

# Integrating mental health services into human immunodeficiency virus clinics: Lessons from task-sharing between clinical and lay healthcare providers in Ethiopia

Ismael Ahmed<sup>1\*</sup>, Teklu Weldegebreal<sup>2</sup>, Alemayehu Mekonnen<sup>3</sup>

## Abstract

**Background:** Globally, mental health problems are more common among people living with human immunodeficiency virus (PLHIV) than among the general population. Mental health problems affect human immunodeficiency virus (HIV) treatment adherence and retention. To address this challenge, partners used a task-sharing approach among lay healthcare workers and clinicians to integrate mental health services into HIV services at pilot hospitals in the Amhara and Tigray regions of Ethiopia. In this model, trained lay healthcare workers proactively screened patients using a mental health screening tool and subsequently linked potential clients with trained clinicians working at HIV clinics for further diagnosis and treatment.

**Methods:** We retrospectively gathered secondary data, including demographic characteristics and diagnosis information, from mental health clinicians' and case managers' quarterly reports from HIV clinics during the implementation period (January 1, 2013 to March 31, 2014).

**Results:** During the initial three-month implementation period of the project (January to March 2013), case managers screened 5,862 PLHIV for mental health disorders. Case managers referred 687 (11.7%) patients with suspected mental health disorders to clinicians for further evaluation and management. Of the total patients screened by case managers in this period, clinicians confirmed that 454 (7.7%) had a mental health disorder. Overall, the concordance between the case managers' screening results and the clinicians' diagnoses was 67.8% over the 15-month pilot implementation period.

**Conclusions:** Routine screening of PLHIV for mental health disorders helps to proactively identify and manage patients with co-morbidities. The integration of mental health services into HIV care through a task-sharing approach is a feasible strategy that could increase access to mental health services among PLHIV. [*Ethiop J. Health Dev.* 2020; 34(1):05-13]

**Key words:** Mental health, task-sharing, integration, HIV, Ethiopia, Africa

## Introduction

PLHIV are at high risk of mental health problems, which affect their health and quality of life. Loss to follow-up and poor adherence to antiretroviral therapy (ART) are common among PLHIV who have mental health conditions (1). Depression, anxiety, post-traumatic stress disorder, and cognitive impairment are common types of mental health disorders in patients following a diagnosis of HIV infection or during its progression to acquired immune deficiency syndrome (AIDS) (2–4). In fact, depression is one of the most under-recognized and under-treated mental health disorders in PLHIV (5). A study conducted in Ethiopia found that nearly half of PLHIV were depressed or anxious, and the proportion increased to two-thirds among people co-infected with HIV and tuberculosis (6).

Mental health problems affect their overall quality of life of PLHIV (7), leading to increased risky behavior and disease progression (1,8,9). These negative health consequences, combined with stigma toward mental health problems, have made access to mental health services a challenge. Moreover, the Ethiopian health system has a limited number of trained health personnel. Screening PLHIV for mental health disorders is particularly important at the time of diagnosis and before initiating ART (10) to ensure early detection and treatment (3). The integration of mental health and HIV services is of paramount

importance to alleviate mental health disorders and can help reduce HIV transmission, increase access to care for both conditions through strengthened referral and linkage systems, and reduce morbidity and mortality among PLHIV at minimal cost.

Evidence shows that a brief and sensitive screening tool that assesses mental health disorders common in PLHIV can be used effectively by laypersons with little or no mental health training in various HIV service settings to identify people in need of further assessment and treatment (11–13). In line with this, as part of improving access to mental health services and the long-term prognosis and quality of life of HIV patients (14), partners supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) used a task-sharing approach among psychiatrists, ART clinicians, and case managers to integrate mental health services into HIV chronic care services. In this model, a task-sharing approach was employed to allow lay healthcare workers (case managers) to proactively screen patients for mental health disorders and refer potential clients to clinicians for further diagnosis and treatment. The model was piloted at selected sites in the Amhara and Tigray regions of Ethiopia. This retrospective cross-sectional study describes the magnitude and types of mental health disorders among PLHIV and the utilization of the mental health screening tool by lay healthcare workers during the pilot implementation period.

<sup>1\*</sup>U.S. Centers for Disease Control and Prevention- Ethiopia, Addis Ababa, Ethiopia. Email: xxa4@cdc.gov

<sup>2</sup>U.S. Agency for International Development- Ethiopia, Addis Ababa. Email: tekluw2004@yahoo.com

<sup>3</sup>U.S. Centers for Disease Control and Prevention- Ethiopia, Addis Ababa, Ethiopia. Email: hna8@cdc.gov

**Methods**

We retrospectively analyzed data, including patient demographics and diagnosis information, from all PLHIV on ART or waiting to start ART and were screened for mental health disorders by case managers at one of the four hospitals during the pilot implementation period (January 1, 2013 to March 31, 2014). The assessment was conducted at the four hospitals (Gondar University, Dessie Referral, Mekelle General and Axum General) that participated in the pilot implementation of the mental health integration model in Amhara and Tigray regions in Ethiopia.

The pilot implementation of the model was conducted with the support of Centers for Disease Control and Prevention (CDC) Ethiopia through the International Training and Education Center for Health (I-TECH) Ethiopia, in collaboration with Amhara and Tigray Regional Health Bureaus (RHBs). The hospitals were selected for the pilot implementation because of the availability of comprehensive HIV services and psychiatric services, and high volume of PLHIV served, in the hospitals. The case managers were PLHIV who were high school graduates, and were members of HIV care multi-disciplinary teams that provide peer support to PLHIV enrolled in care based on the national HIV case management guideline (15). Case managers' roles were expanded to screen patients for mental health disorders while providing routine adherence assessment and counseling. As part of building their capacity, case managers were provided with a one-week training course on screening for common mental health disorders using a mental health screening tool (see Supplementary Appendix A) and subsequently linking patients with one or more symptoms of mental health disorders to ART clinicians for diagnosis and further treatment. The screening tool was adapted from 'Tedla-Hopkins Symptom Checklist-25', which was prepared in three Ethiopian languages (Amharic, Tigrigna and Oromiffaa) for Ethiopian communities who live abroad (16). The case managers used the adapted Amharic version of the tool to screen PLHIV. The training curriculum was developed by PEPFAR-supported partners and was later revised and adopted by the Federal Ministry of Health of Ethiopia for national use. ART clinicians (nurses, health officers and physicians) were trained by psychiatrists to identify and manage common mental health disorders among PLHIV. They did not use any specific diagnosing tool; instead, they used a job aid to identify signs and symptoms of common mental health disorders. Sometimes, when trained ART clinicians were not around, case managers linked patients who had potential mental health disorders with psychiatry units within the facility.

We extracted data from clinicians' and case managers' quarterly reports, patient hospital records, and human resources records in the HIV and psychiatric clinics from January 1, 2013 to March 31, 2014. The quarterly reports were regular activity reports about the mental health integration project implementation in the four hospitals. From the case managers' reports, we extracted data by age and sex for the number of clients screened for mental health disorders; the number of

clients with potential mental health disorders; the number of clients linked to clinicians; and the number of clients with confirmed diagnoses. The type of mental health disorder (diagnoses) by sex was abstracted from clinicians' reports. In addition, the number of PLHIV served and the number of healthcare workers in the HIV and psychiatric clinics during the study period were collected from hospitals using a separate data collection tool.

Two CDC Ethiopia program staff collected the data from all four hospitals. At the study sites, the data collection team contacted the head of the health facility, ART program coordinators, and case managers, and briefed them about the objectives of the study and data collection processes. The data collectors provided a copy of a signed confidentiality agreement to the head of the facility.

For our retrospective analysis, data coding, entry, and cleaning was carried out using EpiData software 3.0. Because the data came from quarterly reports (not individual patient-level data), cleaned data were exported to and analyzed using Microsoft Excel 2016. Frequency distributions were used to describe the socio-demographic characteristics of patients enrolled in the mental health services, including those screened, those with potential mental health disorders, and those with a confirmed diagnosis of a mental health disorder. Additionally, linkage rates, proportions, and types of mental health disorders among PLHIV and the mental health disorder detection rate were estimated using the screening tool. We analyzed each quarterly report separately to avoid double-counting patients screened during the pilot period.

**Ethical considerations**

Approval was obtained from the respective regional health bureaus and CDC Atlanta. Case managers' and clinicians' quarterly reports were accessed with permission from the heads of hospitals. Only data collectors and supervisors had access to mental health integration reports. Precautions were taken to avoid disrupting routine clinical activities during data collection.

**Results**

At the end of the study period, 15,689 PLHIV received HIV clinical care services at Axum General, Dessie Referral, Gondar University, and Mekelle General Hospitals. At the four hospitals, 19 case managers were trained to screen PLHIV for mental health disorders and refer them to clinicians for further assessment and management, and 15 clinicians (physicians, health officers, and nurses) were trained to detect and manage common mental disorders among PLHIV. Most of the clinicians (86.7%; n=13) were nurses working in ART and psychiatry units.

Case managers screened PLHIV for mental health disorders at least every three months, based on the standard operating procedure; therefore, the same group of PLHIV was screened every three months, with a few new additions to the PLHIV pool every quarter. Accordingly, during the study period, on

average case managers screened 6,872 HIV patients every quarter. During the first three months of the implementation period of the project – the initial implementation period, when screened patients were not double-counted – 5,862 PLHIV were screened for

mental illness in the four pilot hospitals. Of these, 63.0% (3,691) were women, and almost all (97.8%; n=5,734) were adults aged  $\geq 15$  years. Case managers managed to refer almost all PLHIV with potential mental health disorders (see Table 1).

**Table 1: PLHIV who received mental health integration services at the four pilot hospitals in Ethiopia, stratified by age and sex (January 1, 2013 to March 31, 2014)**

Characteristics		Screened n (%)	Potential n (%)	Linked n (%)
<b>January–March 2013*</b>				
		(n=5,862)	(n=692)	(n=687)
Sex	Male	2,171 (37.0%)	211 (30.5%)	211 (100.0%)
	Female	3,691 (63.0%)	481 (69.5%)	476 (99.0%)
Age (years)	<15	128 (2.2%)	8 (1.2%)	8 (100.0%)
	$\geq 15$	5,734 (97.8%)	684 (98.8%)	679 (99.3%)
<b>April–June 2013</b>				
		(n=5,638)	(n=333)	(n=333)
Sex	Male	2,089 (37.1%)	102 (30.6%)	102 (100.0%)
	Female	3,549 (62.9%)	231 (69.4%)	231 (100.0%)
Age (years)	<15	283 (5.0%)	2 (0.6%)	2 (100.0%)
	$\geq 15$	5,355 (95.0%)	331 (99.4%)	331 (100.0%)
<b>July–September 2013</b>				
		(n=8,799)	(n=261)	(n=257)
Sex	Male	3,553 (40.4%)	59 (22.6%)	58 (98.3%)
	Female	5,246 (59.6%)	202 (77.4%)	199 (98.5%)
Age (years)	<15	584 (6.6%)	1 (0.4%)	0 (0.0%)
	$\geq 15$	8,215 (93.4%)	260 (99.6%)	257 (98.8%)
<b>October–December 2013</b>				
		(n=5,111)	(n=116)	(n=116)
Sex	Male	2,323 (45.5%)	35 (30.2%)	35 (100.0%)
	Female	2,788 (54.5%)	81 (69.8%)	81 (100.0%)
Age (years)	<15	248 (4.9%)	4 (3.4%)	4 (100.0%)
	$\geq 15$	4,863 (95.1%)	112 (96.6%)	112 (100.0%)
<b>January–March 2014</b>				
		(n=8,948)	(n=147)	(n=147)
Sex	Male	3,623 (40.5%)	41 (27.9%)	41 (100.0%)
	Female	5,325 (59.5%)	106 (72.1%)	106 (100.0%)
Age (years)	<15	547 (6.1%)	2 (1.4%)	2 (100.0%)
	$\geq 15$	8,401 (93.9%)	145 (98.6%)	145 (100.0%)

\*January–March 2013 was the initial implementation period, in which there was no double-counting of screened patients.

**Magnitude of mental health disorders among screened PLHIV in the pilot study hospitals:** During the first quarter of the project implementation period (January to March 2013), of the 5,862 PLHIV screened, 7.7% (454) had a confirmed diagnosis of a mental health disorder (Figure 1). The reported magnitude of mental disorders was 6.7% and 8.3%

among men and women, respectively. In later quarters, there was a decreasing trend in the number of PLHIV diagnosed with a mental health disorder due to repeated screening of PLHIV every quarter to identify new instances of mental health disorders, according to the standard operating procedure (see Figure 1).

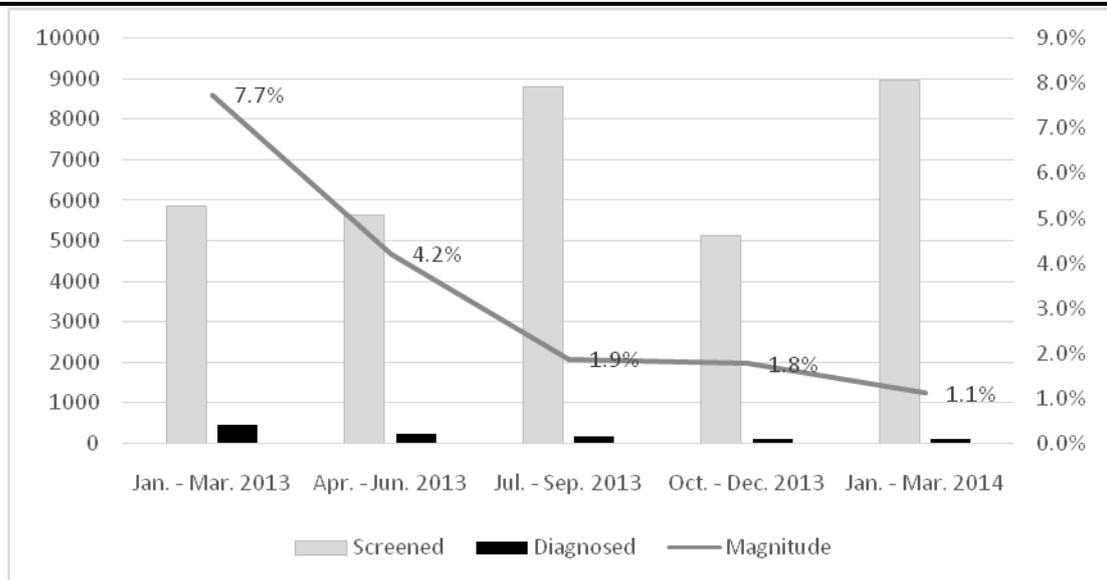


Figure 1: **Proportion of screened people living with HIV who had a confirmed mental health disorder diagnosis by quarter (January 2013 to March 2014) during the pilot implementation in Ethiopia**

**Concordance between cases by case managers' results and clinicians' confirmed diagnoses:** Of the 1,540 PLHIV with potential mental health disorders linked to clinicians during the pilot implementation period, 67.8% (1,044) received a confirmed diagnosis

of a mental health disorder. The reported concordance was 69.1% and 67.2% among men and women, respectively. As indicated in Table 2, the overall concordance rate ranged from 63.8% to 77.6% during the implementation period.

Table 2: Magnitude of mental health disorders among people living with HIV screened at the four pilot hospitals in Ethiopia (January 1, 2013 to March 31, 2014)

Characteristics		Potential & Linked	Confirmed	Concordance rate (%)*
<b>January–March 2013</b>				
Sex	Male	211	146	69.2
	Female	476	308	64.7
	Total	687	454	66.1
Age (years)	<15	8	6	75.0
	≥15	679	448	66.0
	Total	687	454	66.1
<b>April–June 2013</b>				
Sex	Male	102	75	73.5
	Female	231	162	70.1
	Total	333	237	71.2
Age (years)	<15	2	0	0.0
	≥15	331	237	71.6
	Total	333	237	71.2
<b>July–September 2013</b>				
Sex	Male	58	24	41.4
	Female	199	140	70.4
	Total	257	164	63.8
Age (years)	<15	0	0	0.0
	≥15	257	164	63.8
	Total	257	164	63.8
<b>October–December 2013</b>				
Sex	Male	35	30	85.7
	Female	81	60	74.1
	Total	116	90	77.6
Age (years)	<15	4	3	75.0
	≥15	112	87	77.7
	Total	116	90	77.6
<b>January–March 2014</b>				
Sex	Male	41	34	82.9
	Female	106	65	61.3
	Total	147	99	67.3
Age (years)	<15	2	1	50.0
	≥15	145	98	67.6
	Total	147	99	67.3
<b>Total</b>		<b>1,540</b>	<b>1,044</b>	<b>67.8</b>

\*The proportion of concordance between potential and linked cases by case managers and confirmed diagnoses by clinicians.

**Types of mental health disorders diagnosed among PLHIV:** As shown in Figure 2, clinicians' quarterly reports indicated that 1,304 patients with confirmed mental health disorders (617 anxiety, 421 dementia, 127 depression, 50 psychosis, 46 epilepsy, 37 substance use disorder, five mania, and one child development or conduct) were reported from ART clinics in the four hospitals during the pilot implementation period. There are eight categories of common mental health disorders in the clinicians' reports. This retrospective study included potential

cases referred by case managers and those patients identified by the clinicians themselves. Of the PLHIV who received mental health disorder diagnoses, 71.3% (930) were women. As indicated in Figure 2, the highest proportion of reported mental health disorders were cases of anxiety or psycho-trauma (47.3%; n=617), followed by dementia (32.3%; n=421) and depression (9.7%; n=127). Substance use problems were higher among men (91.9%; n=34) than women (8.1%; n=3).

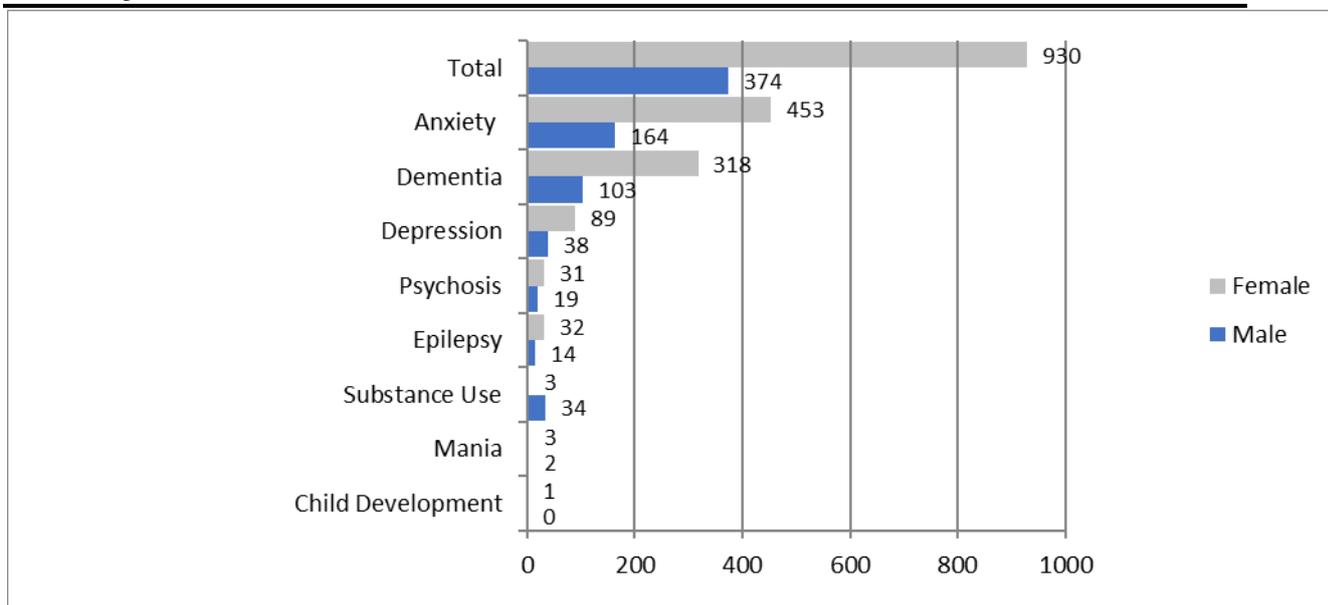


Figure 2: **Distribution of reported diagnoses of mental health disorders among people living with HIV by sex at the four pilot hospitals in Ethiopia (January 1, 2013 to March 31, 2014)**

Regarding the distribution of diagnosed mental health disorders among the pilot implementation hospitals (see Figure 3), Axum General Hospital reported the highest number of cases of mania (n=3; 60%), followed by anxiety or psycho-trauma (n=242; 39.2%). Dessie Referral Hospital reported the highest number of cases

of epilepsy (n=27; 58.7%) and depression (n=65; 51.2%). Mekelle General Hospital reported the highest number of cases of dementia (n=115; 27.3%). Gondar University Hospital reported the largest number of cases of substance use problems (n=31; 83.8%).

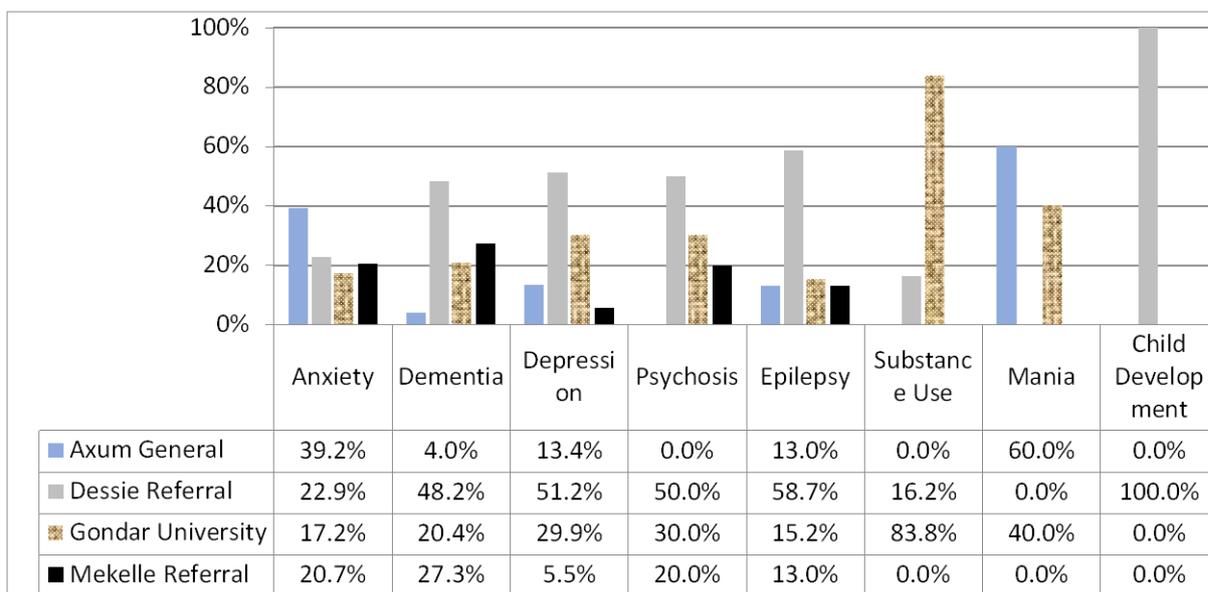


Figure 3: **Proportion of reported cases of mental health disorders among people living with HIV at each pilot hospital (January 1, 2013 to March 31, 2014)**

**Discussion**

There is strong national and district-level support for the integration of mental health services into primary healthcare services to improve access and address the high unmet need for mental healthcare in Ethiopia (17). The Ministry of Health has developed a national mental health strategy to guide the integration of mental health services with primary care to address the needs of Ethiopians (18). Chronic HIV care is one of the units that could be prioritized for integration of mental health services because PLHIV have an increased risk of mental health disorders (1,19,20).

Existing evidence from research also supports the need for integration of mental health services into HIV care to ensure better clinical outcomes of HIV treatment (1,2,8,9,19). In line with this, previously, there was an effort to integrate mental health services into HIV care using trained ART clinicians in Ethiopia (21). However, ART clinicians are overloaded with patients, which makes active screening of patients for mental health disorders difficult. Therefore, PEPFAR-supported partners developed a model to use case managers to help ART clinicians identify PLHIV with potential mental health disorders. This study is one of

the few reports from resource-limited settings to describe the results of integrating mental healthcare services into HIV care through a task-sharing approach between clinical and lay care providers in Ethiopia.

During the first three months of the project, almost 8% of PLHIV screened had confirmed mental health disorders. However, in later quarters, the number of PLHIV diagnosed with a mental health disorder decreased significantly to 1%. This is due to repeated screening of PLHIV every quarter to identify new instances of mental health disorders, according to the standard operating procedure. Anxiety or psycho-trauma, dementia and depression were the most common types of mental health disorder reported among PLHIV during the pilot implementation period.

Compared with other studies conducted in Africa (2,22–24), our findings suggest a low rate of clinic-based prevalence of mental disorders among PLHIV enrolled in HIV care at public health facilities in Ethiopia. Though most previous studies indicate significant rates of mental health disorders among PLHIV, there are differences in their specific prevalence rates (2,22–24). This variation could be due to methodological differences with respect to design and study settings. For example, most of the studies had small sample sizes (<500) compared to our study, which included almost 6,000 PLHIV. Additionally, our study used lay healthcare workers (trained peer PLHIV) to perform the first screening and to refer potential cases to ART clinicians. Unlike our study, the aforementioned studies screened PLHIV using trained psychiatrists and validated tools such as the General Health Questionnaire (GHQ-28) and Mini-International Neuropsychiatric Disorder Interview (MINI) (2,23,24). Although our tool was not validated, we observed strong concordance between potential cases identified by lay healthcare workers and clinicians' diagnoses.

In this study, anxiety or psycho-trauma was the most common type of mental health disorder reported, followed by dementia and depression. These findings are not wholly consistent with other studies conducted in Africa (2,22–24). In most previous studies, depression was the most common mental health disorder among PLHIV, followed by anxiety disorder (2,22,24). The robustness of our screening tool, the capacity of case managers to identify potential cases, and the diagnostic capacity of the ART clinicians could contribute to this difference. Furthermore, the methodological variations previously described could also explain this difference.

The mental health disorders identified in this study are frequently encountered co-morbidities among PLHIV in primary healthcare settings and warrant integration of mental health services into HIV care (4,17,19,20,25). Task-sharing through capacity-building training is a potential strategy to integrate mental health services into primary healthcare settings. In support of this, a study conducted in Ethiopia to assess the effectiveness of a five-day mental health training course for clinicians (mostly nurses) showed significant improvements in the knowledge, attitudes,

and practices of healthcare workers for common mental health disorders (25).

### Limitations of the study

Our study had some limitations. Our study used secondary data (quarterly reports), which did not allow for detailed statistical analysis. Also, the project used clinicians with different skill sets to diagnose mental health disorders which could have resulted in different diagnoses. Most importantly, the mental health screening tool employed in this study was not validated in the Ethiopian setting. These limitations could be potential areas for future research.

### Conclusions

Our study indicates the importance of routine screening of PLHIV for mental health disorders to identify and manage PLHIV with co-morbidities as early as possible. The integration of mental health services into HIV care through a task-sharing approach is a feasible strategy that could increase access to mental health services among PLHIV. Trained lay healthcare workers can help over-burdened clinicians in resource-limited settings such as Ethiopia. As part of improving mental health disorder detection among PLHIV, lay healthcare workers should be supported through different capacity-building strategies (e.g. mentoring). Future effort should focus on validating the mental health disorder screening tool used by lay healthcare workers.

### Acknowledgements

This project was supported by the PEPFAR through the U.S. CDC under the terms of cooperative agreement with Amhara and Tigray RHBs, numbers GH002152 and GH002151, respectively. The authors are grateful to Tsigemariam Teklu for her contribution in facilitating site-level data collection in Tigray Region. The heads of the health facilities, ART clinic program coordinators and case managers included in this study are acknowledged for their efforts in making the data accessible to the study team.

### Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the funding agencies.

### References

1. Ciesla JA, Roberts JE. Meta-analysis of the relationship between HIV infection and risk for depressive disorders. *Am J Psychiatry*. 2001;158(5):725-30.
2. Olagunju AT, Ogundipe A, Erinfolami AR, Akinbode AA, Adeyemi JD. Toward the integration of comprehensive mental health services in HIV care: An assessment of psychiatric morbidity among HIV-positive individuals in sub-Saharan Africa. *AIDS Care*. 2013;25(9):1193-8.
3. Kalichman SC, Heckman T, Kochman A, Sikkema K, Bergholte J. Depression and thoughts of suicide among middle-aged and older persons living with HIV/AIDS. *Psychiatric Services*. 2000;51(7):903-7.
4. Remien RH, Stirratt MJ, Nguyen N, Robbins RN, Pala AN, Mellins CA. Mental health and

- HIV/AIDS: The need for an integrated response. *AIDS*. 2019;33(9):1411-20.
5. Ownby RL, Jabos RJ, Waldrop-Valverde D, Gould F. Depression care and prevalence in HIV-positive individuals. *Neurobehavioral HIV Medicine*. 2010;2:73-83.
  6. Deribew A, Tesfaye M, Hailemichael Y, Apers L, Abebe G, Duchateau L, *et al*. Common mental disorders in TB/HIV co-infected patients in Ethiopia. *BMC Infect Dis*. 2010;10(201).
  7. Tesfaye M, Kaestel P, Olsen MF, Girma T, Yilma D, Abdissa A, *et al*. Food insecurity, mental health and quality of life among people living with HIV commencing antiretroviral treatment in Ethiopia: A cross-sectional study. *Health Qual Life Outcomes*. 2016;14(37).
  8. Kacanek D, Jacobson D, Spiegelman D, Wanke C, Isaac R, Wilson I. Incident depression symptoms are associated with poorer HAART adherence: A longitudinal analysis from the Nutrition for Healthy Living (NFHL) study. *J Acquir Immune Defic Syndr*. 2010;53(2):266-72.
  9. Olatunji BO, Mimiaga MJ, O’Cleirigh C, Safren SA. Review of treatment studies of depression in HIV. *Top HIV Med*. 2006;14:112-24.
  10. Rabkin JG. HIV and depression: 2008 review and update. *Curr HIV/AIDS Rep*. 2008;5(4):163-71.
  11. Aidala A, Havens J, Mellins CA, Dodds S, Whetten K, Martin D, *et al*. Development and validation of the Client Diagnostic Questionnaire (CDQ): A mental health screening tool for use in HIV/AIDS service settings. *Psychology, Health & Medicine*. 2004;9(3):362-80.
  12. Mall S, Sorsdahl K, Swartz L, Joska J. “I understand just a little...” Perspectives of HIV/AIDS service providers in South Africa of providing mental health care for people living with HIV/AIDS. *AIDS Care*. 2012;24(3):319-23.
  13. Dodds S, Blaney N, Neuhring EM, Blakley T, Lizzotee J-M, Potter JE, *et al*. Integrating mental health services into primary care for HIV-infected pregnant and non-pregnant women: Whole Life--a theoretically derived model for clinical care and outcomes assessment. *Gen Hosp Psychiatry*. 2000;22(4):251-60.
  14. Gore-Felton C, Koopman C, Spiegel D, Vosvick M, Brondino M, Winningham A. Effects of quality of life and coping on depression among adults living with HIV/AIDS. *J Health Psychol*. 2006;11(5):711.
  15. FHAPCO. Guidelines for implementation of HIV/AIDS case management in Ethiopia. 2009: 33.
  16. Wolde Giorgis T. Understanding and surviving depression, alcohol & drugs: A personal guide for Ethiopians. Washington, D.C. : Giorgis; 1996.
  17. Hanlon C, Eshetu T, Alemayehu D, Fekadu A, Semraw M, Thornicroft G, *et al*. Health system governance to support scale up of mental health care in Ethiopia: A qualitative study. *International Journal of Mental Health Systems*. 2017;11(38).
  18. Federal Ministry of Health. National mental health strategy [Internet]. FMOH; 2012 [cited January 1, 2020]. Available from: [www.mhinnovation.net/sites/default/files/downloads/resource/ETHIOPIA-NATIONAL-MENTAL-HEALTH-STRATEGY-2012-1.pdf](http://www.mhinnovation.net/sites/default/files/downloads/resource/ETHIOPIA-NATIONAL-MENTAL-HEALTH-STRATEGY-2012-1.pdf)
  19. Collins PY, Insel TR, Chockalingam A, Daar A, Maddox YT. Grand challenges in global mental health: Integration in research, policy, and practice. *PLOS Medicine*. 2013;10(4):e1001434.
  20. Shidhaye R, Lund C, Chisholm D. Closing the treatment gap for mental, neurological and substance use disorders by strengthening existing health care platforms: Strategies for delivery and integration of evidence-based interventions. *International Journal of Mental Health Systems*. 2015 30;9(1):40.
  21. Wissow LS, Tegegn T, Asheber K, MacNabb M, Weldegebreal T, Jerene D, *et al*. Collaboratively reframing mental health for integration of HIV care in Ethiopia. *Health Policy and Planning*. 2014;30(6):791-803.
  22. Brandt R. The mental health of people living with HIV/AIDS in Africa: A systematic review. *African Journal of AIDS Research*. 2009;8(2):123-33.
  23. Adewuya AO, Afolabi MO, Ola BA, Ogundele OA, Ajibare AO, Oladipo BF. Psychiatric disorders among the HIV-positive population in Nigeria: A control study. *Journal of Psychosomatic Research*. 2007;63(2):203-6.
  24. Olley BO. Psychological distress in the first year after diagnosis of HIV infection among women in South Africa. *African Journal of AIDS Research*. 2006;5(3):207-15.
  25. Ayano G, Assefa D, Haile K, Chaka A, Haile K, Solomon M, *et al*. Mental health training for primary health care workers and implication for success of integration of mental health into primary care: Evaluation of effect on knowledge, attitude and practices (KAP). *International Journal of Mental Health Systems*. 2017;11(1):63.

Supplementary Appendix A. Brief Mental Health Disorder Symptom Screening Tool for PLHIV and Referral Tool

ኤችአይቪ ቫይረስ በደማቸው ውስጥ ላለ ደንበኞች፣ የአእምሮ ጤና ህመም ምልክቶች መፈተሻና መለያ/ሪፈራል ቅጽ

የደንበኛው ስም/Patient's Name: \_\_\_\_\_ ጾታ/Sex: \_\_\_\_\_ አድማ/ Age: \_\_\_\_\_ የህክምና መዝገብ ቁጥር/MRN: \_\_\_\_\_

ይህ የህመም ምልክቶች መፈተሻ ቅጽ እርስዎ የአእምሮ ጤና ችግር ሊኖርባቸው ይችላል ተብለው የሚጠረጠሩ ደንበኞችን ለመለየትና በወቅቱ ከህክምና ባለሙያዎች ጋር ለማገናኘት የሚረዳ መሳሪያ ነው። This checklist is to assist you in assessing and making a timely referral of the client to the treatment team. ከዚህ በታች የተዘረዘሩ የህመም ምልክቶች አስፈላጊና ትኩረት የሚሹ ሲሆኑ ደንበኛዎ ተጨማሪ ህክምና የሚያስፈልገው መሆኑን ለመወሰን ይረዳዎታል። ከተዘረዘሩት ምልክቶች ውስጥ አንዱ ከተገኘ፣ ደንበኛውን ለተጨማሪ ምርመራና ህክምና ወደ ጤና ባለሙያ ይህንን ምልክት (✓) በማድረግ ቅጹን ሞልተው ይላኩ። All behaviors listed below are important and should be taken seriously; they are also designed to help you decide if you should refer the client to the treatment team for further assistance. An answer of "yes" to any one of the following questions should prompt further referral and evaluation by the treatment team or mental health professional. Please put a (✓) to indicate a yes answer.

1. የመደበኛ በሽታን ለመለየት ባለፉት 3 ወራት ውስጥ Questions to Identify Depression: In the past 3 months;

( ) ከ2 ሳምንታት በላይ በተከታታይ የማዘን/ተስፋ የመቁረጥ ስሜት የተሰማዎት ጊዜ አለ? Was there ever a time when you felt sad/hopelessness for more than 2 weeks in a row?
( ) ከ2 ሳምንታት በላይ ለገሮች (መዝናኛት፣ ስራ ወዘተ) ፍላጎት ማጣት ተሰምቶት ያውቃል? Was there ever a time lasting more than 2 weeks when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?

2. ህይወትን የማጥፋት ስሜት ችግርን ለመለየት ለመጨረሻ ጊዜ በጤና ተቋም ከመጡ በኋላ/ ባለፉት 2 ወራት ውስጥ Questions to Identify Suicidal Ideation: Since your last visit [or in the last 2 months];

( ) ሞቼ በነበር ወይም በተኛሁበት ብቀር/ባልነቃ ብለው ተመኝተው ያውቃሉ? Have you wished you were dead, or wished you could go to sleep and not wake up?
( ) ህይወትዎን የማጥፋት ሃሳብ ነበረዎት? Have you had actual thoughts of killing yourself?
( ) ከዚህ ቀደም ሕይወትዎን የማጥፋት ሙከራ ነበረዎት? Have you ever attempted to harm/kill yourself?

3. የጭንቀት በሽታን ለመለየት ባለፉት 3 ወራት ውስጥ Questions to Identify Anxiety: In the past 3 months;

( ) ከ1 ወር በላይ ለሆነ ጊዜ የቆየ በተደጋጋሚ የመጨነቅ ስሜት ተሰምቶት ያውቃል? Did you ever have a period lasting more than 1 month when most of the time you felt worried and anxious?
( ) በድንገት የሚከሰት የመፍራት፣ የመጨነቅ ወይም (እርስዎ ብቻ) የመሸበር ስሜት ተሰምቶት ያውቃል? Did you have a spell or an attack when all of a sudden you felt frightened, anxious, or very uneasy when most people would not be afraid or anxious?
( ) ያለምንም ምክንያት በድንገት የልብ ትርታ መጨመር/በኃይል መምታት፣ መላ ሰውነት የመስለል ወይም ትንፋሽ የማጠር ስሜት ተሰምቶት ያውቃል? Did you ever have a spell or an attack when for no reason your heart suddenly started to race, you felt faint, or you couldn't catch your breath?

4. ሽቅለት (የማንያ በሽታን) ለመለየት ባለፉት 3 ወራት ውስጥ Questions to Identify Mania: In the past 3 months;

( ) መጠጥና ሌሎች አበረታች ዕጾችን ሳይጠቀሙ፣ ከ1 ሳምንት በላይ ለሆነ ጊዜ የቆ የከፍተኛ የመነቃቃት/የፈንጠዘያ ስሜት፣የጉልበተኝነት/ቁጣ ቁጣ የማለት እና ያለመጠን ብዙ የማውራት/የመለፍለፍ ያልተለመደ ስሜት ተሰምቶት ያውቃል? When not high or intoxicated, did you ever feel extremely energetic or elated or irritable and more talkative than usual?

5. በደባል ሰብ የመጠመድ ችግርን ለመለየት Questions to Identify Substance Abuse. ይህንን ጥያቄ ደንበኛዎ ሰብ ሊያስከትሉ የሚችሉ ነገሮችን የሚወስዱ ከሆነ ብቻ ይጠይቁ።

( ) መጠጥ ወይም ሰብ ሊያስከትሉ የሚችሉ ዕጽ/መድኃኒቶችን የመውሰድ መጠንን መቀነስ እንደሚያስፈልግዎ ተሰምቶት ያውቃል? Have you ever felt the need to cut down on your use of alcohol or drugs?
( ) መጠጥ ወይም ሰብ ሊያስከትሉ የሚችሉ መድኃኒቶችን በመውሰድም ክንያት ሰዎች በጎ ያልሆነ አስተያየት በመስጠታቸው ተበሳጭተው ያውቃሉ? Has anyone annoyed you by criticizing your use of alcohol or drugs?
( ) መጠጥ ወይም ሰብ ሊያስከትሉ የሚችሉ ዕጽ/መድኃኒቶችን በመውሰድ ምክንያት መሰራት ያለበትን ነገር ባለመስራትዎ ተፀፅተው

ያውቃሉ? Have you ever felt guilty because of something you've done while drinking or using drugs?

( ) ነርቮ እንዲሰራ (ለምሳሌ- እጅ እንዳይንቀጠቀጥ) ወይም የጠዋት ድብርትን ለማስወገድ ብለው መጠጥ ወይም ሰብ ሊያስከትሉ የሚችሉ ዕጽ/መድኃኒቶችን ወስደው ያውቃሉ? Have you ever taken a drink or used drugs to steady your nerves or get over a hangover (eye-opener)? ከተገለፁት ውስጥ ≥2 ከተገኙ ችግሩ መኖሩን ይጠቁማሉ። A total of ≥2 may be suggestive of a problem.

6. ከፍተኛ የሆነ የአዕምሮ መቃወስ (ሳይኮሲስ) በሽታን ለመለየት- ደንበኛውን በመመልከት ወይም ቤተሰብን በመጠየቅ የሚሞላ (ባለፉት 3 ወራት ውስጥ) Questions to Identify Psychosis: Observe or ask families whether the patient (in the last 3 months);

( ) ባልተለመደ አኳኋን መራመድ፣መንቀሳቀስና ማውራት ወይም ዝምታ ማብዛትና መናገር አለመፈለግ። Talking & acting strangely or becoming very quiet and avoid talking.
( ) ሌሎች ሰዎች የማይሰማቸውን ድምጽ ሰማሁ ወይም የማይየትን ነገር አየሁ ማለት። Claiming to hear voices or see things that other people don't.
( ) ተጠራጣሪ መሆንና ሌሎች ሰዎች ሊጎዱኝ ይፈልጋሉ ማለት። Being very suspicious, perhaps claiming that other people are trying to harm him/her.

7. የመርሳት በሽታን (ደሜንሽያ) ለመለየት-ደንበኛውን ወይም ቤተሰብን በመጠየቅ የሚሞላ (ባለፉት 3 ወራት ውስጥ) Questions to Identify Dementia: Interview the patient or families whether the patient (in the last 3 months);

( ) ነገሮችን ለማስታወስ መቸገር። Has trouble with memory.
( ) ሃሳብን ለመሰብሰብ መቸገር፣ የማዘር ወይም የመንቀጠቀጥ ወይም የድካም ስሜት መሰማት። Has poor concentration.
( ) ነገሮችን አስቦ፣ አቅዶ የመፈጸም ችሎታ ማሽቆፈቆል። Has diminished executive function.
( ) ጊዜን፣ ቦታን ወይም ሰውን በአግባቡ ለመለየት መቸገር። Has diminished orientation to time, place & person.

8. የመጣል በሽታን ለመለየት Questions to Identify Epilepsy:

( ) ሰውነት በከፊል/በሙሉ ማዝፍዘፍ ወይም በፍጥነት ማንቀጥቀጥን ተከትሎ ሽንት/ዓይነምድርን አለመቆጣጠር፣ ራስን መሳትና የሰውነት መገታተር፣ አረፋ መድፈቅ አጋጥሞት ያውቃል? Did you ever have partial or generalized fits [sharp, shaky movements] accompanied by frothing or loss of control of bowel or bladder function, sudden loss of consciousness, and stiff limbs?

ላኪ/Referred by: \_\_\_\_\_ ቀን/Date: \_\_\_\_\_

Feedback (confirm the assessment)
The patient has/□□□□ : ( ) Mental Health Disorder/□□□□
□□ □□ □□□□
(specify/□□□□) \_\_\_\_\_
( ) Non Mental Health Disorder/□□□□