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Internalized HIV Stigma as a Predictor of Depression and Anxiety among Adults Receiving Antiretroviral Therapy in Nigeria

Priya N. Sharma[1]*, Rakesh K. Verma[1], Neha S. Iyer[1]

[1]Department of Psychology, School of Social Sciences, University of Delhi, Delhi, India.

***E-mail** ✉ priya.sharma@gmail.com

Abstract

Understanding the extent of internalized stigma and psychological distress among people living with HIV (PLWH) is essential for identifying individuals who may require focused mental health support. This cross-sectional investigation examined the level of internalized HIV stigma (IHS) and the burden of depression and anxiety among 405 adults receiving HIV care in selected health facilities in Akwa Ibom State, Nigeria. Data were obtained from participants during routine clinic visits using standardized self-report instruments. Internalized HIV stigma was assessed with a two-item measure adapted from the Functional Assessment of HIV Infection (FAHI). Symptoms of depression and anxiety were evaluated using the Patient Health Questionnaire-9 (PHQ-9) and the Generalized Anxiety Disorder-7 (GAD-7), respectively. The survey was conducted between October and November 2023, and data analysis was performed using SPSS version 25.0.

A substantial proportion of respondents (77.8%) indicated reluctance or difficulty in disclosing their HIV status. High levels of internalized stigma were identified in 31.9% of participants. While most respondents did not report depressive symptoms (69.9%), severe depression was observed in 16.5% of the sample. Similarly, 72.1% reported no anxiety symptoms, whereas 17.3% experienced severe anxiety. Multivariate analysis showed that age, length of time on antiretroviral therapy, and participation in HIV support groups were significant determinants of depressive symptoms. In contrast, anxiety symptoms were significantly associated with age and duration of antiretroviral treatment. Internalized HIV stigma demonstrated a strong positive association with both depression ($rs = 0.63$, $p < 0.001$) and anxiety ($rs = 0.64$, $p < 0.001$). Internalized HIV stigma remains a significant concern among people living with HIV in this setting, despite a comparatively lower prevalence of reported depression and anxiety. These findings highlight the importance of integrating stigma-reduction strategies and mental health services, including both psychosocial and pharmacological approaches, into routine HIV care.

Keywords: HIV, Depression, Anxiety, Nigeria

Introduction

Human immunodeficiency virus (HIV) remains a major global public health challenge. Estimates from the Joint United Nations Programme on HIV/AIDS (UNAIDS) indicate that approximately 39.9 million individuals were living with HIV worldwide in 2023, with nearly two-thirds residing in sub-Saharan Africa [1]. Nigeria is among the three countries contributing the largest proportion of the global HIV burden, accounting for roughly 60% of new infections and 54% of AIDS-related deaths each year [2]. National estimates place HIV prevalence among adults aged 15–49 years at 2.1%, translating to an estimated 2 million people living with HIV (PLWH) in Nigeria as of September 30, 2021 [3].

HIV is also characterized by pervasive social stigma [4]. HIV-related stigma encompasses unfavorable attitudes, social disapproval, and discriminatory actions directed toward individuals living with or perceived to be at risk of HIV infection [5]. This stigma is further intensified by moral judgments associated with sexual behavior, substance use, and same-sex relationships [6, 7]. Many PLWH internalize these societal attitudes, which can lead

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to self-directed blame and negative self-perception [8]. Internalized HIV stigma refers to the process by which individuals accept and apply stigmatizing beliefs about HIV/AIDS to themselves [8, 9]. Long before diagnosis or the initiation of antiretroviral therapy, individuals often absorb prevailing societal views about HIV; consequently, an HIV diagnosis may reinforce expectations of rejection and social exclusion [9]. Such internalized stigma is associated with feelings of shame, reluctance to disclose HIV status, social withdrawal, and emotional distress, and it may hinder engagement with HIV care and treatment services [8, 10]. Fear of rejection by sexual partners can also discourage disclosure, reduce condom use, and undermine adherence to antiretroviral therapy, thereby increasing the risk of HIV and other sexually transmitted infections [11–13]. Individuals experiencing high levels of internalized stigma frequently perceive themselves as marginalized or devalued, which can negatively affect self-esteem, emotional well-being, and mental health [8, 14]. Factors associated with internalized stigma have been broadly categorized into psychological factors (such as depression, anxiety, and quality of life), health-related behaviors and outcomes (including treatment uptake, adherence, and overall health), social factors (such as social support, community involvement, perceived stigma, and disclosure), and socio-demographic characteristics (including age, sex, and educational attainment) [15]. However, empirical findings on how these factors relate to internalized stigma have been inconsistent, with studies reporting both positive and negative associations [10, 15].

Mental health is a multidimensional concept encompassing emotional states, cognitive functioning, and behavioral patterns that shape how individuals experience and respond to their environment [16]. PLWH are particularly vulnerable to common mental health conditions [17], with depression being the most frequently reported disorder [18, 19]. Research has shown that both the prevalence and severity of depression are higher among PLWH than among individuals without HIV [20], and these burdens are more pronounced in low- and middle-income countries than in high-income settings [21]. Several factors contribute to the heightened risk of depression among PLWH, including experiences of stigma, the lifelong demands and side effects of antiretroviral therapy, coexisting medical conditions, HIV-related neurological effects, diminished social support, and concerns about early mortality [22–24]. Mental health disorders in this population have been linked to suboptimal treatment adherence, reduced engagement in self-care, accelerated disease progression, impaired quality of life and functioning, and increased mortality [25–27]. Additionally, psychological distress has been associated with less favorable attitudes toward HIV prevention and transmission [28]. Evidence consistently demonstrates a positive association between internalized HIV stigma and psychological distress among PLWH [4, 10].

Within the Nigerian sociocultural context, sexual activity outside marriage is widely viewed as incompatible with prevailing religious and moral values. Furthermore, populations such as sex workers, people who inject drugs, men who have sex with men, and transgender individuals face pronounced societal marginalization. Consequently, HIV diagnoses within these groups often attract limited empathy and may exacerbate experiences of psychological distress and internalized stigma [29]. Given that heterosexual transmission accounts for more than three-quarters of new HIV infections in Nigeria and that infection rates are rising among key populations [30, 31], examining internalized stigma and mental health outcomes among PLWH is particularly important. This study therefore sought to assess internalized HIV stigma, depressive symptoms, and anxiety symptoms among PLWH receiving care in selected Nigerian hospitals. In addition, the study aimed to identify predictors of depression and anxiety and to explore the relationship between internalized stigma and mental health outcomes in this population.

Materials and Methods

Study context, design, and eligibility

This investigation adopted a descriptive cross-sectional approach and was implemented within HIV treatment clinics of three state-owned secondary healthcare facilities situated in the three senatorial districts of Akwa Ibom State: Eket General Hospital, Ikot Ekpene General Hospital, and Ituk Mbang General Hospital. Although Akwa Ibom State was previously reported to have the highest HIV prevalence in Nigeria in 2018 [32], more recent national data indicate that the state now ranks third in HIV prevalence [3]. Each of the selected facilities attends to an estimated minimum of 200 people living with HIV (PLWH) weekly through their HIV clinics.

Sample size determination was performed using an online calculator [33], yielding a minimum requirement

of 377 participants based on a 95% confidence interval, a 5% margin of error, an assumed population of 20,000 PLWH (given the absence of precise figures for individuals on antiretroviral therapy at the time of the study), and a response distribution of 50%. To enhance analytical precision and statistical robustness, the recruitment target was increased to 450 participants. Inclusion criteria comprised adults aged 18 years or older with a confirmed HIV diagnosis who had received antiretroviral therapy for at least one month and provided written informed consent.

Measurement tools

Three standardized instruments were employed to collect study data: a two-item scale assessing internalized HIV stigma [4], the Patient Health Questionnaire-9 (PHQ-9) for depressive symptoms [34], and the Generalized Anxiety Disorder-7 (GAD-7) scale for anxiety symptoms [35].

Internalized HIV stigma was measured using two items derived from the HIV-related concerns domain of the Functional Assessment of HIV Infection (FAHI) questionnaire [36]. The FAHI is a 55-item quality-of-life instrument developed for PLWH and consists of six domains, including physical health, emotional well-being, functional status, social and family relationships, patient–provider interaction, and HIV-specific concerns. Respondents rate each item on a five-point Likert scale ranging from 0 ("not at all") to 4 ("very much") based on experiences in the preceding week. The two selected items ("I am embarrassed by my illness" and "It is hard to tell others about my HIV infection") were summed to produce a stigma score between 0 and 8, with higher scores reflecting greater internalized stigma. Scores were categorized as low (0–2), moderate (3–5), or high (6–8). The internal consistency of this measure in the present study was acceptable (Cronbach's alpha = 0.65).

Depression was assessed using the PHQ-9, a nine-item self-report instrument aligned with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for depressive disorders. Participants indicated the frequency of each symptom over the preceding two weeks using four response options scored from 0 to 3. Aggregate scores ranged from 0 to 27, with higher scores indicating increasing symptom severity. Depression severity was classified as mild (5–9), moderate (10–14), moderately severe (15–19), or severe (≥20) [34]. The PHQ-9 demonstrated excellent reliability in this study (Cronbach's alpha = 0.99).

Anxiety symptoms were evaluated using the GAD-7, a brief screening tool consisting of seven items scored on a four-point scale from 0 ("not at all") to 3 ("nearly every day"). Total scores ranged from 0 to 21, with established thresholds for mild (5–9), moderate (10–14), and severe (≥15) anxiety symptoms [35]. The GAD-7 has also been shown to identify other anxiety-related disorders, including panic disorder, social anxiety disorder, and post-traumatic stress disorder [37]. In this study, the scale showed excellent internal reliability (Cronbach's alpha = 0.99).

Data collection procedures

Participant recruitment occurred during routine clinic days. After the daily HIV health education sessions, the principal investigator or trained research assistants provided a group explanation of the study's objectives, relevance, and voluntary nature. Individuals who met eligibility criteria were subsequently invited to participate and were given paper-based questionnaires to complete while awaiting clinical consultations.

Most participants completed the questionnaires independently. However, individuals with limited literacy or without appropriate reading aids received assistance from trained research assistants, who read the questions aloud verbatim and documented the responses. Socio-demographic information, including age, sex, marital status, educational attainment, and employment status, was obtained through self-report. Information regarding duration of antiretroviral therapy was extracted from medical records. Participants were enrolled using a consecutive convenience sampling technique. Data collection was conducted between October and November 2023.

Statistical analysis

Data management and analysis were performed using SPSS version 25.0 (IBM Corp., Armonk, NY). Descriptive statistics were used to summarize participant characteristics and key study variables. Normality testing using the Kolmogorov–Smirnov test indicated that distributions of internalized HIV stigma, depression scores, and anxiety scores deviated from normality. Consequently, non-parametric statistical methods—including the Mann–Whitney U test and Kruskal–Wallis H test—were applied to examine associations between participant characteristics and mental health outcomes.

Binary logistic regression models were subsequently constructed to identify independent predictors of

depressive and anxiety symptoms. Variables demonstrating statistical significance in bivariate analyses were included as predictors in the regression models. For regression analyses, PHQ-9 scores were dichotomized into absence (0–4) or presence (5–27) of depressive symptoms, while GAD-7 scores were dichotomized into absence (0–4) or presence (5–21) of anxiety symptoms. Associations between internalized HIV stigma and symptoms of depression and anxiety were assessed using Spearman's rank-order correlation. Missing observations were addressed using listwise deletion, and statistical significance was determined at a threshold of $p < 0.05$.

Results and Discussion

Across the three study sites, 450 people living with HIV were invited to take part in the survey. Usable responses were obtained from 405 participants, corresponding to a participation rate of 90%. Women constituted a slight majority of the study population (55.6%). Most respondents reported no involvement in any formal HIV support group (94.8%), while slightly more than half indicated that they had revealed their HIV status to at least one individual outside the healthcare setting (56.0%). The socio-demographic and clinical profile of the study population is summarized in **Table 1**.

Table 1. Socio-demographic and clinical characteristics of respondents (N = 405)

Variable	Category	Percent (%)	Frequency
Age (years)	Under 30	22.2	90
	30–39	28.6	116
	40–49	24.0	97
	50 or older	25.2	102
Gender	Male	44.4	180
	Female	55.6	225
Highest level of education	No formal education	14.6	59
	Tertiary education	41.7	169
	Secondary education	37.5	152
	Primary education	6.2	25
Marital status	Single	46.2	187
	Widowed or divorced	11.4	46
	Married	42.5	172
Duration on antiretroviral therapy (years)	1 year or less	37.5	152
	2–4 years	52.1	211
	5 years or more	10.4	42
Employment status	Currently working	62.0	251
	Retired	6.9	28
	Student	14.1	57
	Not working	17.0	69
Smoking status	Currently smokes	10.6	43
	Does not smoke	79.8	323
	Former smoker (has quit)	9.6	39
Living arrangement	Lives alone	22.5	91
	Lives with others	77.5	314
HIV status disclosure	Not disclosed to anyone	44.0	178
	Disclosed to a friend	8.1	33

	Disclosed to family (spouse, sibling, or parent)	47.9	194
Membership in a support group	Yes	3.7	15
	No	94.8	384
	Not sure	1.5	6

Internalized HIV stigma

Just over half of the respondents (52.6%) reported no feelings of embarrassment related to their HIV status, whereas the remaining participants (47.4%) acknowledged experiencing some level of embarrassment. In contrast, difficulty with disclosing HIV status was widely reported, with 77.8% indicating that informing others about their infection was challenging. The average internalized stigma score was 3.9 out of a maximum possible score of 8.0, with a 95% confidence interval ranging from 3.7 to 4.2. In total, 129 participants (31.9%) were classified as having high levels of internalized HIV stigma, as detailed in **Table 2**.

Table 2. Distribution of internalized HIV stigma among study participants

Statement / Category	Percentage (%)	Number (n)
Difficulty disclosing HIV status to others		
Extremely	54.6	221
Considerably	7.9	32
Moderately	5.9	24
Slightly	9.4	38
Not at all	22.2	90
Overall level of internalized HIV stigma		
Low	32.6	132
Moderate	35.6	144
High	31.9	129
Feelings of embarrassment related to HIV status		
Not at all	52.6	213
Slightly	12.1	49
Moderately	10.4	42
Considerably	2.2	9
Extremely	22.7	92

Distribution of depressive and anxiety symptoms

The findings showed that nearly seven in ten participants (69.9%) did not exhibit symptoms of depression, whereas a notable proportion—67 individuals (16.5%)—experienced symptoms consistent with severe depression **(Figure 1)**. A comparable pattern was observed for anxiety, with 72.1% of respondents reporting no anxiety symptoms; in contrast, severe anxiety symptoms were identified in 17.3% of the study population **(Figure 2)**.

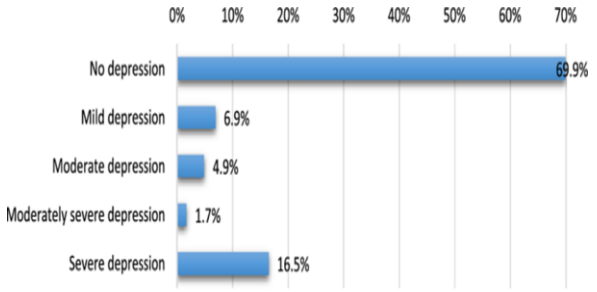

Figure 1. Displays the proportion of participants experiencing depressive symptoms and their corresponding levels of severity.

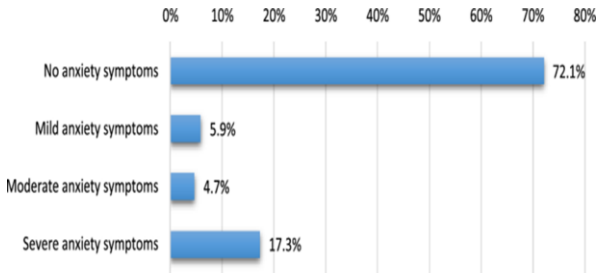

Figure 2. Shows the distribution and intensity of anxiety-related symptoms among the respondents.

Relationship between participant characteristics and mental health outcomes

The bivariate analysis presented in **Table 3** examines how socio-demographic and clinical factors are related to mental health conditions. The occurrence of depressive symptoms varied significantly by sex ($p = 0.045$), age group ($p < 0.001$), educational attainment ($p < 0.001$), employment status ($p < 0.001$), length of time on antiretroviral therapy ($p < 0.001$), and involvement in peer support groups ($p = 0.027$). In a similar pattern, anxiety symptoms were significantly associated with age ($p < 0.001$), employment status ($p < 0.001$), level of education ($p < 0.001$), participation in support groups ($p = 0.029$) and duration of antiretroviral treatment ($p < 0.001$).

Table 3. Outlines the associations between participant characteristics and mental health outcomes.

Factor	Anxiety Symptoms (GAD-7)		Depression Symptoms (PHQ-9)	
	Mean Rank	P-value	Mean Rank	P-value
Age Group (years)		0.000		0.000
Under 30	235.1		233.8	
30–39	220.7		222.9	
40–49	184.8		181.4	
50 and older	171.9		173.8	
Gender		0.077		0.045
Male	193.6		192.1	
Female	210.6		211.7	
Employment Status		0.000		0.000
Employed	190.6		186.7	
Unemployed	262.7		267.8	
Student	202.6		200.6	
Retired	168.3		167.7	
Level of Education		0.000		0.000
No formal education	270.6		272.2	
Primary education	176.9		171.9	
Secondary education	198.6		196.0	
Tertiary education	187.3		189.7	
Living Situation		0.902		0.677
Lives alone	201.9		206.8	
Lives with others	203.3		201.9	
Years on Antiretroviral Therapy		0.000		0.000
1 year or less	266.7		268.4	
2–4 years	155.4		152.3	
5 years or more	211.5		220.9	
Participation in HIV Support Group*		0.029		0.027
Yes	147.6		145.6	
No	202.1		202.1	
Disclosure of HIV Status		0.121		0.249
Not disclosed	194.6		196.6	
Disclosed	209.6		208.0	
Smoking Habits		0.074		0.100
Current smoker	199.0		209.9	
Non-smoker	201.4		205.9	
Former smoker	170.6		171.1	

*Participants who could not confirm whether they were members of a support group (n = 6) were excluded from the analysis. Statistically significant results are highlighted in bold ($p < 0.05$).

Factors associated with mental health outcomes

Logistic regression modeling was applied to identify variables that independently influenced the presence of depressive symptoms. Although gender, age, educational attainment, employment status, time on antiretroviral therapy, and support group involvement were included in the analysis, only three factors demonstrated a significant independent effect: participant age ($p = 0.009$), length of exposure to antiretroviral treatment ($p < 0.001$), and participation in a support group ($p = 0.048$).

A separate regression model examining anxiety-related symptoms yielded fewer significant contributors. Among the variables assessed—age, education, employment, duration of antiretroviral therapy, and support group membership—statistical significance was observed exclusively for time on antiretroviral therapy ($p < 0.001$) and age ($p = 0.003$), as summarized in **Table 4**.

Table 4. Details the regression estimates identifying factors linked to mental health outcomes.

Factor	Anxiety Symptoms (GAD-7)		Depression Symptoms (PHQ-9)	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Age Group (years)		0.003		0.009
Under 30 (Reference)	–	–	–	–
30–39	0.45 (0.17–1.19)	0.108	0.62 (0.23–1.65)	0.334
40–49	0.21 (0.07–0.60)	0.004	0.28 (0.10–0.81)	0.019
50 and older	0.12 (0.04–0.42)	0.001	0.17 (0.05–0.57)	0.004
Gender				0.244
Female (Reference)	–	–	–	–
Male	–	–	0.72 (0.41–1.25)	0.244
Employment Status		0.282		0.067
Employed (Reference)	–	–	–	–
Unemployed	1.12 (0.46–2.73)	0.811	1.80 (0.73–4.45)	0.206
Student	0.37 (0.12–1.15)	0.085	0.34 (0.11–1.07)	0.065
Retired	1.46 (0.32–6.58)	0.621	1.48 (0.36–6.15)	0.589
Level of Education		0.163		0.095
No formal education (Reference)	–	–	–	–
Primary education	0.25 (0.05–1.11)	0.068	0.20 (0.04–0.91)	0.037
Secondary education	0.42 (0.17–1.04)	0.060	0.40 (0.16–1.00)	0.050
Tertiary education	0.38 (0.14–1.02)	0.054	0.58 (0.21–1.56)	0.280
Participation in HIV Support Group		0.171		0.048
Yes (Reference)	–	–	–	–
No	4.53 (0.52–39.29)	0.171	9.02 (1.02–80.13)	0.048
Years on Antiretroviral Therapy (ART)		0.000		0.000
1 year or less (Reference)	–	–	–	–
2–4 years	0.08 (0.04–0.16)	0.000	0.08 (0.04–0.15)	0.000
5 years or more	0.85 (0.32–2.24)	0.744	1.57 (0.61–4.04)	0.351

ART antiretroviral therapy, CI confidence interval, OR odds ratio, bold values indicate statistical significance at $p < 0.05$

Association of internalized HIV stigma with psychological distress

An analysis using Spearman's rank-order correlation evaluated the link between internalized HIV-related stigma and psychological symptom scores **(Table 5)**. The findings indicated that greater internalized stigma was linked to higher levels of both depressive and anxiety symptoms, with correlations of moderate strength for anxiety ($r_s = 0.64$, $p < 0.001$) and depression ($r_s = 0.63$, $p < 0.001$).

Table 5. Provides the correlation results between internalized HIV stigma and indicators of mental health disorders in the study population.

Variable	Depressive symptom score	Internalized HIV stigma	Anxiety symptom score
Depressive symptom score	1.000		0.962
	–		0.000
Anxiety symptom score			1.000
			–
Internalized HIV stigma	0.628	1.000	0.637
	0.000	–	0.000

Bold values indicate statistical significance at $p < 0.001$

The present investigation assessed the extent of internalized HIV-related stigma and psychological distress, measured as depressive and anxiety symptoms, among people living with HIV (PLWH) receiving care at selected secondary-level health facilities in Akwa Ibom State, Nigeria. In addition, the study examined factors influencing mental health outcomes and evaluated how internalized stigma relates to symptoms of depression and anxiety.

Compared with earlier findings [4], a greater proportion of participants in this study indicated that they did not feel ashamed of their HIV status. Despite this, disclosure of HIV infection remained a significant challenge for most respondents, a pattern consistent with previous reports [4, 38]. Although public awareness of HIV has improved, stigma surrounding the infection persists, reinforced by negative societal attitudes toward behaviors such as perceived sexual immorality, substance use, and same-sex relationships [6, 7]. In the Nigerian context, where heterosexual transmission is the predominant mode of infection and HIV prevalence is rising among key populations [30, 31], PLWH may fear being judged or blamed for the circumstances under which they acquired the virus. This social climate likely contributes to non-disclosure, as reflected by the finding that nearly half of the study participants had not shared their HIV status with anyone.

Most participants did not report symptoms of depression or anxiety; however, among those who did, severe symptom levels were common. This observation aligns with evidence from a systematic review indicating that severe depression affects a substantial proportion of PLWH experiencing depressive symptoms [19]. Comparatively lower rates of depression and anxiety have been reported in Guinea [39], whereas studies conducted in Nigeria have documented higher prevalence estimates [40]. Findings from South Africa indicate a different pattern, with lower anxiety prevalence but higher rates of depression [18]. Such inconsistencies across settings may be explained by differences in study design, assessment tools, demographic characteristics, and sociocultural and healthcare contexts.

Age emerged as an important factor influencing psychological outcomes in this study, with younger participants reporting higher levels of depressive and anxiety symptoms than older individuals. This trend has been reported elsewhere [41], including a study from Guinea in which participants under 40 years of age were significantly more likely to experience anxiety symptoms compared with those aged 40 years and above [39]. Younger PLWH may face heightened psychosocial stressors, such as concerns about employment prospects and forming intimate relationships, in an environment where HIV-related stigma remains pervasive [41]. Additionally, younger individuals are more likely to have been recently diagnosed with HIV, and previous research has shown that the period immediately following diagnosis is associated with increased vulnerability to depression and anxiety [42, 43]. This explanation is supported by the treatment profile of participants in the current study, as most individuals under 40 years of age had been on antiretroviral therapy (ART) for one year or less, whereas older participants were more likely to have longer treatment histories (results not shown). Participants who had been receiving ART for 2–4 years reported fewer depressive and anxiety symptoms than those who had initiated treatment more recently.

The WHO “test and treat” approach advocates for immediate initiation of ART following an HIV diagnosis, regardless of immune status. Consequently, individuals who have recently started ART are often newly diagnosed. As previously documented, receiving an HIV diagnosis can precipitate psychological distress, including symptoms of depression and anxiety [42, 43]. Sustained ART use has been linked to improvements in mental well-being [44], which may account for the lower symptom burden observed among participants with longer treatment duration in this study. Nonetheless, ongoing mental health assessment remains essential for all PLWH, irrespective of time on ART, as depression continues to be highly prevalent among individuals receiving treatment [45]. Persistent mental health challenges in this population may stem from multiple factors, including the neurobiological effects of HIV, the

demands and side effects of lifelong therapy, coexisting medical conditions, and fears related to premature mortality [22–24], all of which can negatively affect quality of life [46].

Support group participation was also associated with mental health outcomes. Participants who did not belong to a support group were more likely to report higher levels of depressive symptoms, consistent with findings from previous research [47]. Support groups, often established by non-governmental, civil society, or community-based organizations, provide an important platform for psychosocial support, treatment adherence, and sustained engagement in care [48, 49]. Beyond emotional support, these groups facilitate experience sharing, improve HIV-related knowledge, reduce stigma and discrimination, enhance self-worth, strengthen psychosocial functioning, and promote disclosure of HIV status [48, 50, 51].

The study further demonstrated moderate positive associations between internalized HIV stigma and symptoms of both depression and anxiety. These findings are consistent with a recent systematic review reporting positive relationships between internalized stigma and depression in nearly all reviewed studies, and with anxiety in all included studies [15]. Similarly, Lee *et al*. reported that internalized HIV stigma independently predicted depressive and anxiety symptoms after adjusting for relevant psychosocial and behavioral factors [4]. In contrast, no such association was observed in a study by Gohain and Halliday [52]. Although the cross-sectional design of the present study limits conclusions about causality, evidence from longitudinal research suggests that increases in internalized stigma may be associated with worsening depressive symptoms over time [53]. Furthermore, HIV infection itself may generate anxiety due to its association with mortality [54]. Taken together, these findings underscore the importance of addressing internalized stigma—through interventions such as individualized counseling and continuous HIV-related education—to improve mental health outcomes among PLWH.

Limitations

This study has several limitations that should be acknowledged. First, data were collected from only three health facilities within a single state, which restricts the generalizability of the findings to other settings. Second, the reliance on self-reported measures for both internalized stigma and mental health outcomes introduces the possibility of reporting biases, including recall and social desirability bias. Third, the cross-sectional nature of the study precludes determination of causal relationships between variables. Longitudinal studies are therefore needed to clarify the direction and temporal sequence of the observed associations. Additionally, the study sample included only PLWH who agreed to participate, and the experiences of those who declined participation or did not attend HIV clinics during the study period may differ.

Conclusion

Internalized HIV-related stigma remains a common experience among PLWH in Akwa Ibom State, Nigeria. Although most participants did not report depressive or anxiety symptoms, severe psychological distress was prevalent among those who did. These findings highlight the importance of routine screening for internalized stigma and mental health conditions within HIV care services. Implementing targeted psychosocial interventions—particularly for younger individuals, those newly initiated on ART, and those without access to support groups—may help improve self-perception, psychological resilience, and overall mental well-being among PLWH.

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