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Service capacity of institutions serving the mental health needs of persons living with HIV in Georgia

Mariam Pashalishvili ^{a,b,c}, Tamar Zurashvili ^{a,b}, Emeli J. Anderson ^{b,d}, Maia Kajaia ^{a,b}, Eka Chkonia ^e, Paata Imnadze ^c, Ramesh Raghavan ^f† and Mamuka Djibuti ^b†

^aFaculty of Medicine, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia; ^bPartnership for Research and Action for Health, Tbilisi, Georgia; ^cNational Center for Disease Control and Public Health, Tbilisi, Georgia; ^dDepartment of Public Health and Policy, BAU Batumi International University, Batumi, Georgia; ^eDepartment of Psychiatry, Tbilisi State Medical University, Tbilisi, Georgia; ^fSilver School of Social Work, New York University, New York, NY, USA

ABSTRACT

This study mapped the availability, integration, and referral patterns of mental health (MH) and substance use disorder (SUD) services for people living with HIV (PLWH) in Georgia. PLWH face a heightened burden of MH conditions, compounded by systemic and social barriers. In Georgia, these challenges are exacerbated by fragmented healthcare system, centralized HIV care, and limited service integration. Cross-sectional survey was conducted between January–August 2024 using a structured questionnaire distributed to 80 institutions across 11 regions of Georgia, including MH centers, HIV-focused NGOs, PLWH treatment and support organizations, and primary healthcare (PHC) centers. Data analysis included descriptive statistics and social network-informed methods. Findings revealed geographic disparities, with services concentrated in urban centers, particularly Tbilisi. Specialized MH institutions provided most clinical MH and SUD services, while HIV-focused organizations delivered treatment and support services. However, formal service protocols for HIV-related MH care were rare. Referral pathways were siloed, showing strong internal linkages among HIV service providers but weak or absent connections with MH and PHC sectors. These findings highlight the urgent need to integrate MH services into HIV platforms and strengthen inter-organizational referrals ensuring comprehensive, person-centered care for PLWH.

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Introduction

People living with HIV (PLWH) are at heightened risk for mental health disorders, including depression and anxiety. A systematic review and meta-analysis of 60 studies revealed a disproportionately high prevalence of these conditions among PLWH (Zhan et al., 2024). Psychiatric multimorbidity is a significant and under-recognized burden among PLWH in low- and middle-income countries, with 11% experiencing symptoms of multiple mental health or substance use disorders (SUD) and 21% reporting unhealthy alcohol use (Parcesepe et al., 2024). PLWH suffering from Alcohol Use Disorders (AUD)/SUD face even greater vulnerabilities due to intersecting social and structural challenges. This issue is particularly concerning in Eastern Europe and Central Asia (EECA), the only region in the world where the HIV epidemic continues to grow (Pape, 2019; Zhao, n.d.). Globally, 7.1% of PLWH with past-year substance use conditions received adequate treatment, with the figure dropping to 1% in LMICs (World Health Organization, 2022a). Although the need for mental health and substance use support is evident, fragmented service delivery and poor coordination between HIV and behavioral health systems continue to hinder effective care and exacerbate health disparities (Nakimuli-Mpungu et al., 2021; Senn et al., 2021; World Health Organization, 2022a). These systemic issues are particularly evident in Eastern Europe and Central Asia (EECA), where

CONTACT Mariam Pashalishvili  mpashalishvili@gmail.com  Faculty of Medicine, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia; Partnership for Research and Action for Health, Tbilisi, Georgia; National Center for Disease Control and Public Health, Tbilisi, Georgia

†MD and RR contributed equally

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the enduring legacy of the Soviet healthcare model has resulted in hospital-centered mental health systems that lack integration with primary or community-based care settings (Winkler et al., 2017). Understanding the capacity of institutions to serve those with mental health needs, and then improving, the coordination of mental health care would be key to improving mental health among PLWH suffering from mental health disorders including AUD/SUD.

Georgia, a post-Soviet country in the Caucasus region with a population of 3.7 million, exemplifies the broader challenges faced in the EECA region (Sulaberidze et al., 2018). While the country has undertaken significant healthcare reforms in recent decades, mental health services remain fragmented and underdeveloped (Makhashvili & Van Voren, 2013; Zoidze et al., 2013). HIV prevalence in Georgia remains relatively low at 0.4% among adults aged 15–49; however, the epidemic is concentrated among key populations (UNAIDS, 2024). Georgia also has one of the highest estimated rates of injection drug use in Eastern Europe, with approximately 2.4% of the adult population reporting a history of injection drug use (Otiashvili et al., 2022). In the EECA region, mental health conditions among PLWH and key populations are highly prevalent, but in Georgia, specific data remain limited (Pashalishvili et al., 2025). Mental health care in Georgia is largely siloed, with services organized around specialized psychiatric clinics and hospitals (Rechel et al., 2014). The Universal Health Coverage Program (UHCP), introduced in 2013, primarily addresses physical health needs, with limited provisions for mental health care (საყოველთაო ჯანდაცვაზე გადასვლის მიზნით გასატარებელ ზოგიერთ ღონისძიებათა შესახებ. მსიპ “საქართველოს მაცხოვრებელთა მხარდაჭერის ევოლუციური პროგრამის აუდიტის ანგარიში.pdf, n.d.). Specialized psychiatric care is funded through the State Program for Mental Health, which provides free inpatient and outpatient psychiatric services, including psychosocial rehabilitation and crisis resolution. However, these services are insufficiently integrated with primary care or social services, leaving significant gaps in accessibility and continuity of care (Sulaberidze et al., 2018; ფსიქიკური ჯანმრთელობის ეფექტიანობის აუდიტის ანგარიში.pdf, n.d.; Wong et al., 2022).

The situation is particularly dire for PLWH with co-occurring mental health and substance use disorders. In Georgia, care for addiction and mental health problems is divided between separate institutions, often requiring patients to first undergo detoxification or addiction treatment before accessing psychiatric care, or vice versa (Chkonia & Kenchadze, 2009). In Georgia, addiction services are delivered by specialists commonly referred to as narcologists. PLWH receive care through a centralized and vertical HIV/AIDS service delivery model, that is, care is concentrated in specialized AIDS centers (i.e., centralized), with services delivered in parallel rather than integrated with other health sectors (i.e., vertically), resulting in minimal coverage and integration of mental health, including AUD/SUD services (Lazarus et al., n.d.). Rehabilitation services for AUD/SUD are often provided in isolation, further limiting the availability of comprehensive, person-centered care (Kirtadze et al., 2013).

Given these challenges, there is a critical need to assess the availability, accessibility, and integration of mental health services for PLWH in Georgia. The aim of this study was to map mental health services, including AUD/SUD services available for PLWH, analyze referral pathways, and evaluate the overall system of mental health care for PLWH using social network informed analysis (SNA), a method that examines the structure and strength of relationships between organizations to better understand how referral and service delivery pathways function (Wasserman & Faust, 1994). By identifying service gaps, referral linkages, and structural barriers, this study provides a comprehensive understanding of how mental health and HIV-related services operate within Georgia's fragmented healthcare system. The findings will contribute to informing policy decisions, improving service coordination, and strengthening person-centered care approaches for these vulnerable populations.

Methods

Study design and setting

This cross-sectional study was conducted from January to August 2024 across a diverse range of healthcare facilities in Georgia that provide mental health, substance use, and HIV-related services. Institutions were selected based on their roles in delivering such services to the general population, including PLWH and key populations (KPs) at increased risk for HIV, in order to ensure comprehensive coverage of the national service landscape. We grouped the facilities as follows:

Group 1 Mental Health institutions comprised: (1) Mental Health Centers, functioning as specialized outpatient facilities, inpatient facilities, or both; (2) Opioid Substitution Therapy (OST) Centers (Medication Assisted Treatment in Georgia is called OST), operating as specialized outpatient facilities; (3) Detoxification Centers-inpatient facilities providing short-term, medically supervised withdrawal management for drug dependence oriented only on abstinence, and (4) Rehabilitation Centers, both categorized as specialized inpatient facilities focused on the treatment of AUD/SUD.

Group 2 Non-governmental organizations (NGOs) and community-based organizations (CBOs) providing services to key populations (KP), which primarily function as low-threshold service providers offering HIV testing, harm reduction, and psychosocial support for key populations.

Group 3 Organizations providing treatment and support to PLWH - it incorporates AIDS centers, which provide HIV treatment and care, function as either inpatient or outpatient medical facilities, while specific CBOs support them by delivering psychosocial support services.

Group 4 Primary Health Care (PHC) centers- classified as outpatient facilities, were incorporated based on expert recommendations due to their role in delivering mental health services to general population. The PHC centers provide treatment for people with common mental disorders, such as mild forms of anxiety disorders and ensure the referral to specialized mental health services for people with moderate and severe mental health problems.

Sampling and recruitment

A comprehensive database of 80 institutions was developed through expert consultations with organizations engaged in HIV, mental health, and substance use services, and review of existing national databases of governmental institutions (Ministry of Justice and Ministry of Internally Displaced Persons from the Occupied Territories, Health, Labor and Social Affairs of Georgia), based on the criteria described above. All identified institutions were contacted via phone and email inviting them to participate in the study. An incentive of 100 GEL (35 USD-01/04/2024) was provided to respondents from the institutions upon completion of the questionnaire. Institutions were informed about the study's objectives, and written informed consent was obtained before participation.

Data collection and management

A structured questionnaire was developed in REDCap containing 25 items and covered three main domains: (A) general characteristics of the institution (e.g., type, ownership, services, staffing); (B) availability, funding, and delivery of mental health, substance use, and HIV-related services tailored to key populations, including PLWH and people who inject drugs; and (C) perceptions, policies, and practices related to HIV stigma and discrimination in mental health and HIV care, as well as referral pathways and inter-organizational collaboration. The questionnaire was primarily shared electronically, though in some cases it was administered in person using a paper version and completed together with the respondent based on their preference. Respondents were allowed to return their completed forms either as scanned paper copies or in Microsoft Word format. The responses were first reviewed on paper for completeness and accuracy. Follow-up calls to institution representatives were made in order to verify and clean the data to address inconsistencies or missing information. Afterwards the data was entered into REDCap and verified to ensure data quality and consistency. For all questions referencing service delivery or caseloads, institutions were instructed to report on activities and utilization during the year 2023. Participants were given three weeks to complete the questionnaire, during which reminder calls were made up to three times to encourage responses.

Ethical considerations

The Institutional Review Board (IRB) of the National Center for Disease Control and Public Health of Georgia approved the study protocol (IRB #2024-012). All participating institutions were informed about the voluntary nature of participation and the confidentiality of their information and they provided informed consent before the interview. The study ensured the anonymity of responses and maintained strict data

confidentiality throughout the data collection and analysis processes. The study strictly followed ethical guidelines, prioritizing the rights of participants and ensuring that their access to services was not adversely affected.

Data analysis

The cleaned dataset was analyzed using R software version 4.4.2 (R: The R Project for Statistical Computing, n.d.). Descriptive statistics were employed to map the distribution and characteristics of mental health and AUD/SUD services across the institutions. This included calculating frequencies and percentages for categorical variables and means, medians, and ranges for numerical data. We also assessed referral patterns for mental health and substance use treatment for PLWH. The results were synthesized to identify gaps, disparities, and trends in mental health service provision across different types of facilities.

The *igraph* package in R was used for the network analysis (Csardi et al., 2024), which involves graphically depicting the relationships (here referrals) between entities (here groups) (Hevey, 2018). We only had in-degree data, defined as whether organizations reported receiving referrals from other facility types. Out-degree data, which captures whether and to whom organizations made referrals, were not collected. Specifically, data were only available on referrals from Group 3 organizations (those providing treatment and services for PLWH) to the others, but not vice versa. We estimated the proportion of Group 3 organizations reporting referrals to each of the other organizational types for mental and/or substance use treatment, as well as to other Group 3 organizations. As a result, the network reflects the flow of referrals into each group of organizations from Group 3, but not the full bidirectional referral structure. This approach provides insight into the relative role of each organizational type as a recipient of referrals from the main HIV service providers in Georgia, but limits assessment of their role as referral senders.

Results

Of the 80 institutions contacted, 51 agreed to participate, resulting in an overall response rate of 63.8%. Response rates were broadly similar across groups: 53.1% of Mental Health Institutions (26 of 49), 84.2% of NGOs/CBOs providing services to key populations (16 of 19), 87.5% of organizations providing treatment and support services to PLWH (7 of 8), and 50.0% of PHC centers (2 of 4) responded.

To better reflect on the service landscape, participating organizations were categorized into four main groups based on the primary populations they served and the nature of services provided as described in methods section.

The majority were (1) Mental Health institutions ($n = 26$, 51.0%), followed by (2) NGOs/CBOs providing services to HIV KPs ($n = 16$, 31.4%), (3) organizations providing treatment and support services to PLWH ($n = 7$, 13.7%), and PHC centers ($n = 2$, 3.9%). Mental Health institutions were further categorized into specific subtypes, including Mental Health Centers ($n = 12$, 23.5%), OST centers ($n = 10$, 19.6%), (4) Detox Centers ($n = 2$, 3.9%), Rehabilitation Centers ($n = 2$, 3.9%). The participating organizations were distributed across 16 cities and 11 regions of Georgia (Figure 1). In East Georgia, the majority were located in Tbilisi (the capital), which accounted for the largest share ($n = 21$, 41.2%). Other cities in the eastern part of the country included Telavi (Kakheti region) ($n = 3$, 5.9%), Rustavi (Kvemo Kartli region) ($n = 2$, 3.9%), Mtskheta (Mtskheta-Mtianeti region) ($n = 1$, 2.0%), Gori (Shida Kartli region) ($n = 2$, 3.9%), and Akhaltsikhe (Samtskhe-Javakheti region) ($n = 1$, 2.0%). In West Georgia, organizations were represented in Kutaisi ($n = 6$, 11.8%), Zestafoni, and Samtredia (both Imereti region) (each $n = 1$, 2.0%), as well as in Batumi and Qobuleti (Adjara) (Batumi $n = 4$, Qobuleti $n = 1$), Zugdidi, Senaki, and Poti (Samegrelo) (Zugdidi $n = 4$, Senaki and Poti each $n = 1$), and Ozurgeti (Guria) ($n = 2$, 3.9%).

Regarding ownership, most of the organizations were private ($n = 40$, 78.4%), while 11 (21.6%) were public. Additionally, 30 organizations (58.8%) identified as branches of a parent organization, with Tbilisi being the most common location of parent organizations ($n = 25$, 92.6%), followed by Gori ($n = 2$, 7.4%).

Regarding inpatient capacity, mental health centers accounted for the majority of beds, with five centers providing a total of 444 beds – 394 designated for mental health disorders and 47 for SUD. Two detox centers offered 37 beds, all dedicated to SUD treatment. Three organizations providing treatment and support to PLWH, categorized as inpatient medical facilities, collectively provided 33 beds but did not allocate any



Diagnosis and treatment of mood, anxiety, psychotic disorders, and dementia are almost exclusively conducted by Mental Health Institutions (Group 1) and PHC centers (Group 4). It should be noted within Group 1, diagnostic and treatment services are limited to Mental Health Centers, with OST centers, detoxification, and rehabilitation facilities not providing such care. Only one NGO/CBO serving KPs (Group 2) mentioned about providing diagnosis and treatment of mood disorders and anxiety. Group 3 mentioned providing diagnosis and medical treatment services only for anxiety. Medical treatment for these disorders is primarily state-funded, with minimal out-of-pocket costs and some donor contributions. The treatment of AUD and SUD is primarily delivered by Mental Health Institutions (Group 1). While SUD services are provided across all subtypes of this group, AUD treatment is not available in OST centers. A small proportion of NGOs/CBOs serving key populations (Group 2) reported offering AUD/SUD services. No diagnosis or treatment for AUD or SUD was reported by organizations providing treatment and support

services to PLWH (Group 3) or by PHC centers (Group 4). Funding for SUD services involves a combination of state, out-of-pocket, and donor sources, whereas AUD services are predominantly financed through out-of-pocket payments, supplemented by limited donor support.

Cognitive-behavioral therapy (CBT) is primarily available in Mental Health Institutions (Group 1), excluding OST centers, and is also offered in some PHC centers (Group 4) and to a lesser extent by NGOs/CBOs serving key populations (Group 2). Dialectical-behavioral therapy (DBT) is available in selected Mental Health Institutions (Group 1), excluding OST and rehabilitation centers, as well as within a few NGOs/CBOs serving KPs (Group 2). CBT is predominantly funded out-of-pocket, with limited state and donor support, while DBT receives a mix of donor and state funding. Psychoeducational therapy is more widely available, provided across all organizational groups, with mixed support from state and donor sources. Short-term psychosocial interventions (defined as less than two months in duration) are primarily delivered by all subtypes of Mental Health Institutions (Group 1) and some NGOs/CBOs serving KPs (Group 2), supported by state, donor, and out-of-pocket funding. Long-term psychosocial interventions (over two months) are only available in Mental Health Institutions (Group 1), excluding Detox Centers, and are primarily self-funded with minimal state investment. Group and individual therapy are offered across all organization groups, though individual therapy relies more heavily on out-of-pocket payments. Online counseling is similarly available across institution types and follows the same funding model.

Mental health services specifically tailored for PLWH were limited across facility types. Neurocognitive testing was available only at select Mental Health Institutions (Group 1), with no provision reported in other facility groups. Individual therapy for PLWH was offered by Mental Health Institutions (Group 1), – excluding Detox Centers – as well as by some organizations providing treatment and support to PLWH (Group 3) and a minority of NGOs/CBOs providing services to key populations (Group 2). Crisis intervention services were reported by one Mental Health Center (Group 1), one NGO/CBO (Group 2), and the majority of PLWH-serving organizations (Group 3). Group therapy was accessible at certain Mental Health Institutions (Group 1), – again excluding Detox Centers – as well as in most organizations supporting PLWH (Group 3), and in one NGO/CBO (Group 2). Family therapy was offered predominantly by PLWH-serving organizations (Group 3), with limited availability in NGOs/CBOs (Group 2), and none reported among Mental Health Institutions (Group 1). No facilities classified as PHC centers (Group 4) reported providing any services specifically tailored to PLWH. Funding patterns varied by service type: crisis intervention was primarily donor-supported with minimal state investment, while family therapy was entirely funded by donors. Other services – such as neurocognitive testing, individual therapy, and group therapy – followed general funding trends, relying on a mix of state, donor, and out-of-pocket contributions.

Referrals

Figure 2 illustrates referral patterns from organizations providing treatment and support for PLWH (Group 3) to other service sectors for different mental health and substance use treatment services. Over half of Group 3 organizations ($n = 5$) reported referrals to NGOs/CBOs providing services to KPs (Group 2; 71%) and to other Group 3 organizations (57%). The latter primarily reflects AIDS centers referring clients to CBOs that provide psychosocial support to PLWH. About 43% of Group 3 organizations reported referring PLWH to mental health centers or drug treatment centers (Group 1). There were no reported referrals from Group 3 organizations to primary care centers. While back-referral data were not collected in this study, the existing centralized nature of HIV care in Georgia, where individuals diagnosed with HIV predominantly remain within specialized AIDS service organizations, suggests that referrals from other health sectors back into HIV care is not formalized.

Service utilization, guidelines and trainings

Four organizations, including three Mental Health Centers (Group 1) and one PHC center (Group 4), reported that they did not serve any PLWH in 2023. An additional 22 facilities indicated they were unaware of their patients' HIV status; this group comprised 10 NGOs/CBOs providing services to key populations (Group 2), 11 Mental Health Institutions (Group 1), and one PHC center (Group 4). Among the remaining

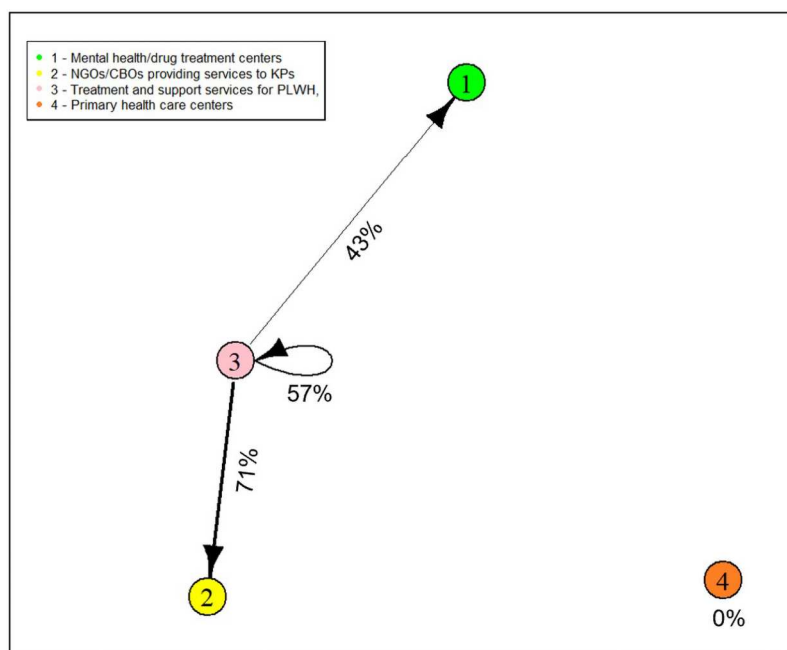


Figure 2. Referrals for mental health or substance use treatment services from organizations providing treatment and support to PLWH. The edge thickness (lines in the figure) represents the proportion of Group 3 organizations reporting referrals to other types of organizations. Note the arrow from Group 3 to itself; this indicates that Group 3 organizations also referred to other Group 3 organizations for mental health and substance use treatment for PLWH.

25 organizations that reported service provision to PLWH in 2023, facilities from Group 1 included eight OST centers that collectively served 44 PLWH, three Mental Health Centers that reported serving 189 PLWH, and one Detox Center that served three PLWH. All organizations categorized under Group 3 (providing treatment and support services to PLWH) reported serving PLWH, with a combined total of 8,072 individuals. Additionally, six NGOs/CBOs from Group 2 reported serving 37 PLWH in 2023.

Among the 51 organizations surveyed, only one reported having guidelines or protocols for providing mental health services to PLWH, representing just 1.9% of the sample. Although, this organization, did not specify the details of these guidelines or protocols. Regarding the presence of written guidelines to protect PLWH patients, aimed at reducing HIV-related stigma and discrimination, safeguarding confidentiality, and ensuring informed consent and privacy in service delivery, 25.49% of organizations ($n = 13$) reported having such guidelines in place. However, the availability of these guidelines varied by organization type. Fewer than one in five of NGOs/CBOs serving key populations (Group 2), reported having such guidelines. In contrast, more than half of organizations delivering treatment and support services to PLWH (Group 3) indicated that they had established guidelines. Additionally, slightly more than one-fifth of Mental Health Institutions (Group 1) – primarily OST centers – reported having such policies in place. Notably, no PHC (Group 4) centers reported the presence of written guidelines to protect PLWH.

The availability of staff training varied across organizations, with NGOs/CBOs providing services KPs (Group 2), and organizations providing treatment and support services to PLWH (Group 3) consistently reporting higher participation in training programs compared to other facility types. Staff training on patients' informed consent, privacy, and confidentiality was the most widely implemented, with 57.0% of organizations ($n = 29$) offering it, followed by infection control and universal precautions, including post-exposure prophylaxis (49.0%, $n = 25$), and HIV stigma and discrimination (43.1%, $n = 22$). In each of these areas, the majority of NGOs/CBOs and PLWH (Group 3) support organizations reported conducting training, while mental health Institutions (Group 1) showed lower participation – more than half had training on informed consent and confidentiality, approximately one-third on infection control, and about one-fifth on HIV stigma and discrimination. Training on key population HIV stigma and discrimination was the least common (31.4%, $n = 16$), primarily reported by NGOs/CBOs (Group 2) and PLWH support organizations (Group 3), with only two mental health institutions (Group 1) – a mental health center and a

detox center – offering it to their staff members. Notably, no PHC (Group 4) centers provided any of these trainings.

Discussion

This study provides a national landscape of MH service provision for PLWH in Georgia, including those with co-occurring MH disorders and AUD/SUD, revealing considerable variation in service capacity, funding models, and care integration across organizational types and regions. The findings highlight a fragmented system with significant disparities in service availability, quality, and integration, which pose substantial barriers to comprehensive, person-centered care for PLWH. The discussion below combines the empirical findings of this study with the authors' contextual knowledge of Georgia's health system, recognizing that the dearth of published literature on this topic necessitates contextual interpretation to highlight the results and their implications.

Several critical themes emerge from the findings, with significant implications for equity, quality, and sustainability of care.

Geographical maldistribution and access inequities

The concentration of services in Tbilisi, where nearly half of all participating organizations are located, underscores a persistent problem of geographic maldistribution. Rural and mountainous regions, such as Racha, remain profoundly underserved. This uneven distribution restricts timely access to care, exacerbates existing travel burdens, and raises concerns about confidentiality, particularly in smaller communities where HIV-related stigma remains pronounced. For PLWH, who may already experience social marginalization, these barriers can discourage service utilization and disrupt continuity of care – factors known to impact mental health and HIV outcomes (Burke et al., 2025; Kagee et al., 2011; Reif et al., 2006; Spicer et al., 2011; Syed et al., 2013). To address these disparities, targeted investments are needed to expand integrated, community-based mental health and HIV services in underserved regions, particularly through mobile outreach and task-shifting models, which have been shown to improve service accessibility and engagement among marginalized populations in resource-limited settings (Giebel et al., 2024; Guidance on community mental health services: Promoting person-centred and rights-based approaches, n.d.).

Integrated care within HIV-focused organizations

In Georgia, mental health services are primarily delivered through Mental Health Centers, with additional support from PHC centers and NGOs/CBOs providing services to KPs and organizations providing treatment and support services to PLWH. Specialized facilities such as OST centers, detox centers, and rehabilitation centers focus mainly on AUD/SUD, playing a narrower but important role. Over time, service delivery has shifted from the traditional mental hospital model to predominantly ambulatory care provided by private specialty institutions. While this transformation reflects broader mental health system reforms, it presents new challenges for PLWH, who often access services through HIV-focused organizations outside of the specialty mental health sector. The lack of integration between these two systems hampers care coordination, resulting in missed opportunities for early intervention and complicating the management of co-occurring mental and physical health conditions (Chuah et al., 2017). Evidence from a scoping review indicates that integrating mental health services into HIV care can lead to improved diagnosis and treatment of mental disorders, reduced substance use, enhanced social functioning, decreased self-reported HIV stigma, and overall better mental health outcomes for PLWH (Conteh et al., 2023).

A key finding of this study is that the majority of mental health care for PLWH – including those with co-occurring MH disorders and AUD/SUD – is provided by HIV-focused NGOs and CBOs providing services to key populations (Group 2) and organizations providing treatment and support services to PLWH (Group 3), rather than by traditional mental health institutions (Group 1) or PHC facilities (Group 4). Although these organizations offer fewer clinical services, they often provide more culturally competent, peer-led, and stigma-sensitive care. This integrated and community-based model aligns with global

recommendations for embedding mental health services within HIV care and may offer a more trusted and accessible environment for PLWH (World Health Organization, 2022b).

To strengthen the delivery of MH services for PLWH in Georgia, including those with co-occurring MH disorders and AUD/SUD, policy efforts should prioritize the formal integration of mental health care into existing HIV service platforms, particularly within community-based and peer-led organizations that already serve as trusted points of access for marginalized populations. Evidence shows that task-sharing approaches – where non-specialist health workers are trained to deliver basic mental health interventions – are both feasible and effective in resource-constrained settings, improving access to care and reducing psychological distress among PLWH (Hoeft et al., 2018). In parallel, strengthening care coordination mechanisms – such as shared care plans, referral tracking systems, and regular multidisciplinary case reviews – can enhance continuity of care across sectors and reduce service fragmentation (Chuah et al., 2017; Gowar & Trust, n.d.). Embedding these components within a broader person-centered and rights-based framework, as recommended by the World Health Organization (WHO), can ensure that mental health care is not only accessible but also aligned with the holistic needs of PLWH (World Health Organization, 2022a; 9789240043176-eng.pdf, n.d.).

Service availability and quality of care

Despite resource constraints, the overall service array appeared robust, with a heterogeneous mix of organizations offering a range of interventions, from CBT to crisis intervention and online counseling. However, this service richness is largely concentrated within Mental Health Institutions (Group 1), where clinical staff capacity is highest. These facilities are primarily responsible for diagnostic and therapeutic services for mood, anxiety, and psychotic disorders, yet many do not serve PLWH or are unaware of their clients' HIV status – suggesting missed opportunities for integrated care. In contrast, PHC centers (Group 4) appear largely disengaged from mental health service delivery for PLWH. Though they provide some general psychiatric care, none reported tailored services or training initiatives, underscoring the limited role of primary care in addressing MH needs within this population. The staffing patterns observed across the four organizational categories reflect broader differences in service priorities and models of care. NGOs and CBOs serving key populations rely heavily on community-based and peer-led approaches, which is consistent with their role in building trust and providing low-threshold services. In contrast, organizations supporting PLWH are more medically oriented, with nursing staff forming the backbone of care; however, the limited presence of mental health professionals and the absence of narcologists (addiction specialists) point to critical gaps in addressing co-occurring conditions. Mental health facilities, by comparison, maintain the most diverse staffing mix, with psychiatrists, psychologists, narcologists, nurses, and social workers, positioning them to address complex clinical needs – but often without systematic linkages to HIV services. These differences underscore how institutional roles and staffing configurations shape the extent to which mental health and substance use needs of PLWH can be met within the current system.

While some MH services are offered by various types of institutions, there is limited evidence that they are delivered in alignment with best practice guidelines. Only one organization reported having formal, written protocols for MH care for PLWH, and under 26% had written policies to protect PLWH. In this context, such guidelines should ideally include standardized protocols for screening and treatment of common mental health and substance use disorders in service delivery settings, clearly defined referral pathways between HIV, primary care providers and mental health providers, and explicit protections to reduce HIV stigma, safeguard confidentiality, and ensure informed consent and privacy (World Health Organization, 2022a). Moreover, HIV stigma-related training was notably scarce among Mental Health Institutions (Group 1) and PHC centers (Group 4) organizations, with HIV-focused NGOs and CBOs providing services to key populations (Group 2) and organizations providing treatment and support services to PLWH (Group 3) facilities leading on staff education regarding informed consent, confidentiality, and HIV related stigma reduction. These disparities highlight significant concerns about care quality and standards-congruence, especially within clinical MH institutions.

To improve the quality and consistency of MH services for PLWH in Georgia, including those with co-occurring MH disorders and AUD/SUD, especially within clinical and primary care settings, greater emphasis is needed on the development and implementation of evidence-based protocols, supportive

supervision, and functional referral systems that ensure continuity and accountability in care. The near absence of HIV-specific mental health protocols and the limited uptake of HIV related stigma-reduction training within Mental Health Institutions (Group 1) and PHC centers (Group 4) underscores a critical gap. Expanding provider training on HIV-related stigma, confidentiality, and the clinical management of HIV-MH comorbidities will be essential – particularly in organizations with high diagnostic capacity but low engagement with PLWH. As recommended by the WHO, scaling up people-centered, rights-based approaches that integrate mental health into HIV and primary care systems can enhance both service quality and reach, especially when coupled with community engagement and task-sharing models (World Health Organization, 2022b). Strengthening these components is vital to ensure that the available services are not only diverse, but also safe, inclusive, and clinically effective for all patients, including PLWH.

Referrals

The referral patterns identified through our social network informed analysis reveal important insights into the fragmentation and clustering of service provision for PLWH in Georgia. While there is evidence of relatively strong referral ties between AIDS centers and CBOs serving key populations, likely a product of long-standing collaboration under HIV prevention programs, linkages to other essential health sectors remain weak. Notably, no referrals to PHC were reported, and only a minority of organizations indicated referring clients to mental health or substance use treatment services. This reflects a siloed system, where clients are efficiently circulated within the HIV service network but rarely connected to broader care pathways that are essential for managing comorbid mental health and substance use disorders. Importantly, the purpose of this analysis was also to identify “isolates” in the referral network, and our findings show that primary care centers, in particular, remain largely disconnected. This highlights the relative lack of attention to the broader healthcare needs within the current system. To address these gaps, future efforts should prioritize more robust social network analyses with comprehensive, bi-directional data collection across health and social service sectors. Additionally, strengthening the referral system will require formalized partnerships between HIV, PHC, and mental health providers, improved digital tracking mechanisms, and regular intersectoral coordination to ensure PLWH receive integrated, continuous and patient-centered care.

Financing and sustainability

A critical structural issue is the financing of MH services in Georgia. A fragmented financing model poses a significant barrier to sustainable MH care for PLWH in the country. While some core MH treatments (such as those for mood disorders, anxiety, psychotic disorders, dementia, SUD) receive state funding, a large proportion of essential psychosocial and behavioral interventions, including counseling, peer support, and long-term therapy, rely on out-of-pocket payments or external donor support. This creates substantial inequities in access, particularly for vulnerable populations. The absence of comprehensive and consistent state investment is especially problematic given that HIV and MH conditions are chronic, often co-occurring, and syndemic in nature – requiring integrated, continuous care over time (Singer et al., 2017). Without reliable domestic financing, programs are vulnerable to interruptions, workforce attrition, and reduced service scope once external funding ends, compromising both care quality and population health outcomes.

To promote long-term sustainability and equity in HIV and MH services, Georgia’s health financing strategy should incorporate MH care for PLWH into national and subnational budgetary frameworks. Evidence from middle-income countries demonstrates that integrating mental health into universal health coverage (UHC) packages and social protection schemes significantly increases service uptake, reduces financial hardship, and improves clinical outcomes for individuals with chronic and comorbid conditions (105052-WP-PUBLIC-wb-background-paper.pdf, [n.d.](#); Chisholm et al., 2016). In addition, establishing public-private partnerships and co-financing mechanisms could further enhance resource mobilization and strengthen health systems, thereby supporting the continuity and sustainability of HIV and mental health services (Derlega et al., 2002).

Limitations

This study has several limitations. First, data on referral patterns were collected at the organizational group level rather than at the level of individual institutions. Specifically, participating organizations reported whether they received referrals from certain types of facilities, rather than identifying specific referring institutions. Consequently, it was not possible to construct a complete social network with each organization represented as a distinct node. This approach may obscure nuanced referral dynamics and heterogeneity within groups. Nevertheless, it provides a useful approximation of broader referral flows between categories of service providers. Second, the referral analysis relied solely on in-degree data. Because out-degree data were not collected, the study could not capture the complete bidirectional structure of referral networks or fully assess the centrality of organizations within them. Still, the available data offer valuable insights into the roles certain provider types play as referral recipients in Georgia's mental health and HIV care systems. Third, while the study aimed to provide a comprehensive assessment of the mental health and HIV-related service landscape in Georgia, the findings are not fully generalizable to the national level, particularly for Mental Health Institutions (response rate 53.1%), PHC centers (response rate 50.0%). With a response rate of 63.8%, there is a risk of non-response bias, particularly if non-participating institutions differed meaningfully in their service offerings or referral practices and further research is needed to assess referral volume, appropriateness, and follow-up. However, evidence from the literature suggests that lower response rates do not necessarily result in bias (Hendra & Hill, 2019). Accordingly, the results should be interpreted with caution and not assumed to reflect the practices of all relevant institutions across the country.

Conclusion

This study mapped the provision of mental health, substance use, and HIV-related services for PLWH in Georgia, revealing major gaps in access, integration, and quality of care. Services remain fragmented, with inadequate referral pathways between HIV-focused and mental health institutions. PLWH often rely on community-based organizations for support, while PHC centers and clinical providers are underutilized. Referral pathways are siloed, and standardized protocols are lacking. To improve care, Georgia should prioritize integrating MH services into HIV platforms, especially in community and PHC settings, expand provider training, and strengthen referral pathways. Sustainable domestic financing is essential to reduce reliance on donor funding and ensure long-term, person-centered care for PLWH with MH and AUD/SUD needs.

Contributions

The study was conceptualized by RR and MD during the proposal development stage. MP led the study design, data analysis, and manuscript writing, managing the overall direction and execution of the research project. TZ and MK contributed to the study design and planning. TZ also supported data analysis and assisted with manuscript editing, focusing on the results and discussion sections. EA contributed to the social network analysis (SNA), data interpretation, and ensuring methodological rigor. PI facilitated institutional engagement and data collection by coordinating communication and securing official NCDC endorsement. ECH contributed by facilitating stakeholder engagement and supporting implementation processes. RR and MD offered key revisions to enhance the manuscript's intellectual content, particularly in the discussion section. MD, as the principal recipient of the funding, oversaw the study's implementation and design, supported funding acquisition, and critically reviewed and edited the manuscript. All authors contributed to data interpretation, reviewed the manuscript for intellectual content, and approved the final version.

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Author contributions

CRedit: **Mariam Pashalishvili**: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing; **Tamar Zurashvili**: Conceptualization, Formal analysis, Methodology, Writing – review & editing; **Emeli J. Anderson**: Methodology, Writing – review & editing; **Maia Kajaia**: Methodology, Project administration; **Eka Chkonia**: Project administration, Writing – review & editing; **Paata Imnadze**: Project administration, Writing – review & editing; **Ramesh Raghavan**: Conceptualization, Methodology, Project administration, Writing – review & editing; **Mamuka Djibuti**: Conceptualization, Data curation, Methodology, Project administration, Writing – review & editing.

Data availability

The data that support the findings of this study are available from the corresponding author MP upon reasonable request.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Ethics approval and consent to participate

The study received approval from the National Center for Disease Control and Public Health of Georgia IRB (certificate RB #2024-012). Informed consent was obtained from all participants, emphasizing voluntariness and confidentiality. Measures were in place to ensure confidentiality, including staff agreements, training and unique identifiers. The study adhered to ethical standards, respecting participants' rights.

ORCID

Mariam Pashalishvili  <http://orcid.org/0009-0000-0694-9215>
 Tamar Zurashvili  <http://orcid.org/0009-0005-0384-5249>
 Emeli J. Anderson  <http://orcid.org/0000-0001-5218-1390>
 Maia Kajaia  <http://orcid.org/0000-0002-0270-607X>
 Eka Chkonia  <http://orcid.org/0000-0002-8817-9679>
 Paata Imnadze  <http://orcid.org/0000-0002-5788-3487>
 Ramesh Raghavan  <http://orcid.org/0009-0002-2327-2896>
 Mamuka Djibuti  <http://orcid.org/0000-0002-1614-854X>

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