

The Determinants of Mental Health Integration Within HIV and Tb Care: A Mixed-methods Assessment in Resource-limited Settings

Mbuotidem Emmanuel Ekerette

mekerette@cccr-nigeria.org

Centre for Clinical Care and Clinical Research

Idris Saliu

Centre for Clinical Care and Clinical Research

Oluyemi Atibioke

Association for Reproductive and Family Health

Andrew Etsetowaghan

Centre for Clinical Care and Clinical Research

Musa Salami

Centre for Clinical Care and Clinical Research

Mary Rufai

Centre for Clinical Care and Clinical Research

Paul Kehinde

Centre for Clinical Care and Clinical Research

Adesoji Amusan

Centre for Clinical Care and Clinical Research

Nike Kehinde

Centre for Clinical Care and Clinical Research

Peters Adekoya

Centre for Clinical Care and Clinical Research

Ngozi Idemili-Aronu

IVAN Research Institute

Ayodotun Olutola

Centre for Global Health Practice and Impact, Georgetown University

Echezona Ezeanolue

IVAN Research Institute

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Abstract

Background

HIV and tuberculosis (TB) remain major public health challenges in Sub-Saharan Africa, particularly in Nigeria, where mental health disorders such as depression and anxiety further compromise adherence to antiretroviral therapy (ART) and directly observed therapy (DOT). Despite this, mental health services remain poorly integrated into healthcare delivery. This baseline assessment evaluated the availability and integration of mental health services in selected facilities in Niger state, in line with Nigeria's national mental health policies.

Method

A mixed-method cross-sectional design was employed, using cluster sampling to select six facilities across the state and purposive sampling to identify those with the highest ART client load. Quantitative data were collected using assessment checklists and service utilization records, while qualitative data were obtained through key informant interviews (KIIs) with heads of ART, DOT, and Mental Health units. Quantitative analysis using STATA generated percentages, and qualitative data were thematically analyzed.

Results

Findings showed no integration of mental health services within ART and DOT units across all facilities (0%). Only 25% of facilities had a dedicated mental health desk, adequate workforce, data capturing tools, or safe counselling space. Mental health policies and SOPs (6.3%) and dedicated budgets (6.3%) were largely absent. Referral directories (25%), inter-facility partnerships (12.5%), and support groups (12.5%) were also limited. Overall, the results indicate weak structural readiness and lack of integration of mental health services within HIV and TB care settings.

Conclusion

The study highlights a critical gap in mental health service integration within HIV and TB care. Considering the rate of professionals compared to demands, training and task-shifting approaches will help expand service delivery, integration of routine screening tools into ART and DOT clinics and strengthening of referral systems through structured directories and digital linkage mechanisms. In addition, tele-mental health support systems are recommended to improve access and continuity of care.

Background

Human Immunodeficiency Virus (HIV) remains a major public health challenge globally, with substantial morbidity and mortality. According to the World Health Organization, an estimated 40.8 million people were living with HIV worldwide in 2023 (WHO, 2024), with sub-Saharan Africa accounting for nearly two-thirds of the global burden (UNAIDS, 2021). Nigeria, the most populous country in Africa, contributes significantly to this burden, with an estimated adult HIV prevalence of 1.4% and approximately 1.9 million people living with HIV. Crucially, this public health challenge is heavily compounded by co-occurring epidemics. Tuberculosis (TB) stands as a primary co-morbid condition, serving as the leading cause of death from a single infectious agent and the principal driver of mortality among individuals living with HIV (Njoku, 2026). In sub-Saharan Africa, the syndemic relationship between HIV and TB dramatically accelerates disease progression, compromises immune function, and significantly exacerbates adverse clinical outcomes.

A further compounding factor to the management of these chronic conditions is poor mental health. Evidence indicates that individuals, including adolescents, with mental health conditions particularly depression and anxiety are more likely to engage in behaviours that increase HIV risk, including unsafe sexual practices, substance use, and poor adherence to preventive and treatment measures (Nguyen et al., 2025). Conversely, people living with HIV and those battling TB, including adolescents, are at an increased risk of developing mental health disorders. This susceptibility stems from intense psychosocial stressors such as stigma, discrimination, social isolation, and poverty, as well as biological mechanisms including neuroinflammation and dysregulation of the hypothalamic-pituitary-adrenal axis (Oladejo et al., 2024; Lawal et al., 2023; WHO, 2024). These psychosocial adversities significantly compromise both ART adherence and TB treatment continuity, resulting in lower rates of viral suppression and heightened risks of drug resistance. This stark reality marks the critical importance of integrating mental health and psychosocial support directly into HIV and infectious disease care.

Despite the well-established relationship between mental health and infectious disease outcomes, the integration of mental health services into HIV and TB care remains limited in many low-and middle-income countries, including Nigeria (Fadele et al., 2024). Although awareness of co-morbid mental health conditions among people living with HIV and TB has increased, mental health service delivery within ART and TB Directly Observed Therapy (DOT) clinics is often constrained by limited human resources, inadequate funding, and weak service organization (Adewuya, 2025). Many health facilities lack trained personnel, standardized mental health screening tools, and clear referral pathways, resulting in missed opportunities for early identification and management of common mental disorders.

At the health-system level, facility capacity and organizational readiness play a critical role in determining whether mental health services are effectively integrated into HIV and TB care. A baseline situational analysis by Ezeanolue et al. (2020) indicated that many ART and DOT clinics in Nigeria operated without structured mental health screening, counselling services, or referral systems. While that foundational assessment highlighted systemic gaps, subsequent research has demonstrated that these challenges persist. Recent evaluations continue to show that substantial structural barriers such as severe shortages of trained psychological personnel, inadequate infrastructure, and a lack of

standardized diagnostic tools still hinder the execution of integrated infectious disease and mental health protocols across Nigerian health facilities (Fadele et al., 2024; Nwanja et al., 2025).

Newly diagnosed HIV clients without access to psychosocial support are particularly vulnerable to psychological distress, which negatively affects engagement and retention in care. Community-level factors, including pervasive stigma toward both HIV and mental illness, further compound these challenges and discourage help-seeking. While community-based psychosocial interventions such as the iCARE Nigeria pilot, have shown promise in reducing depressive symptoms among youth living with HIV by using peer navigation and SMS reminders (Ogunmola et al., 2025), evidence on their scale-up and integration into routine facility-based HIV services in Nigeria remains limited.

From a policy perspective, Nigeria has made structural advancements to strengthen mental health integration through the enactment of the National Mental Health Act, which aligns with global frameworks such as the WHO Comprehensive Mental Health Action Plan (2013–2030). However, the translation of these legislative and policy frameworks into routine practice within HIV and TB programs remains uneven across the country. This implementation gap is largely driven by governance challenges, severe workforce shortages, and limited, non-integrated healthcare financing. Empirical data documenting exactly how national mental health policies are operationalized at the facility level particularly within high-volume ART and DOT clinics remain scarce. In Niger state, for example, evidence regarding the availability, readiness, and practical integration of mental health services within existing HIV and TB programs is limited. While broad national reports highlight widespread gaps in mental health service provision, localized, facility-based baseline assessments have not systematically documented the existing mental health infrastructure, workforce capacity, screening practices, or referral mechanisms within ART and DOT clinics. This lack of context-specific, empirical data constrains effective health systems planning, prevents targeted resource allocation, and hinders sustainable program improvement.

Therefore, this study aimed to conduct a comprehensive facility-based baseline assessment of mental health service availability and integration within selected high-volume ART and DOT clinics in Niger state, Nigeria. Specifically, the study evaluated the availability and functionality of mental health infrastructure, healthcare worker knowledge and clinical practices, the operationalization of national mental health policies at the facility level, and the existing psychosocial support mechanisms designed to mitigate stigma and discrimination. By systematically mapping these service gaps and system-level barriers, this research seeks to generate scalable, evidence-based insights necessary to advance implementation science in low-and middle-income countries. Ultimately, the findings aim to provide a transferable framework for health system resilience, informing regional and national policies to successfully operationalize integrated, person-centered care and improve long-term clinical and psychological outcomes for individuals living with HIV and TB.

Methods

Study Setting

The study was conducted in Niger state, a low-resource setting situated within the North-Central geopolitical zone of Nigeria. Characterized as the largest state in the country by landmass, Niger state spans approximately 76,363 square kilometers (Awolaye & Thron, 2016). This vast, predominantly rural and peri-urban geographic layout introduces distinct health system vulnerabilities, exacerbating the centralization of specialized healthcare services, and creating systemic bottlenecks for long-term retention in chronic care. The state encompasses 25 Local Government Areas (LGAs) and supports an estimated population exceeding 6 million residents as of 2024 (Niger Foods GIS, 2024). Major ethnolinguistic populations anchoring this demographic landscape include the Nupe, Gbagyi, Hausa, Fulani, Kamuku, and Kambari groups.

To achieve geographic, demographic, and administrative representation across this expansive and resource-limited terrain, a stratified cluster sampling methodology was deployed. The state was structurally demarcated into three primary programmatic clusters anchored by major urban hubs and their corresponding LGAs: Minna, Suleja, and Bida. Within these clusters, high-volume public health facilities were purposively sampled to capture critical variations in patient volume, resource availability, and operational readiness across the state's healthcare delivery system. The final institutional sample comprised General Hospital Minna and Ibrahim Badamasi Babangida (IBB) Specialist Hospital Minna within the Chanchaga LGA (representing the Minna Cluster/Niger East Zone); General Hospital Suleja within the Suleja LGA and Umaru Yar'Adua Memorial Hospital Sabonwuse within the Tafa LGA (representing the Suleja Cluster/Niger East Peri-urban Zone); and the Federal Medical Centre Bida and General Hospital Bida within the Bida LGA (representing the Bida Cluster/Niger South Zone).

Study Design

A cross-sectional facility-based mixed-methods research design was employed to achieve the study objectives. This approach enabled the collection of both quantitative and qualitative data within a defined period, thereby providing a comprehensive understanding of mental health service integration into TB/HIV care in Niger state, Nigeria. The cross-sectional design facilitated the assessment of variables of interest at a single point in time without manipulation of the study environment, making it suitable for evaluating the current status, challenges, and operational factors influencing service integration.

By adopting a facility-based approach, the study obtained data directly from active service delivery points, ensuring that findings reflected real-world clinical practices and infrastructure realities. The mixed-methods approach further strengthened the study by combining the strengths of quantitative and qualitative methodologies. The quantitative component generated measurable and generalizable data on service delivery indicators, while the qualitative component explored the perspectives, experiences, and contextual challenges faced by healthcare providers. The integration of both methods provided a more

comprehensive and in-depth understanding of the research problem than either method could achieve independently.

Sample and Sampling Technique

A cluster sampling technique was used to divide Niger state into three clusters (Minna, Suleja, and Bida), reflecting administrative and geographic distributions. Within each cluster, facilities with the highest patient loads, determined by the number of clients currently on treatment (TX_Curr), were prioritized. A purposive sampling strategy was then applied to select these high-volume facilities, ensuring that the study captured insights from sites with substantial service delivery demands. For the qualitative component, a total of 16 participants were recruited consisting of heads of ART, DOT, and mental health units (where available in the selected facility) in the selected facilities. These individuals were selected because of their roles in service delivery, supervision, and implementation of mental health and HIV/TB programs.

Study Process and Procedure

The study commenced with observations of routine care provided to people living with HIV (PLHIV) within the ART and DOT units, alongside informal engagements with service providers. These interactions revealed concerns that some patients were presenting symptoms suggestive of mental health-related conditions. Following these observations, permission was sought from the management of the ACE4 project to access selected supported facilities in order to assess the availability and level of mental health services provided to PLHIV. Upon approval, visits were conducted to the mental health, ART, and DOT units of the selected facilities to discuss the objectives of the study and obtain consent from the heads of the respective units. A research team was subsequently constituted to develop baseline assessment questions that served as key informant interview (KII) guides. These items were face-validated by area experts and rewarded as recommended.

During the data collection phase, informed consent forms were presented to all participants for voluntary participation prior to commencement of interviews. The KII guides were used to facilitate discussions with participants, while facility-level assessments and reviews of available service provision documents and tools were also conducted. At the end of each interview session, participants were debriefed and reassured that all information provided would be used strictly for research purposes and would not be used to implicate them or affect their employment. Audio recordings from the KIIs were transcribed and translated for analysis using STATA v15, while photographs of relevant service provision tools and infrastructure were documented to support the assessment process.

Data Collection

Data were collected using a mental health infrastructure assessment checklist and a key informant interview guide developed specifically for this study (Supplementary File 1). Data collection involved both quantitative and qualitative processes. Quantitative data were collected using structured facility assessment checklists and review of routine facility records to document the availability of mental health services, infrastructure, human resource capacity, screening tools, counselling services, referral pathways, and documentation systems in the healthcare facility. Qualitative data were collected through key informant interviews conducted with unit heads using semi-structured interview guides. Interviews explored facility-level processes related to integration of mental health into HIV and TB care, staff training, infrastructure adequacy, referral mechanisms, and challenges to implementation. No interventions, experimental comparisons, or pharmacological products were involved in this study, as it was a descriptive baseline assessment of existing services.

Data Analysis

Quantitative data obtained from the facility assessment checklist and routine service records were entered and analyzed using Stata version 15 (StataCorp, College Station, TX, USA). Descriptive statistics including frequencies and percentages were computed to summarize the availability of mental health infrastructure, staffing, screening tools, documentation systems, referral mechanisms, and institutional support structures within ART and DOT service delivery units.

Qualitative interviews were transcribed verbatim and analyzed thematically. The analysis followed a systematic approach involving familiarization with transcripts, coding of relevant statements, grouping of codes into categories, development of themes, and refinement of final themes. Both deductive coding based on the interview guide and inductive coding to capture emerging insights were applied. Representative quotations were selected to support key findings.

Findings from the quantitative and qualitative components were triangulated during interpretation to assess convergence and divergence across datasets and strengthen validity of conclusions.

Reporting Guideline

This study was reported in accordance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guideline for the quantitative component and the COREQ (Consolidated Criteria for Reporting Qualitative Research) guideline for the qualitative component. Quantitative data were analyzed using Stata version 15 (StataCorp, College Station, TX, USA).

Results

Participant Characteristics

A total of 16 key informants participated in the study across six high-volume ART and DOT facilities in Niger State. Participants were drawn from FMC Bida (18.8%), GH Suleja (18.8%), GH Minna (18.8%), UYMH Sabon Wuse (18.8%), GH Bida (12.5%), and IBBSH Minna (12.5%). Respondents consisted primarily of heads of ART and DOT units (37.5% each), while 25.0% were from mental health units. Most participants were male (62.5%), and years of experience ranged from 1 to 14 years. Table 1 summarizes the demographic and professional characteristics of the participants.

Table 1
Demographic Characteristics of KII Participants Across
Selected Facilities in Niger State (N = 16)

Variable	Frequency (n)	Percentage (%)
Facility		
FMC Bida	3	18.8
GH Bida	2	12.5
GH Suleja	3	18.8
GH Minna	3	18.8
IBBSH Minna	2	12.5
UYMH Sabonwuse	3	18.8
Unit		
ART	6	37.5
DOT	6	37.5
Mental Health	4	25.0
Sex		
Male	10	62.5
Female	6	37.5
Length of Service in Current Unit (Years)		
1	1	6.3
2	1	6.3
5	3	18.8
6	1	6.3
9	4	25.0
10	3	18.8
12	1	6.3
14	2	12.5

Availability and Integration of Mental Health Services within ART and DOT Units

Findings from the facility assessment showed that although some facilities had general mental health structures and services at the hospital level, none had a fully integrated mental health programme specifically embedded within the ART or DOT units (Table 2). The available mental health structures largely served the general patient population rather than providing dedicated mental health support for PLHIV and TB patients within HIV/TB clinics. Participants interviewed across facilities similarly described weak integration of mental health services into routine ART and DOT care, with most facilities relying on referrals to separate psychiatric units when mental health-related concerns were identified.

Table 2
Facility-Level Mental Health Structures and Its Integration in Study Sites

Variable	Yes	No
Is mental health programme in the health facility integrated in ART and DOT unit	0	16
Dedicated desk for MH unit in the health facility	4	12
Adequate MH practitioners/workforce in the health facility	4	12
Existence of MH policy and SOP in the health facility	1	15
Dedicated MH budget for the health facility	1	15
Data capturing tools for MH services in the health facility	4	12
Referral directory available intra ART/DOT to MH unit	4	12
Patient safety/security measures in place in the health facility	5	11
Does the MH unit have a safe counselling space with privacy	4	12
MH unit in the facility accessible to non-patients	4	12
Does the MH unit of the facility partner with other MH institutions	2	14
Is MH support group available for patients and healthcare providers in the facility	2	14

Weak Institutionalization of Mental Health within HIV/TB Service Delivery

Respondents described weak integration of mental health into routine HIV and TB care delivery. Mental health activities were largely absent from ART operational structures such as OTZ sessions, viraemia clinics, and client support groups. Participants emphasized that the absence of designated service points, documentation systems, and screening processes resulted in fragmented care pathways in the state.

“Mental health has not been integrated officially into the ART clinic because there is no documentation, no desk providing the services in ART unit, no training.” (KII, ART Unit Head). “There is no screening for mental health in DOT unit; we are also unaware of facilities providing such care in Niger state.” (KII, DOT Unit Head)

Inadequate Workforce Capacity and Limited Psychosocial Support Systems

A major challenge reported was the limited technical competence of ART and DOT staff to identify and manage mental health conditions among clients. Respondents also reported minimal access to training and absence of standardized curricula. Furthermore, participants highlighted the lack of psychosocial support systems for both PLHIV and healthcare workers, especially case managers, despite increasing workload pressures and vicarious trauma.

“The staff do not have the technical capacity to address mental health issues in managing PLHIV.” (KII, ART Unit Head). “No mental health services are provided to case managers or staff in ART clinics, and there is a need for it because a caregiver can become depressed too.” (KII, ART Unit Head).

Weak Mental Health Service Systems, Tools, and Continuity of Care

Participants reported that mental health screening was rarely conducted using standardized tools. Documentation was mostly informal and often restricted to patient folders, limiting access for ART/DOT teams and reducing continuity of care. This contributed to weak tracking of clients requiring psychosocial support or referrals.

“We don’t have screening tools; documentation is only done in the client folder.” (KII, Mental Health Unit Head). “There is no standardized method used in screening clients; actually, they are assessed based on presenting symptoms.” (KII, Mental Health Unit Head).

Discussion

The findings of this study provide important evidence on the current state of mental health service availability and integration within ART and DOT clinics in Niger State, Nigeria, and they align closely with existing literature on the persistent gaps in integrating mental health into HIV and TB care systems in low- and middle-income countries. Overall, the study demonstrates that mental health services remain largely under-developed, weakly institutionalized, and poorly integrated into routine HIV and TB service delivery points, despite growing recognition of the bidirectional relationship between mental health and infectious disease outcomes. This disconnect is reflected both in the quantitative results and the qualitative explanations provided by health workers, indicating a systemic implementation gap between policy intentions and facility-level practice.

A key finding of this study is the near-total absence of formal integration of mental health services within ART and DOT units, with none of the facilities reporting integrated mental health programming. In addition, critical structural components such as dedicated mental health budgets (6.3%), mental health policies and SOPs (6.3%), and dedicated service desks (25%) were largely unavailable. This suggests that mental health care remains peripheral to HIV and TB service delivery rather than embedded within it.

These findings are consistent with previous evidence from Nigeria indicating that many ART and DOT clinics operate without structured mental health screening systems, counselling services, or standardized referral pathways (Ezeanolue et al., 2020). Similarly, Fadele et al. (2024) reported that despite increasing awareness of mental health comorbidities among people living with HIV, service integration remains constrained by limited human resources, weak financing structures, and poor service organization. The current findings reinforce these assertions by demonstrating that even at the facility level, the absence of institutional structures continues to hinder meaningful integration.

The qualitative findings further explain these structural deficiencies by highlighting weak institutional embedding of mental health services within ART and DOT workflows. Participants consistently reported that mental health activities were not formally incorporated into routine HIV care processes such as OTZ sessions, clinic reviews, or client support groups. This reflects a broader systems-level gap in operationalizing integrated care models. These findings align with Adewuya et al., (2025), who noted that although awareness of mental health needs among HIV clients has increased, the translation of this awareness into structured service delivery is limited by inadequate governance and weak implementation frameworks. In line with this, the World Health Organization has emphasized that integration of mental health into primary and chronic disease care requires not only policy commitment but also functional service structures, including financing, staffing, and clear operational guidelines, which appear largely absent in the study settings.

Another important finding relates to workforce capacity and the availability of psychosocial support systems. Only a minority of facilities reported adequate mental health practitioners (25%), and qualitative data revealed significant gaps in staff capacity to identify and manage mental health conditions among clients. Health workers described limited training opportunities and absence of standardized mental health competencies within HIV and TB service delivery. This finding is consistent with Adewuya et al., (2025), who highlighted persistent shortages of trained mental health personnel in Nigeria's healthcare system as a major barrier to integration. It also aligns with broader implementation evidence from sub-Saharan Africa, which shows that task-sharing approaches for mental health are often undermined by insufficient training, weak supervision, and lack of structured support systems for frontline providers (Ezeanolue et al., 2020). Importantly, this study also revealed an additional dimension often overlooked in the literature, namely the absence of psychosocial support for healthcare providers themselves. Participants described emotional strain and lack of mental health support for case managers and ART staff, suggesting that caregiver well-being is not adequately addressed within current service structures.

The study further identified significant weaknesses in service delivery systems, particularly in relation to screening tools, documentation, and monitoring mechanisms. Only 25% of facilities reported the availability of mental health data capturing tools in the mental health, and qualitative findings indicated that mental health screening was largely informal, symptom-based, and undocumented in standardized formats. This reflects a lack of structured mental health assessment within ART and DOT services. These findings are consistent with earlier baseline assessments in Nigeria, which reported the absence

of standardized mental health screening tools and weak integration of mental health indicators into routine health information systems (Nwanja et al., 2025; Ezeanolue et al., 2020). The absence of structured documentation systems limits early identification of mental health conditions and weakens continuity of care for clients requiring psychosocial support. As highlighted in the background literature, individuals living with HIV and TB are at increased risk of depression and anxiety due to psychosocial stressors such as stigma, discrimination, and poverty (Oladejo et al., 2024; Lawal et al., 2023; WHO, 2023), and the absence of systematic screening further exacerbates the risk of untreated mental health conditions.

Further finding from this study is the fragmentation of referral networks and weak inter-facility linkages between ART/DOT units and mental health services. Only a small proportion of facilities reported the availability of referral directories (25%), and qualitative data revealed limited awareness of mental health service points as well as the absence of structured referral pathways. This finding is consistent with global evidence indicating that despite policy recommendations for integrated care, referral systems in low-resource settings remain weak and poorly coordinated (WHO, 2023). Studies have shown that in many sub-Saharan African contexts, referral systems are often informal and dependent on individual provider knowledge rather than standardized protocols, leading to inconsistent referrals and poor continuity of care. Nguyen et al., (2025) have demonstrated that weak bidirectional communication between referring and receiving facilities undermines the effectiveness of integrated mental health care and contributes to patient attrition along the care pathway. The present study reinforces these findings by showing that ART and DOT providers in Niger state lack structured mechanisms for identifying and linking clients to mental health services, resulting in fragmented care pathways and missed opportunities for timely psychosocial intervention.

These findings must also be interpreted within the broader context of the HIV and TB syndemic in sub-Saharan Africa, where co-occurring mental health conditions significantly worsen treatment outcomes. As highlighted in the background literature, mental health disorders such as depression and anxiety are associated with poor adherence to ART and TB treatment, reduced viral suppression, and increased risk of drug resistance (Nguyen et al., 2025; Oladejo et al., 2024). On the other hand, individuals living with HIV and TB are at heightened risk of developing mental health disorders due to chronic stressors, stigma, and biological mechanisms such as neuroinflammation and hypothalamic-pituitary-adrenal axis dysregulation (Lawal et al., 2023; WHO, 2023). Despite this well-established bidirectional relationship, the current study demonstrates that mental health services remain insufficiently integrated into routine care, thereby perpetuating gaps in holistic patient management.

Finally, although Nigeria has made policy progress through the enactment of the National Mental Health Act and alignment with the WHO Comprehensive Mental Health Action Plan (2013–2030), this study demonstrates that implementation at facility level remains weak and uneven. The absence of operational policies, budgets, and functional service structures within ART and DOT clinics highlights a critical implementation gap between national policy and frontline service delivery. This aligns with previous observations that structural reforms at the policy level in Nigeria have not yet translated into consistent

practice within high-volume HIV and TB service delivery points (Fadele et al., 2024). In Niger state specifically, the findings of this study provide much-needed empirical evidence on the current state of mental health integration, filling an important gap in the literature and offering a baseline for future health system strengthening interventions.

In conclusion, the findings of this study demonstrate that mental health service integration within ART and DOT clinics in Niger state remains weak, fragmented, and poorly operationalized. This is evidenced by limited institutional structures, inadequate workforce capacity, weak service systems, and fragmented referral networks. These findings are strongly consistent with existing literature and reinforce the urgent need to strengthen implementation mechanisms for integrated mental health and HIV/TB care. Addressing these gaps will not only require policy commitment but also sustained investment in health system infrastructure, workforce development, standardized tools, and functional referral systems to ensure comprehensive, person-centered care for individuals affected by HIV and TB.

Conclusion

This study demonstrates that mental health service availability and integration within high-volume ART and DOT clinics in Niger state remain suboptimal, reflecting a significant implementation gap between national mental health policy intentions and facility-level practice. Although global and national frameworks emphasize the integration of mental health into HIV and TB care, findings from this study show that such integration has not been operationalized within routine service delivery systems. Health facilities lacked essential components required for effective integration, including structured mental health programmes, dedicated policies and budgets, standardized screening tools, and functional documentation systems. In addition, workforce capacity for mental health service delivery remains limited, while referral pathways and psychosocial support mechanisms for both clients and healthcare workers are weak and poorly coordinated.

These systemic deficiencies contribute to fragmented care delivery and missed opportunities for early identification and management of mental health conditions among people living with HIV and TB. Given the established bidirectional relationship between mental health and HIV/TB treatment outcomes, these gaps may adversely affect treatment adherence, retention in care, and overall clinical outcomes. Strengthening mental health integration will therefore require a comprehensive health systems response that includes improved financing, workforce development, operationalization of national policies, standardized service delivery tools, strengthened referral networks, and effective monitoring systems to support sustainable, person-centered care for individuals affected by HIV and TB.

Recommendations

Based on the study findings, the following recommendations are proposed:

1. Routine mental health screening using standardized tools should be institutionalized within ART and DOT clinics to ensure early identification and management of common mental disorders among

clients.

2. ART/DOT providers should be trained on basic mental health assessment, counselling, and referral using a task-shifting approach, with periodic refresher training and supportive supervision.
3. Facility-level mental health SOPs should be developed in alignment with the National Mental Health Act, with clear implementation guidelines and regular monitoring for compliance.
4. Functional referral systems should be strengthened through the development of standardized referral directories, bidirectional communication mechanisms, and formal partnerships with specialist mental health facilities within Niger state and beyond.
5. Mental health documentation and screening tools should be fully integrated into existing HIV/TB reporting and health information systems to ensure continuity of care and data-driven decision-making.
6. Structured peer-support groups and psychosocial support platforms should be established for both clients and healthcare workers to address psychological distress, stigma, and occupational burnout.
7. State and facility-level authorities should ensure dedicated budget lines and sustainable financing mechanisms for mental health services within HIV and TB programs to support implementation of integrated care.
8. The Federal and State Ministries of Health should strengthen implementation of national mental health policies through supportive supervision, facility audits, and integration of mental health indicators into routine program performance monitoring systems.

Limitations

This assessment was limited to six high-volume facilities in Niger state and may not represent lower-volume facilities. The qualitative findings were based on unit heads and may not capture perspectives of all frontline staff. Additionally, the study assessed service readiness rather than clinical outcomes among patients.

Declarations

Ethics Approval and Consent to Participate

The experimental protocol for this study was approved by Niger State Ministry of Health Research Ethical Review Committee (approval number: ERC PAN/2026/03/7). Administrative approvals were also obtained from relevant state health authorities and facility management teams. Written informed consent was obtained from all participants prior to conducting interviews. Participation was voluntary, and confidentiality was maintained by anonymizing responses and removing personal identifiers. Data were securely stored and accessible only to the research team.

Consent for Publication

Not applicable

Competing Interests

The authors declare that they have no competing interests to report.

Author Contribution

MEE conceptualized the study and wrote the manuscript, including data analysis. IS provided close review and knowledge-sharing support throughout the drafting process. MR, AA, and PK contributed to data collection. OA contributed to the initial conceptualization of the study and development of data collection tools. MS served as state team lead and contributed to linkage with facility teams participating in the study. AE, as chief of party of the project, provided support during data collection. AO reviewed the manuscript. NK provided technical support during the manuscript review. PA served as technical officer during the manuscript review. NIA and EE reviewed the manuscript. All authors read and approved the final manuscript.

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Data Availability

The datasets generated and analyzed during the current study are not publicly available, as they are not deposited in any repository, but are available from the corresponding author on reasonable request. Key informant interview (KII) transcripts cannot be shared in full, as they contain identifying information, including facility names and respondent positions; de-identified excerpts may be made available on request where appropriate.

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