

Mental Health Interventions among People Living with HIV/AIDS in Nigeria : A scoping Review

ABSTRACT

Background: People who are living with HIV/AIDS (PLWHA) often face numerous mental health challenges, such as depression and anxiety disorders. The objective of this scoping review was to systematically analyse and synthesise the existing literature on mental health interventions available for PLWHA in Nigeria.

Methods: To conduct this review, a comprehensive search of reputable sources including PUBMED, Google Scholar, Science Direct, Hinari, and African Journal Online (AJOL) was performed. Adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) reporting guidelines, a total of 6 studies were identified, spanning from 2007 and 2021, that focused on interventions addressing adverse mental health conditions among PLWHA.

Results: The studies were conducted in three different regions across Nigeria, with the highest number of studies conducted in the South-West region (3), followed by the South East region (2), and the North Central region (1). Among the mental health conditions addressed in these studies, depression was the most prevalent (4 out of 6 studies, or 66.7%), followed by depression co-occurring with other mental health conditions (3 out of 6 studies, or 50%). The most commonly utilised interventions in the reviewed studies were cognitive behavioural therapy (CBT) and aerobic exercise delivery, each accounting for 33.3% of the interventions. All of the studies reported positive outcomes in terms of participants' mental health. The majority of the studies (83.3%) involved professional counsellors administering the mental health interventions, followed by physiotherapists (33.3%) and psychotherapists (33.3%).

Conclusions: The findings of this review indicate that there is a significantly limited number of implemented interventions addressing the various forms of mental distress experienced by PLWHA, particularly in high prevalence areas of Nigeria. This highlights a crucial research gap and emphasises the need for more interventions that specifically address the mental health needs of PLWHA in Nigeria, taking into consideration the unique challenges and opportunities present in the country.

Keywords: HIV/AIDS, Mental Health, Interventions

1. INTRODUCTION

1.1 Background

According to the World Health Organization (WHO), Human Immunodeficiency Virus (HIV) is a viral infection that specifically targets the body's immune system, particularly the CD4 cells, which are a type of white blood cell. This infection leads to a weakened immune system, making individuals more susceptible to opportunistic infections such as tuberculosis, fungal infections, severe bacterial infections, and certain types of cancer.¹ Acquired Immune Deficiency Syndrome (AIDS), on the other hand, represents the advanced stage of HIV infection, characterised by severe damage to the immune system caused by the virus.² HIV is primarily transmitted through sexual contact, exposure to infected blood and blood products, or from an infected mother to her child during pregnancy, childbirth, or breastfeeding.³ Currently, there is no known cure for HIV, and therefore, treatment focuses on reducing the viral load in the body and implementing preventive measures to minimise the risk of opportunistic infections and their subsequent treatment.

Since the onset of the HIV epidemic, the virus has infected approximately 85.6 million individuals (with a range of 65-113 million), and caused the deaths of approximately 40.4 million individuals (with a range of 32.9-51.3 million). As of the conclusion of 2022, there were approximately 39 million individuals (with a range of 33.1-45.7 million) living with HIV worldwide.⁴ The WHO African region continues to be the most severely impacted, with nearly 3.2% of adults (or approximately 1 in 25) living with HIV, accounting for two-thirds of the global HIV-positive population.⁴ These figures are particularly concerning in the context of Nigeria, where an estimated 1.9 million individuals were living with HIV in 2021.⁵

Mental health encompasses an individual's emotional, psychological, and social well-being.¹ While nearly everyone experiences mental health challenges at some point in their lives, individuals living with HIV face a heightened risk of developing certain mental health conditions.² This increased vulnerability can be attributed to a variety of factors, including difficulties in disclosing one's HIV diagnosis, the stigma and discrimination associated with HIV, the loss of social support networks, and feelings of isolation.⁶ Additionally, opportunistic infections that affect the nervous system can lead to behavioural changes and exacerbate mental health issues.³ Furthermore, the mental health burden on People living with HIV and AIDS (PLWHA) is compounded by the potential psychiatric adverse effects of certain antiretroviral drugs, such as insomnia, agitation, euphoria, or dysphoria.³

Efavirenz, a well-known drug, has been associated with a significant occurrence of neuropsychiatric side effects such as vivid dreams, insomnia, and mood changes in around 50% of patients who commence the treatment. These effects manifest rapidly, typically reaching their peak within the initial two weeks, but are generally mild and temporary in nature.⁶ In Nigeria, following the International guidelines, Efavirenz has been substituted with Dolutegravir, a medication that exhibits minimal neuropsychiatric side effects. As per the current recommendations in Nigeria, the preferred first line treatment regimen is the TLD regimen (Tenofovir, Lamivudine, and Dolutegravir), while Efavirenz is reserved for alternative regimens or specific circumstances.⁷

Although depression is the most commonly observed condition among individuals with HIV, anxiety disorders and substance use disorders can also manifest.^{3,8,9,10,11}

Various interventions have been recommended to address the aforementioned challenges. These interventions encompass preventive measures, psychosocial interventions, and pharmacological interventions. Preventive interventions include life skill education aimed at promoting social and emotional learning, parenting skills training, and cognitive behavioural skills building. In the context of substance misuse, strategies such as reducing the availability of substances, increasing the price of alcohol, and implementing government legislation can be employed. Additionally, for self-harm prevention, restricting access to means of suicide and early identification and management of suicidal behaviour are crucial.¹²

Various psychological therapies, including Cognitive Behavioural Therapy, Behavioural Activation, Relaxation Training, Problem Solving Treatment, Contingency Management Therapy, Family Counselling, Interpersonal Therapy, Motivational Interviews, and Motivation Enhancement Therapy, have demonstrated efficacy in addressing the mental health difficulties experienced by People living with HIV/AIDS (PLWHA).¹² In addition to preventive and psychological interventions, pharmacological interventions have also been found to be effective, although caution must be exercised when administering them due to the potential for interaction with antiretroviral medications.^{12,13}

1.2 Mental Health Interventions in Nigeria: Challenges and Current Landscape

The prevalence of mental illnesses among individuals living with HIV/AIDS (PLWHA) is notably higher.¹⁴ As of the year 2021, the global incidence of mental health symptoms among PLWHA ranged from 28% to 62%.¹⁵ Similar findings were observed in other regions, such as Canada, where 40% of PLWHA had mental illnesses compared to 22% of HIV-negative

individuals.¹⁶ In the United States, 36% of PLWHA had depression and 15.8% had generalised anxiety disorder, whereas only 6.7% and 2.1% of the general population experienced these conditions, respectively.¹⁷ Nigeria also reported high prevalence rates of psychiatric disorders among PLWHA, including depression, substance abuse, and posttraumatic stress disorder, with a prevalence of 59.1% compared to 19.5% in individuals without HIV infections.^{18,19} Given the high prevalence rates of mental health symptoms among PLWHA, it is crucial for these individuals to receive appropriate mental health interventions to address the challenges they face. However, mental health care for PLWHA in Nigeria and other sub-Saharan countries is generally neglected, and neuropsychiatry services are given low priority despite evidence primarily from High income countries suggesting that psychological interventions, primarily focused on treating depression and anxiety, can improve the mental health of PLWH.^{20,21} In fact, only 1% of the health budget is allocated to mental health care, despite mental illnesses accounting for 8% of the burden of disease in the region.²¹ This indicates a substantial gap between the demand for mental health services and the willingness to set up intervention programs. Consequently, PLWHA in the region are directly affected by the lack of funding, resulting in limited access to mental health services. Furthermore, PLWHA are compelled to bear the financial burden of seeking mental health care services through out-of-pocket expenses, similar to countless other Nigerians. This situation results in a significant increase in healthcare expenses and a deterioration in the overall health outcomes for PLWHA.²²

Globally, there is a positive outlook on the evidence base for mental health interventions among people living with HIV (PLWH). However, it is worth noting that the majority of research on mental health interventions for PLWH has been conducted in high-income countries, with the United States alone accounting for over 70% of these studies.^{23,24} This distribution of research is

not aligned with the global burden of HIV, which is more prevalent in low-income and middle-income countries. Nevertheless, there are still interventions being implemented in various countries across different continents including Europe, Canada, Asia, South America, and Africa.^{23,24} For instance, the CHAMP+ program is an example of a family-based intervention that originated in the United States as part of the Collaborative HIV/AIDS Mental health Program. This program aims to prevent HIV risk behaviors and promote mental health in vulnerable communities of adolescents. It has been successfully adapted for implementation in South Africa and Asia, highlighting its effectiveness.²⁵ Another noteworthy intervention took place in India, where Yoga was found to be effective in improving sleep patterns for PLWH who were undergoing Antiretroviral Therapy. This demonstrates the potential of alternative approaches in addressing mental health issues among PLWHA.²⁶

Despite the existence of such studies on the various forms of mental health interventions for people living with HIV/AIDS (PLWHA) globally, there has been limited attention given to interventions specifically targeting this population in Nigeria. Furthermore, there is a lack of comprehensive examination of the outcomes of existing interventions. Therefore, it is imperative to assess the current efforts in addressing mental health distress among PLWHA in order to identify gaps in mental health service provision and to guide the development and expansion of appropriate mental health services in the country. The objective of this review paper is to consolidate the findings from trials of mental health interventions for PLWHA in Nigeria. This synthesis of information will enhance our understanding of mental health interventions for PLWHA and will shed light on potential avenues for future intervention development, testing, and implementation in areas with the greatest need.

1.3 OBJECTIVE OF STUDY

1.3.1 GENERAL OBJECTIVES:

The primary objective of this scoping review is to systematically map and synthesize the existing literature on mental health interventions for People living with HIV/AIDS (PLWHA) in Nigeria.

1.3.2 SPECIFIC OBJECTIVES:

1. To determine what types of mental health interventions have been implemented for people with HIV/AIDS in Nigeria.
2. To determine what the key outcomes and findings of these interventions are.

2. METHODOLOGY

2.1 Approach

The methodology employed encompassed a five-step procedure: identification of the research query, the identification of pertinent studies, the selection of studies, the charting of data, and the compilation, summarization, and presentation of the findings.

2.2 Search Strategy

Database searches were conducted to retrieve articles and reports from various regions in Nigeria that addressed the specific topic of inquiry. A comprehensive literature search was performed on Mental health Interventions among People living with HIV/AIDS using reputable sources such as PUBMED, Google Scholar, Science Direct, Hinari, and African Journal Online (AJOL). The authors collaborated to develop a well-defined search strategy, which is summarised in Table 1. The aim was to gather all relevant literature related to mental health interventions for individuals living with HIV in Nigeria. The search concepts primarily focused on HIV (including Human

immunodeficiency virus, HIV/AIDS, and acquired immunodeficiency syndrome), mental health interventions, and Nigeria. No restrictions were placed on language or publication date. To ensure methodological rigour, this study followed the Preferred Reporting Items for Systematic Reviews and Meta-analysis Extension for Scoping Reviews (PRISMA-SCR) guidelines as shown in Figure 1.

2.3 Selection of studies

The search process adhered to a predetermined protocol and incorporated Medical Subject Heading (MeSH) terms. Peer-reviewed articles were obtained from multiple databases. The titles and abstracts of the identified search results were manually screened by three team members to eliminate duplicate studies, followed by a thorough review of the full texts of the selected papers. Grey literature was not included in this review due to practical constraints, including challenges in identification, acquisition, processing, and accessibility compared to conventional literature sources. To maintain consistency and minimise potential bias, two authors collaborated in pairs to review the titles and abstracts. In cases where there was disagreement regarding the eligibility of a study, a consensus was reached through discussion. Subsequently, the studies that met the predetermined eligibility criteria underwent a comprehensive examination of their full texts.

2.4 Data extraction and management

A data extraction form was created utilising Google Sheets to standardise the process of extracting information from the selected full-text articles. The extracted data encompassed various aspects such as author, year, article title, study design, study region, study population characteristics, mental health condition(s) evaluated, intervention characteristics, intervention setting, and other pertinent findings.

2.5 Data synthesis

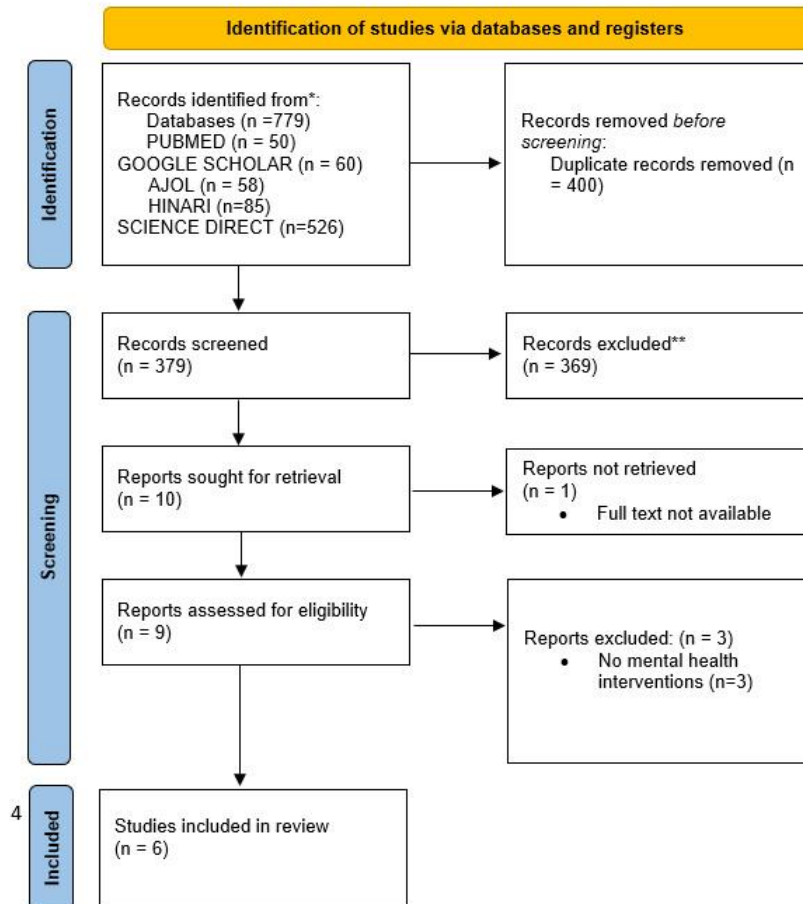
The synthesis of the extracted data was conducted through the utilisation of a narrative approach. The data synthesis process involved categorising the data according to various factors, including the settings in which the studies were conducted, the populations involved, the specific mental health conditions addressed, the type and provider of the interventions, as well as the study designs employed. To effectively summarise the characteristics of the studies and interventions, tables were employed. Additionally, a map was utilised to visually depict the geographical regions where the studies were carried out.

Table 1: Search Strategy Utilised in Study

Database	Search Strategy	Hits
PubMed	(Mental health interventions HIV/AIDS Nigeria) OR (Mental health interventions among People living with HIV Nigeria)) OR (Health Interventions among People living with HIV)) OR (Psychosocial interventions for people living with HIV/AIDS in Nigeria)	50
Google Scholar	(Mental health interventions HIV/AIDS Nigeria) OR (Mental health interventions among People living with HIV Nigeria)) OR (Health Interventions among People living with HIV)) OR (Psychosocial interventions for people living with HIV/AIDS in Nigeria)	60
AJOL	(Mental health interventions HIV/AIDS Nigeria) OR (Mental health interventions among People living with HIV Nigeria)) OR (Health Interventions among People living with HIV)) OR (Psychosocial interventions for people living with HIV/AIDS in Nigeria)	58
Science Direct	(Mental health interventions HIV/AIDS Nigeria) OR (Mental health interventions among People living with HIV Nigeria)) OR (Health Interventions among People living with HIV)) OR (Psychosocial interventions for people living with HIV/AIDS in Nigeria) or (Nigeria) or (Mental Interventions) or (psychosocial interventions)	526
Hinari	(Mental health interventions HIV/AIDS Nigeria) OR (Mental health interventions among People living with HIV Nigeria)) OR (Health Interventions among People living with HIV)) OR (Psychosocial interventions for people living with HIV/AIDS in Nigeria) or (Nigeria) or (Mental Interventions) or (psychosocial interventions)	85

Figure 1: PRISMA CHART

UNDER PEER REVIEW



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3. RESULTS

3.1 Search results

After conducting searches, a total of 779 studies were identified. Out of these, 400 duplicates were removed, and 379 titles and abstracts were screened. Further, 369 studies were excluded as they were not relevant to the topic. Additional exclusions were made due to the absence of identifiable mental health interventions, as depicted in Figure 1. Ultimately, only 6 studies were deemed suitable for inclusion in this review, as presented in Table 2.

Table 2 - Selected Papers in the Review

	Authors	Title	Publ. Year	Geopolitical Zone	Study Design	Sample Size
1	Omeje et al. ²⁷	Effect of Rational Emotive Health Therapy on Alcohol Use Among Community-dwelling, HIV-positive Patients	2018	South-East	Quasi-Experimental	124
2	Oguehi et al. ²⁸	Compassion-Focused Therapy (Cft) As An Intervention Against Suicidal Ideation In Newly Diagnosed People Living With Hiv/Aids (Plwha) Attending A Nigerian Maternity Teaching Hospital	2020	South- West	Randomised control trial	22
3	Nwobi et al. ²⁹	A stress management intervention for adults living with HIV in Nigeria community settings	2018	South-East	Randomised control trial	28
4	Aweto et al. ³⁰	Effects of Aerobic Exercise on the Pulmonary Functions, Respiratory Symptoms and Psychological Status of People Living With HIV	2016	South- West	Randomised control trial	33
5	Olley et al. ³¹	Improving well-being through psycho-education among voluntary counseling and testing seekers in Nigeria: A controlled outcome study	2007	North-Central	Randomised control trial	67
6	Odunaiya et al. ³²	Effects of a four-week aerobic exercise programme on depression, anxiety and general self-efficacy in people living with HIV on highly active antiretroviral therapy	2021	South-west	Quasi Experimental	53

3.2 Characteristics of the study

The studies were carried out across various geopolitical zones in Nigeria, with the highest number of studies conducted in the south western part of the country (3), followed by the south east (2), and finally the north central (1) as shown in figure 2. These studies were conducted between 2007 and 2021, with 2 studies specifically conducted in 2018 (Table 2). The cumulative sample size of all the studies amounted to 327 participants. Out of the total number of studies, two were conducted in a hospital setting (2/6, 33.3%), two were community-based (2/6, 33.3%),

and one was conducted at a voluntary counselling testing centre (1/6, 16.7%). The majority of the studies included both male and female participants (4/6, 66.6%), and focused on adults aged 18 years or older (5/6, 83.3%). The most prevalent mental health condition addressed in these studies was depression (4/6, 66.7%), followed by depression co-occurring with other mental health conditions (3/6, 50%). Other mental health conditions that were examined included alcohol use disorder and suicidal ideation. It is worth noting that the majority of the studies were non-pharmacological in nature, employing interventions such as cognitive behavioural therapy, compassion-focused therapy, aerobic exercise and counselling, and psychoeducation (refer to table 3).

3.3 Characteristics of the intervention

The two most prevalent mental health interventions utilised were cognitive behavioural therapy (CBT) and aerobic exercise delivery, each accounting for 33.3% of the interventions. The CBT interventions were administered independently, while one of the aerobic exercise deliveries was combined with counselling. The CBT interventions were conducted in a community setting. On the other hand, the aerobic exercise delivery interventions were carried out in a hospital and undisclosed location respectively. Compassion focused therapy and psychoeducation were the next most common interventions, each accounting for 16.7% of the interventions. The former was administered in a hospital, while the latter was provided at a voluntary counselling testing centre. The interventions ranged from 4 to 12 weeks. In the majority of the studies (83.3%), professional counsellors jointly administered the mental health intervention, followed by physiotherapists (33.3%), psychotherapists (33.3%), and psychologists (16.7%). In one study, the individual who administered the intervention was not reported.

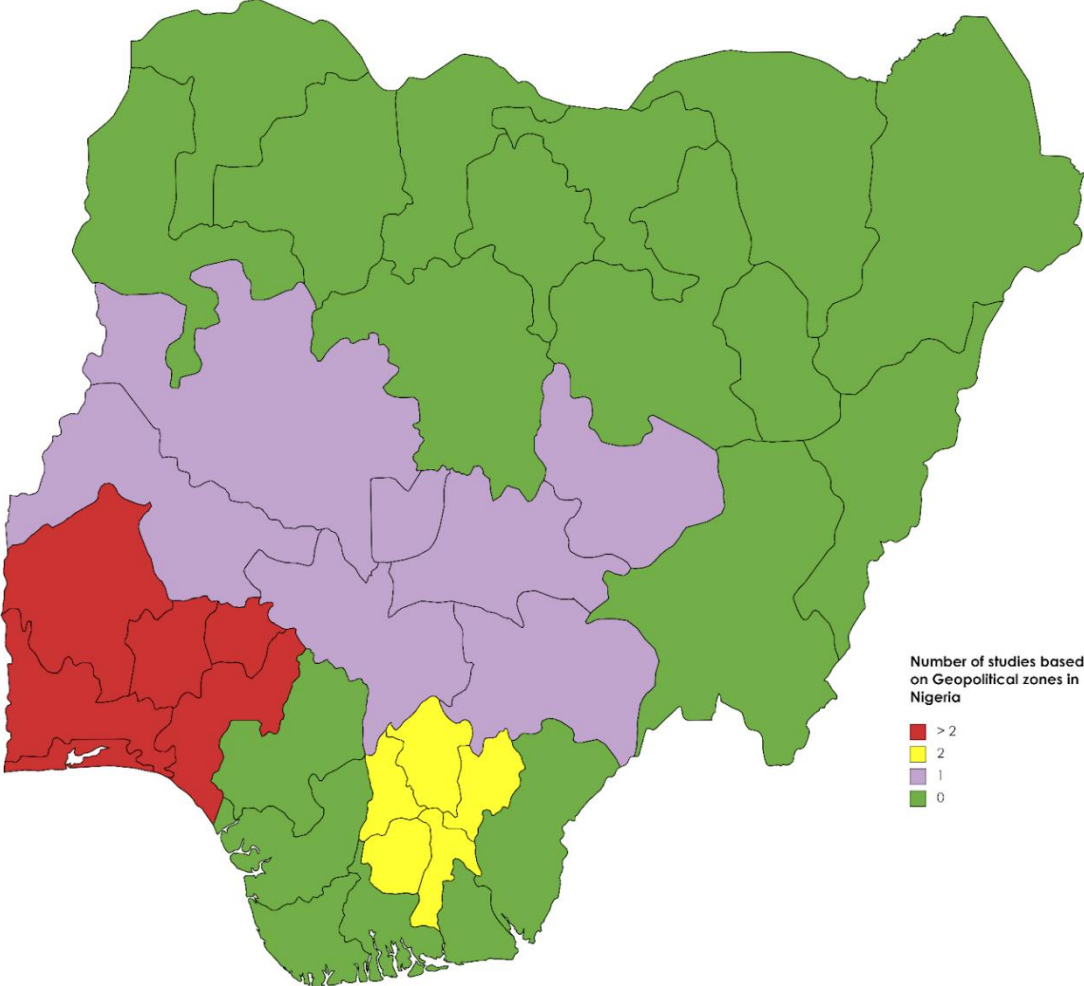
Table 3 - Description of intervention

	Auth ors	Descript ion of Interven tion	Duratio n of interven tion	Setting of delivery	Who adminis tered the interven tion	Outcome of the interventi on	Age of particip ants	Sex of particip ants	Mental Health conditi on	Who administ ered the interven tion
1	Omeje et al. ²⁷	Cognitive Behavioural therapy (CBT)	12 weeks	Community	Quasi-Experimental	Intervention was efficacious in reducing the level of alcohol and alcohol-related irrational beliefs among HIV-positive persons.	18 years and above	Male and female	Alcohol Use Disorder	Professional counsellors or psychologists
2	Oguehi et al. ²⁸	Compassion-Focused Therapy (CFT)	7 weeks	Hospital	Randomised control trial	Intervention was effective in reducing the suicidal ideation among newly diagnosed people living with HIV/AIDS	18 years and above	N/A	Suicidal Ideation	Psychotherapist or professional counsellor
3	Nwobi et al. ²⁹	Cognitive Behavioural therapy (CBT)	10 weeks	Community	Randomised control trial	Intervention significantly reduced stress disorder and the level of Anxiety and Depression amongst community-dwelling	18 years and above	Male and Female	Stress disorder, Anxiety disorder and Depression	Psychotherapist or professional counsellor

						HIV positive persons				
4	Aweto et al. ³⁰	Aerobic exercise and counselling	6 weeks	Hospital	Randomised control trial	Intervention significantly improved pulmonary functions amongst people living with HIV	18 years and above	N/A	Depression	Physiotherapist or professional counsellor
5	Olley et al. ³¹	Psycho-Education	4 weeks	Voluntary counselling and testing (VCT) centre	Randomised control trial	Intervention showed that HIV-positive individuals had significantly less depression and neurotic symptomatology as compared with the control group. There was also improvement in likelihood to disclose serostatus and in safe sex practices.	N/A	Male and Female	Depression and Generalised anxiety disorder	N/A
6	Odunaiya et al. ³²	Aerobic exercise training	4 weeks	N/A	Quasi-Experimental	Intervention significantly improved depression among people living with HIV	18 years and above	Male and female	Depression, anxiety disorder and general self efficacy	Physiotherapist or professional counsellor

N/A - Not Available

Figure 2: A map depicting origin of studies based on Geopolitical zones



4. DISCUSSION

The studies examined in this review have revealed that only a limited number of interventions have been implemented to address the mental health challenges faced by people living with HIV (PLWH) in Nigeria. This is a cause for concern, especially considering that Nigeria has the fourth highest number of people living with HIV in the world, estimated at 1.9 million individuals, with a prevalence rate of 1.3%.^{33,34} In contrast, a significant number of studies with various interventions have been identified in South Africa, another sub-Saharan African country with a high prevalence of HIV.³⁵ South Africa boasts the world's largest antiretroviral therapy (ART) program, which is primarily funded by its own domestic resources.³⁶ These domestic investments, coupled with international aid, have likely contributed to the extensive research conducted on mental health interventions for PLWH in the country. This highlights the crucial role that adequate funding plays in facilitating the development of effective mental health interventions. Unfortunately, Nigeria's HIV response heavily relies on international donors, accounting for over 81% of the country's HIV spending, leaving significant gaps in funding for local research on mental health interventions.³⁷

The majority of the studies that were reviewed focused on three out of the six geopolitical zones in Nigeria. Out of the six articles that were reviewed, the south-west had the highest number of studies with three, followed by the south-east with two studies, and the north-central with only one study. It is concerning that there was no representation for the North-East, North-West, and South-South zones, especially when considering that the second, third, and fourth states (Rivers, Akwa Ibom and Edo states respectively) with the highest prevalence of PLWH in the country are in the South-South zone, and the fifth is in the North-East zone (Taraba State).³⁸ This indicates a

significant disparity among PLWHA across these regions of the country with regards to access to mental health interventions. It is also worth noting that all studies were conducted over a 13-year period, which reflects a certain level of neglect with regards to topics related to psychological and psychiatric effects of mental health interventions in the country as a whole. This issue may be part of a larger problem, as a systematic review of common mental health disorders among adult PLWH globally found that only 27% of the studies were conducted in Sub-Saharan Africa, which carries the highest burden of HIV disease globally.³⁹ Another study highlighted the research disparity in Nigeria specifically, with only four studies showcasing mental health interventions compared to 33.3% (18) in South Africa, 18.5% (10) in Uganda, and 9.26% (5) in Kenya.³⁵ This emphasises the need for an increased number of research work in areas of mental health interventions, taking into account HIV prevalence rates, distribution, and population of PLWH across geographical zones.

The total number of participants involved in the studies amounted to 327. The majority of these studies demonstrated an equal representation of both males and females, indicating inclusiveness in participant selection based on gender. However, there was a greater emphasis on including Adult PLWHA (People Living with HIV/AIDS). Nevertheless, it is crucial to also include children and adolescents in studies like these, despite the challenges surrounding informed consent. This is because they are also susceptible to experiencing the mental effects of HIV/AIDS. This vulnerability may be attributed to factors such as adolescents, particularly girls in sub-Saharan Africa, facing a higher risk due to prevalent gender-based and interpersonal violence, limited access to quality education, widespread poverty, and unemployment.⁴⁰ Additionally, children may have to confront various difficulties such as concerns about loss, disruptions in routine and social interactions, economic hardships, as well as discrimination,

stereotyping, and social exclusion.⁴¹ Informed consent should be obtained from parents, while adolescents can provide their assent.

Moreover, throughout the review process, it was noted that depression was the prevailing issue encountered by individuals living with HIV/AIDS (PLWHA). This outcome was anticipated, as depression continues to be the most prevalent mental health challenge faced by PLWHA. The presence of depression among PLWH can be attributed to various factors, including social stigma, job loss, lack of social support, side effects of medications, and the long-term physical effects of disease progression.³⁵ In addition to depression, other challenges addressed in the review included anxiety disorders, alcohol use disorder, and suicidal ideation. Overall, the implementation of mental health interventions yielded positive outcomes and improved the lives of PLWHA by addressing their mental health conditions. The most commonly utilised interventions in the reviewed studies were cognitive behavioural therapy (CBT) and aerobic exercise. Although CBT was initially developed for the treatment of depression, which was the most frequently treated condition in the studies, it has also proven to be effective in assisting individuals with other mental health conditions such as posttraumatic stress disorder, generalised anxiety, insomnia, obsessive-compulsive disorder, panic disorder, eating disorders, and substance use disorders.³⁵ Numerous studies have reported that aerobic exercise programs have a positive impact on reducing depression symptoms in individuals living with HIV. This is particularly significant considering that exercise is a cost-effective, easily accessible, and enjoyable form of therapy that can be utilised in managing psychological issues in PLWH, ultimately enhancing their overall health status and quality of life.³² Additional interventions included compassion focused therapy, counselling, and psycho-education. However, certain unique approaches such as support groups, family-centred services, and treatment supporters,

which were found to enhance Anti-retroviral therapy (ART) in a recent study conducted in 2020, were not explored in the studies included in this analysis.⁴² These untapped interventions hold potential for future implementation in Nigeria. The majority of interventions were administered by trained professionals, with only one exception where the provider was not reported. This reliance on trained professionals may pose challenges in Sub-Saharan Africa, where there is a scarcity of mental health professionals and limited employment of clinical/health psychologists in healthcare settings.^{35,43} Therefore, task shifting, which involves redistributing tasks to non-specialist healthcare workers, is crucial in reinforcing the existing workforce, particularly as the number of interventions continues to grow.⁴⁴ Implementing task shifting would not only enhance the quality and coverage of these interventions but also provide a more adaptable approach to their implementation.

5.Limitations

It is important to acknowledge that this study may have certain limitations. The lack of sufficient data on mental health interventions for people living with HIV/AIDS in the region could potentially impact the generalizability of the findings. Consequently, as new information becomes available and the research gap narrows, it will be necessary to conduct further reviews. Furthermore, the scope of this evaluation is restricted to Nigeria alone, disregarding other low-income and middle-income countries. This review may also suffer from publication bias, which is why we chose a scoping review approach. Moreover, the review solely includes studies conducted in English, which could introduce bias to the evidence analysed.

6.Conclusion

This scoping review examined the current status of published articles on mental health interventions for people living with HIV (PLWH) in Nigeria. The results revealed a lack of research on this topic. However, there have been some efforts made to address these challenges, and the few interventions that have been implemented have shown positive outcomes. Therefore, it is crucial to enhance mental health interventions for PLWH in the region to enhance their quality of life. The insights provided in this review can assist program developers, healthcare facilities, and policymakers in developing more effective strategies for mental health interventions for PLWH.

COMPETING INTERESTS

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

- 1, World Health Organization. HIV [Internet]. 2023 [cited 2023 Sep 18]. Available from: https://www.who.int/health-topics/hiv-aids#tab=tab_1
- 2, HIV.gov. What Is HIV? [Internet]. 2023 Jan 13 [cited 2023 Sep 18]. Available from: <https://www.hiv.gov/hiv-basics/overview/about-hiv-and-aids/what-are-hiv-and-aids/> .
- 3, Stuart H. Ralston, Ian D. Penman, Mark W. J. Strachan, Richard P. Hobson. (2018). Davidson's Principles and Practices of Medicine. 23rd Edition. Page 308. Elsevier Ltd.

- 4, The Global Health Observatory. HIV [Internet]. 2023[sited 2023 Sep 19]. Available from: <https://www.who.int/data/gho/data/themes/hiv-aids#:~:text=Since%20the%20beginning%20of%20the,at%20the%20end%20of%202022> .
- 5, CFS. HIV county Intelligence [Internet]. 2022 [cited 2023 Sep 19]. Available from: <https://cfs.hivci.org> .
- 6, Kenedi CA, Goforth HW. A Systematic Review of the Psychiatric Side-Effects of Efavirenz. AIDS and Behavior [Internet]. 2011 Apr 12;15(8):1803–18. Available from: <https://doi.org/10.1007/s10461-011-9939-5>
- 7, National Agency for the Control of AIDS (NACA). National HIV and AIDS Strategic Framework 2021-2025 Final. [Internet]. Abuja, Nigeria: NACA; 2022 [cited 2024-02-09]. Available from: <https://www.naca.gov.ng/wp-content/uploads/2022/03/National-HIV-and-AIDS-Strategic-Framework-2021-2025-Final>
- 8, HIVinfo.NIH.gov . Living with HIV and mental health.2021 Aug 13 [cited 2023 Sep 19]. Available from: <https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-and-mental-health>
- 9, HIV.gov . HIV and mental health [Internet]. 2022 Sep 20 [cited 2023 Sep 19]. Available from: <https://www.hiv.gov/hiv-basics/staying-in-hiv-care/other-related-health-issues/mental-health/>
- 10, Center for disease control and prevention. How can I deal with HIV stigma and discrimination? [Internet]. Cited 2023 Sep 19. Available from: <https://www.cdc.gov/hiv/basics/livingwithhiv/mental-health.html> .

11, Olagunju, A.T., Adeyemi, J.D., Ogbolu, R.E. . A Study on Epidemiological Profile of Anxiety Disorders Among People Living with HIV/AIDS in a Sub-Saharan Africa HIV Clinic. *AIDS Behav* 16, 2192–2197 (2012). <https://doi.org/10.1007/s10461-012-0250-x>

12, Integration of mental health and HIV interventions. Key considerations. Geneva: Joint United Nations Programme on HIV/AIDS and the World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

13, Njau T, Ngakongwa F, Sunguya B, Kaaya S, Fekadu A. Development of a Psychological Intervention to Improve Depressive Symptoms and Enhance Adherence to Antiretroviral Therapy among Adolescents and Young People Living with HIV in Dar es Salaam Tanzania. *Healthcare (Basel)*. 2022 Dec 9;10(12):2491. doi: 10.3390/healthcare10122491. PMID: 36554015; PMCID: PMC9778412.

14, Conten N.K., Latona A., Mahomed O. Mappythe effectiveness of intergating mantal health in HIV programs: a scoping review. *BMC Health Serv Res* 23, 396 (2023). <https://dio.org/10.1186/s12913-023-09359-x> .

15, Jacqueline Hoare, Tatum Sevenoaks, Bulelwa Mtukushe, Taryn Williams, Sarah, Heany, Nicole Phillips. Golbal systematic review of common mental health disorders in adults living with HIV. *Curr HIV/AIDS Rep*. 2021 Nov 18. Dio: 10.1007/s11904-021-00583-w.

16, Kendall CE, Wong J, Taljaard M, Glazier RH, Hogg W, Younger J. A cross-sectional, population-based study measuring commorbidity among people living with HIV in Ontario. *BMC public Health*. 2014;14(1):1-9

- 17, Remien RH, Stirratt MJ, Nguyen N, Robbins RN, Pala AN, Mellins Ca. Mental health and HIV/AIDS: the need for an integrated response. *AIDS*. 2019;33(9):1411.
- 18, O Abayomi, A Adelufosi, P Adebayo, M Ighoroje, D Ajogbon, A Ogunwale. HIV Risk Behavior in Persons with Severe Mental Disorders in a Psychiatric Hospital in Ogun, Nigeria. *Ann Med Health Sci Res*. 2013 Jul-Sep; 3(3): 380–384. doi: 10.4103/2141-9248.117960.
- 19, Adewuya AO, Afolabi MO, Ola BA, Ogundele OA, Ajibare AO, Oladipo BF. Psychiatric disorders among the HIV-positive population in Nigeria: a control study. *J Psychosom Res*. 2007 Aug;63(2):203-6. doi: 10.1016/j.jpsychores.2007.03.006. PMID: 17662758.
- 20, Sikkema KJ, Dennis AC, Watt MH, Choi KW, Yemeke TT, Joska JA. Improving mental health among people living with HIV: a review of intervention trials in low-and middle-income countries. *Global Mental Health*. 2015;2:e19.
- 21, Eaton J., Nwefoh E., Okafor G. Interventions to increase use of services; mental health awareness in Nigeria. *Int J Ment Health Syst* 11, 66 (2017). <http://dio.org/10.1186/s13033-017-0173-z> .
- 22, Aregbeshola BS. Out-of-pocket payments in Nigeria. *The Lancet* [Internet]. 2016 Jun 1;387(10037):2506. Available from: [https://doi.org/10.1016/s0140-6736\(16\)30798-x](https://doi.org/10.1016/s0140-6736(16)30798-x)
- 23, Remien RH, Stirratt MJ, Nguyen N, Robbins RN, Pala AN, Mellins CA. Mental health and HIV/AIDS. *AIDS* [Internet]. 2019 Jul 15;33(9):1411–20. Available from: <https://doi.org/10.1097/qad.0000000000002227>

- 24, Sherr L, Clucas C, Harding R, Sibley E, Catalán J. HIV and Depression – a systematic review of interventions. *Psychology, Health & Medicine* [Internet]. 2011 Oct 1;16(5):493–527. Available from: <https://doi.org/10.1080/13548506.2011.579990>
- 25, McKay MM, Chasse KT, Paikoff RL, McKinney LD, Baptiste D, Coleman D, et al. Family- Level impact of the CHAMP Family Program: a community collaborative effort to support urban families and reduce youth HIV risk exposure. *Family Process* [Internet]. 2004 Feb 18;43(1):79–93. Available from: <https://doi.org/10.1111/j.1545-5300.2004.04301007.x>
- 26, Pedroza-Escobar D, Serrano-Gallardo LB, Ibarra-Arriaga LA, Escobar-Ávila EA. Yoga practice improves sleep quality of people living with HIV on ART Available from: <http://nopr.niscpr.res.in/handle/123456789/42272>
- 27, Omeje JC, Otu MS, Aneke AO, Adikwu VO, Nwaubani OO, Chigbu EF, et al. Effect of rational emotive health therapy on alcohol use among community-dwelling, HIV-positive patients. *Medicine* [Internet]. 2018 Aug 1;97(35):e11688. Available from: <https://doi.org/10.1097/md.00000000000011688>
- 28, Ogueji IA, Okoloba MM. Compassion-Focused Therapy (Cft) As An Intervention Against Suicidal Ideation In Newly Diagnosed People Living With Hiv/Aids (Plwha) Attending A Nigerian Maternity Teaching Hospital. *Global Psychiatry* [Internet]. 2020 May 1;3(1):104–12. Available from: <https://doi.org/10.2478/gp-2020-0012>
- 29, Nwobi UA, Eseadi C, Obetta KC, Ekwealor NE, Ogonnaya KA, Oboegbulem AI, et al. A stress management intervention for adults living with HIV in Nigerian community settings.

Medicine [Internet]. 2018 Nov 1;97(44):e12801. Available from:
<https://doi.org/10.1097/md.00000000000012801>

30, Aweto HA. Effects of aerobic exercise on the pulmonary functions, respiratory symptoms and psychological status of people living with HIV [Internet]. PubMed Central (PMC). 2016. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7189087/>

31, Olley BO. Improving well-being through psycho-education among voluntary counseling and testing seekers in Nigeria: A controlled outcome study. *Aids Care-psychological and Socio-medical Aspects of Aids/Hiv* [Internet]. 2006 Nov 1;18(8):1025–31. Available from: <https://doi.org/10.1080/09540120600568756>

32, Odunaiya NA, Agbaje SA, Adegoke OM, Oguntibeju OO. Effects of a four-week aerobic exercise programme on depression, anxiety and general self-efficacy in people living with HIV on highly active anti-retroviral therapy. *Aids Care-psychological and Socio-medical Aspects of Aids/Hiv* [Internet]. 2021 Feb 12;34(2):173–81. Available from: <https://doi.org/10.1080/09540121.2021.1883513>

33, National Agency for the Control of AIDS (NACA). (2019b). *Nigeria Prevalence Rate – NACA Nigeria*. [online] Naca.gov.ng. Accessed 19 November 2023. <https://www.naca.gov.ng/nigeria-prevalence-rate/>

34, Country progress report - nigeria - UNAIDS [Internet]. UNAIDS; [cited 2023 Nov 19]. Available from [:https://www.unaids.org/sites/default/files/country/documents/NGA_2020_countryreport.pdf](https://www.unaids.org/sites/default/files/country/documents/NGA_2020_countryreport.pdf)

35, Chukwuorji JC, Ezeonu NA, Ude N, Itanyi IU, Eboreime E, Kung JY, et al. Addressing the unmet mental health needs of people living with HIV: a scoping review of interventions in sub-Saharan Africa. *AIDS Care* [Internet]. 2023 Feb 20;35(11):1677–90. Available from:<https://doi.org/10.1080/09540121.2023.2176428>

36, UNAIDS. (2019). UNAIDS Data 2019. Retrieved on 19 November, 2023 fromhttps://www.unaids.org/sites/default/files/media_asset/2019-UNAIDS-data_en.pdf.

37, Nwizu J, Ihekanandu U, Ilika F. Increasing domestic financing for the HIV/AIDS response in Nigeria: a catalyst to self-reliance. *The Lancet Global Health* [Internet]. 2022 Mar 1;10:S25. Available from:[https://doi.org/10.1016/s2214-109x\(22\)00154-1](https://doi.org/10.1016/s2214-109x(22)00154-1)

38, Onovo A, Adeyemi A, Onime D, Kalnoky M, Kagniniwa B, Dessie M, et al. Estimation of HIV prevalence and burden in Nigeria: a Bayesian predictive modelling study. *EClinicalMedicine* [Internet]. 2023 Aug 1;62:102098. Available from:<https://doi.org/10.1016/j.eclinm.2023.102098>

39, Hoare, J., Sevenoaks, T., Mtukushe, B. *et al.* Global Systematic Review of Common Mental Health Disorders in Adults Living with HIV. *Curr HIV/AIDS Rep* **18**, 569–580 (2021).

<https://doi.org/10.1007/s11904-021-00583-w>

40, Centre for Strategic and International Studies. (2019). The world's largest HIV epidemic in crisis: HIV in South Africa. Retrieved on January 22, 2022 from<https://www.csis.org/analysis/worlds-largest-hiv-epidemic-crisis-hiv-south-africa>.

41, Roth J, Siegel R, Black SA. Identifying the mental health needs of children living in families with AIDS or HIV infection. *Community Mental Health Journal* [Internet]. 1994 Dec 1;30(6):581–93. Available from: <https://doi.org/10.1007/bf02188594>

42, Okonji, E.F., Mukumbang, F.C., Orth, Z. *et al.* Psychosocial support interventions for improved adherence and retention in ART care for young people living with HIV (10–24 years): a scoping review. *BMC Public Health* **20**, 1841 (2020). <https://doi.org/10.1186/s12889-020-09717-y>

43, Ayenigbara GO, Olowolabi SO, Adeleke RO. Imperatives of Health Psychologist in the control and Management of HIV/AIDS in Sub-Saharan Africa. *World Journal of AIDS* [Internet]. 2014 Jan 1;04(02):163–8. Available from: <https://doi.org/10.4236/wja.2014.42021>

44, Orkin A, Rao S, Venugopal J, Kithulegoda N, Wegier P, Ritchie SD, et al. Conceptual framework for task shifting and task sharing: an international Delphi study. *Human Resources for Health* [Internet]. 2021 May 3;19(1). Available from: <https://doi.org/10.1186/s12960-021-00605-z>