽተኞች መካከል ያለውን የመንፈስ ጭንቀት ለመገምገም፣ 2023**

	ባለፉት 2 ሳምንታት ውስጥ ከሚከተሉት ችግሮች ውስጥ ምን ያህል ጊዜ አስጨንቀው ነበር? (መልስዎን ለማመልከት "✓" ይጠቀሙ)	አይደለም (0)	ብዙ ቀናት (1)	ከግማሽ ቀናት በላይ (2)	በየቀኑ ማለት ይቻላል (3)
301	ነገሮችን ለመስራት ትንሽ ፍላጎት ወይም ደስታ				
302	የመንፈስ ጭንቀት፣ ወይም የተስፋ መቁረጥ ስሜት				
303	የመውደቅ ወይም የመተናኘት ችግር፣ ወይም በጣም ሙዚቃ መተናኘት				
304	የድካም ስሜት ወይም ትንሽ ጉልበት				
305	ደካማ የምግብ ፍላጎት ወይም ከመጠን በላይ ሙብላት				
306	ስለራስዎ መጥፎ ስሜት ወይም ውድቀት እንደሆነ ወይም እራስዎን ወይም ቤተሰብዎን አሳጥተዋል				
307	እንደ ጋዜጣ ማንበብ ወይም ቴሌቪዥን መመልከት ባሉ ነገሮች ላይ ማተኮር ላይ ችግር				
308	ሌሎች ሰዎች ሊገነዘቡት በሚችሉት መንቀሳቀስ ወይም መናገር። ወይም ተቃራኒው በጣም ጨካኝ ወይም እረፍት የሌለበት ከመሆኑ የተነሳ ከወትሮው በበለጠ ብዙ እየተንቀሳቀሱ ነው።				
309	ብተሞተ ይሳላል ወይም እራስዎን ብተነዳ ይሳልሃል የሚሉ ሃሳቦች				
<b>ጠቅላላ</b>					

**D. በአስሎ የማህበራዊ ድጋፍ ልኬት (OSSS-3) በአለርት ሆስፒታል ART ከሊኒክ በሚኖሩ የኤች አይቪ በሽተኞች መካከል ያለውን የመንፈስ ጭንቀት ለመገምገም ቅርፀት፣2023**

401	OSLO-1	ምን ያህል ሰዎች ከእርስዎ ጋር በጣም ቅርብ ስለሆኑ ታላቅ የግል ችግሮች እንዳሉባቸው ይቆጥራሉ?	<ol style="list-style-type: none"> <li>1. 'የለም'</li> <li>2. '1-2'</li> <li>3. '3-5'</li> <li>4. '5+'</li> </ol>
402	OSLO-2	ሰዎች በምታደርገው ነገር ምን ያህል ፍላጎት እና አሳቢነት ያሳያሉ?	<ol style="list-style-type: none"> <li>1 'የለም'</li> <li>2 ትንሽ</li> <li>3 'እርግጠኛ ያልሆነ'</li> <li>4 'አንዳንድ'</li> <li>5 'ብዙ'</li> </ol>
403	OSLO-3	ከፈለጉ ከጎረቤቶች ተግባራዊ እርዳታ ማግኘት ምን ያህል ቀላል ነው?	<ol style="list-style-type: none"> <li>1. 'በጣም ከባድ'</li> <li>2. 'አስቸጋሪ'</li> <li>3. 'ይቻላል'</li> <li>4. 'ቀላል'</li> <li>5. 'በጣም ቀላል'</li> </ol>
<b>ጠቅላላ</b>			

E. የኤችአይቪ መገለልን ለመለየት 12 ንጥሎች ያለው አጭር እትም የኤችአይቪ መገለል ሚዛን

ተ.ቁ	ባለአራት ነጥብ የለይከርት ልኬት ጥያቄዎች	(1)በጣም አልሰማም።	(2)አልሰማም።	(3)ተሰማ	(4)በጣንካራ ሁኔታ ይሰማሙ
501	<b>ለግል የተበጀ መገለል።</b>				
	1. ሰዎች ኤችአይቪ እንዳሉብኝ ካወቁ እኔን እንዳይነኩኝ ይችላሉ።				
	2. የምወዳቸው ሰዎች ኤችአይቪ እንዳሉብኝ ካወቁኩ በኋላ መንከባከብ አቆምኩ።				
	3. ኤች አይ ቪ እንዳሉብኝ በመንገር ጓደኞቼን አጣሁ				
502	<b>አሳሳቢ ጉዳዮችን ይፋ ማድረግ</b>				
	1. ኤች አይ ቪ እንዳሉኝ ለአንድ ሰው መንገር አደገኛ ነው።				
	2. ኤችአይቪን ሚስጥር ለመጠበቅ ጠንክሬ እሰራለሁ።				
	3. ኤችአይቪ እንዳሉብኝ ለማን እነግራቸዋለሁ				
503	<b>ስለ ህዝባዊ አመለካከት ስጋት</b>				
	1. ኤችአይቪ ያለባቸው ሰዎች እንደ ተገለሉ ይቆጠራሉ።				
	2. ብዙ ሰዎች ኤችአይቪ ያለበት ሰው ቆሻሻ ነው ብለው ያምናሉ				
	3. አብዛኛዎቹ ኤች አይ ቪ ካለበት ሰው ጋር አይመቹም።				
504	<b>አሉታዊ ራስን ምስል</b>				
	1. ኤች አይ ቪ ስላሉብኝ የጥፋተኝነት ስሜት ይሰማኛል።				
	2. ሰዎች ስለ ኤችአይቪ ያላቸው አመለካከት ስለራሴ የባሰ ስሜት እንዲሰማኝ አድርጎኛል።				
	3. ኤች አይ ቪ ስላሉብኝ እንደሌሎች ጥሩ እንዳልሆንኩ ይሰማኛል።				
<b>ጠቀላላ</b>					