ORIGINAL ARTICLE

Extent of depression among dialysis patients in Africa: a scoping review

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ABSTRACT

Background: The diagnosis of kidney failure has a significant impact on the quality of life of dialysis patients in various healthcare-related aspects, potentially leading to the development of depression and anxiety. Conversely, depression and the effects of dialysis adversely affect caregivers and families of dialysis patients. These patients experience depression for a variety of reasons, including the psychological effects of chronic illness, lifestyle constraints, and the physical difficulties of therapy. Research on the prevalence and effect of depression in dialysis patients in Africa is limited, highlighting the need for comprehensive studies to address them. This study synthesizes current evidence on depression among dialysis patients in Africa using a scoping review.

Method: A systematic review of articles in PubMed, EMBASE, PsycINFO, African Journals Online (AJOL), and the Cochrane Library was conducted using keywords related to depression, dialysis, and renal disease in Africa, listing studies published between 2014 and 2024. A Microsoft spreadsheet was used to record the details of selected studies. Thirteen surveys met the criteria for final review, which followed the PRISMA-ScR guidelines, descriptive analysis and thematic analysis.

Results: We found that the prevalence of depression in African dialysis patients ranged from 32.4% to 80%, depending on the country and study population. This evidence was categorised into four main themes: mental health and quality of life; socio-economic and treatment factors; self-management and psychosocial support; and geographic, cultural, and clinical implications. The limited number of peer-reviewed research papers identified is of concern, considering the topic's significance and growing importance.

Conclusion: Depression is prevalent among patients undergoing renal replacement therapies, such as haemodialysis and peritoneal dialysis. Regular assessments of depression are crucial for new dialysis patients to ensure early detection and optimal intervention. Further research is needed to improve the screening, diagnosis, and management of depression among dialysis patients in Africa.

Keywords: depression; kidney failure; Africa; kidney replacement therapy; prevalence; mental health.

INTRODUCTION

Chronic kidney disease (CKD), which affects over 10% of the global population, often progresses to kidney failure (KF), defined by a glomerular filtration rate below 15 mL/min per 1.73 m^2. KF significantly reduces quality of life and increases mortality risk [1-3]. Depression in dialysis patients remains common and generally undiagnosed, leading to these populations not receiving optimal care [4].

The World Health Organization (WHO) defines depression as a common mental health disorder characterised by a prolonged depressed mood or loss of interest in activities, which can affect anyone [5]. Patients with KF receiving haemodialysis and peritoneal dialysis as renal replacement therapies (RRTs) are susceptible to depression and its associated complications [6]. Depression is a widespread and significant complication among patients undergoing dialysis, substantially affecting their quality of

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Table 1. List of abbreviations.

Abbreviations	Definitions
CKD	Chronic kidney disease
KF	Kidney failure
GFR	Glomerular filtration rate
HD	Haemodialysis
PD	Peritoneal dialysis
QOL	Quality of life
RRT	Renal replacement therapies

life, adherence to treatment and overall health outcomes [6,7]. Depression in dialysis patients is associated with several socio-demographic factors, including gender, education level, income, family support, employment status, CKD duration, and age [8].

The global prevalence of KF is on the rise, with an estimated 3 million people receiving dialysis worldwide in 2020 [9]. Understanding the psychological burden of haemodialysis and peritoneal dialysis treatment therapies is becoming increasingly crucial. There is a lack of studies related to depression in patients diagnosed with CKD in Africa, highlighting the need for more research to be conducted on this topic to determine the magnitude of the problem in the region [10]. Depression in dialysis patients is multifactorial, stemming from the physical demands of treatment, lifestyle restrictions and the psychological impact of chronic illness [11]. The prevalence of depression in this population varies widely across studies and geographical regions, with estimates ranging from 20% to 60% [12]. This variability underscores the need for a comprehensive review considering diverse global perspectives, including those from developing regions such as Africa.

While extensive research has been conducted on depression in dialysis patients in developed countries, there is a significant gap in the literature that applies to Africa [10,13]. This disparity in research focus is of concern, given the unique challenges faced by dialysis patients in resource-limited settings, including limited access to mental health services and cultural factors that may influence the perception and management of depression.

This scoping review synthesises current evidence on depression among dialysis patients from studies conducted in Africa. By examining the literature published between 2014 and 2024, we sought to provide an up-to-date analysis of prevalence rates, risk factors, screening methods and types of treatment. Additionally, this review highlights the specific challenges and opportunities for addressing depression among dialysis patients in Africa, contributing to a more comprehensive understanding of this critical issue in nephrology and mental health care. Limited access to mental health services, coupled with unique cultural perceptions of mental illness, complicates the assessment and management of depression in African dialysis patients.

OBJECTIVES OF THE REVIEW

- To synthesise the scope and quantity of literature on depression among dialysis patients in Africa using a scoping review.
- To highlight the challenges and opportunities in addressing depression among dialysis patients in Africa, contributing to a more comprehensive understanding of this critical issue in nephrology and mental health care.

REVIEW QUESTIONS

- What is the scope and quantity of literature on depression among dialysis patients in Africa?
- What are the challenges and opportunities in addressing depression among dialysis patients in Africa?

METHODS

This review was conducted according to an established methodology for scoping studies [14,15]. Rayyan, an automation tool, was used to screen records for eligibility, and discrepancies were resolved through consensus. At the outset, we drew up the review questions, our objectives, eligibility criteria, search strategy, evidence screening and selection, data extraction and charting, analysis of evidence, presentation of results and summary of evidence [15]. Observing the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA-ScR) guidelines [15], we systematically performed a comprehensive literature search of the following electronic databases: PubMed, EMBASE, PsycINFO, African Journals Online (AJOL) and the Cochrane Library. The search was limited to English-language articles to ensure clarity and reduce translation-related errors during data extraction. The articles were published between 1 January 2014 and 31 December 2023. The following search terms were used in various combinations: "depression", "dialysis", "anxiety", "depressive symptoms", "dialysis", "haemodialysis", "peritoneal dialysis", "end-stage renal disease", and "Africa".

Eligibility criteria

Inclusion and exclusion criteria were developed to provide pertinent data from the literature extracted from the databases. Inclusion criteria were:

- Original research articles published in peer-reviewed journals.
- Studies focusing on adult dialysis patients (≥18 years old).
- Articles addressing depression prevalence, risk factors, screening methods, and treatment approaches.

- Studies conducted in Africa.
- Articles published in English exclusively.
- Studies conducted on patients undergoing dialysis treatment.

Exclusion criteria consisted of:

- Case reports, editorials and review articles.
- Studies focusing exclusively on paediatric populations.
- Articles that did not provide transparent methodologies or results.
- Abstracts.

Data extraction and quality assessment

Two independent researchers used the studies' keywords to screen titles and abstracts for relevance. They then assessed full-text articles of potentially eligible sources. Data extraction was performed using a standardised form, capturing information on study design, sample size, geographic location, depression assessment tools, prevalence rates, risk factors, and interventions. Discrepancies over data extraction and quality assessment were resolved by discussion or consultation with a third reviewer. The scoping synthesis approach was used to address the expected heterogeneity in study designs and outcomes. No ethical approval was required as this review relies on published articles. However, the researchers ensured that all the studies reported on had obtained appropriate ethical clearance.

Analysis of evidence

The first step involved creating an analytical framework based on the PRISMA-ScR flow chart to obtain a general overview of the research on depression among African dialysis patients (Figure 1). In the second phase, a descriptive analysis was conducted using a table to show the sorts of studies chosen, the nature of the publications examined, the year the studies were published, and the countries where they were conducted (Table 2). The third and final phase involved using thematic analysis to identify themes about depression in African dialysis patients as well as possibilities for and problems in treating it. These themes were further examined to provide a guide to the nature of depression among these patients.

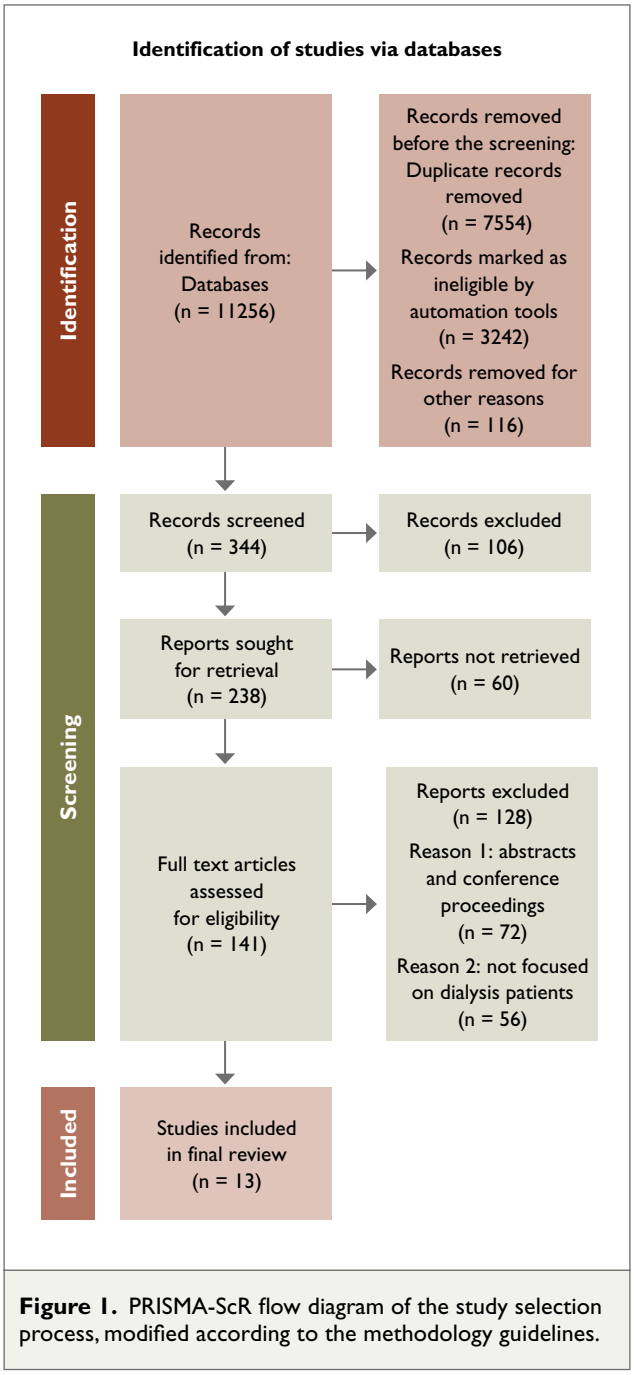

Figure 1. PRISMA-ScR flow diagram of the study selection process, modified according to the methodology guidelines.

RESULTS

The articles were retrieved from five databases and represented 11 256 studies. After removing 7554 duplicates, 3702 studies were screened through their abstracts for eligibility. Rayyan was used to screen 3242 article records for eligibility; discrepancies were resolved through consensus, and 116 records were removed due to insufficient data or focus on paediatric populations. A total of 344 relevant studies were screened for the scoping review and were chosen according to the inclusion and exclusion criteria. After further examination of the titles and abstracts, 106 records were eliminated for not meeting the inclusion criteria, leaving 238 articles eligible for full-text reading. Of these 238 records, 60 articles could not be retrieved for full-text reading, whereas 141 records were available for the purpose; 182 papers were eliminated because they were deemed to be outside the scope of the study, and some did not focus on dialysis patients. Lastly, just 13 articles were included in the final review. The study selection process is illustrated in Figure 1 [16].

Table 2. Summary of articles.

Authors	Prevalence	Sample size	Country	Design and methods	Year of publication	Aim or objective of the study
1. Donia et al.	76.3%	76	Egypt	Cross-sectional observational quantitative study	2015	Assess depression and its relation to other clinical aspects as well as to health-related quality of life (HRQOL) among a group of Egyptian haemodialysis patients.
2. Olagunju et al.	29%	100	Nigeria	Cross-sectional quantitative study	2015	Investigate the influence of anxiety with depression on quality of life in end-stage renal disease.
3. Tannor et al.	Not specified	106	South Africa	Mixed-methods study	2017	Investigate the quality of life of patients on chronic haemodialysis (HD) and peritoneal dialysis (PD). Use a comparative mixed-methods approach to study the QOL of patients on HD and PD
4. Filali et al.	34%	103	Morocco	Cross-sectional observational quantitative study	2017	Assess the prevalence of depressive and anxiety disor-ders, suicidal ideation, and the QoL among HD patients and their associations with sociodemo-graphic characteristics.
5. Gela et al.	42%	169	Ethiopia	Cross-sectional survey, non-randomised, non-controlled, observational quantitative study	2018	Assess self-management and associated factors among patients with end-stage renal disease undergoing hae-modialysis in Addis Ababa, Ethiopia.
6. Boima et al.	Not specified	158	Ghana	Cross-sectional observational quantitative study	2019	Assess psychological changes in patients with end-stage renal disease receiving chronic haemodialysis and patients with chronic kidney disease not on dialysis.
7. Mbeje	Not specified	18	South Africa	Grounded theory, qualitative study	2019	Explore and analyse the quality of life of end-stage renal disease patients on dialysis.
8. Amoako et al.	80%	30	Ghana	Cross-sectional observational quantitative study	2021	Assess the psychological well-being (depression and anxiety) of haemodialysis patients in Kumasi, Ghana.
9. Mbeje et al.	94.6%	316	South Africa	Cross-sectional descriptive quantitative study	2022	Determine the factors affecting the quality of life (QoL) of patients with end-stage renal disease on dialysis. Determine the factors affecting the QoL of patients with ESRD on haemodialysis or peritoneal dialysis in KwaZulu-Natal, South Africa.
10. Kasonde et al.	70%	104	Zambia	Analytical cross-sectional quan-titative study	2022	Explore and analyse the quality of life of patients with end-stage renal disease who are on dialysis.
11. Nguring'a et al.	32.4%	170	Kenya	Descriptive cross-sectional observational quantitative study	2022	Determine the prevalence of depression in end-stage renal disease patients undergoing maintenance haemo-dialysis at the Kenyatta National Hospital, Nairobi Hospital, and Parklands Kidney Centre.
12. Mathew et al.	58%	150	South Africa	Cross-sectional, descriptive quantitative study	2023	Assess the effect of dialysis modality, demographic and laboratory parameters on mental health and quality of life measurements.
13. Mohamed et al.	61.5%	200	Somalia	Cross-sectional quantitative study	2023	Determine the quality of life and levels of depression and anxiety in kidney failure patients receiving HD treatment, and examine the effect of depression and anxiety on QoL in a sample of HD patients.

Article summary characteristics

Table 2 summarises the 13 studies analysed, according to authorship, article title, country of origin, publication year, research methods, objectives, and main results. Every article that was selected reported on depression among dialysis patients. The 13 papers examined were published between 2015 and 2023; four between 2015 and 2017, three between 2018 and 2019, and six papers were published

between 2021 and 2023. Eleven of the studies were cross-sectional quantitative in nature, and there was one qualitative and one mixed-method study. Four surveys were conducted in South Africa, two in Ghana, and a single study in each of Egypt, Nigeria, Somalia, Kenya, Morocco, Ethiopia and Zambia.

Themes that emerged from the review

The four consolidated themes provide a broad outline for understanding the complex experiences of dialysis patients with KF in Africa. They focus on mental health, quality of life, influencing factors, and implications for clinical practice.

Theme 1: mental health and quality of life of KF patients

Multiple studies across different African countries consistently show high rates of mental health issues among KF patients. In Egypt, it was discovered that depression is common among haemodialysis patients [17]. A study in Morrocco reported a high prevalence (34%) of major depressive episodes, anxiety disorders (25.2%), and suicidal ideation (16.5%) among haemodialysis patients [18]. In Kenya, depression prevailed in 32.4% of KF patients undergoing haemodialysis [19]. Another study, conducted in Ghana, reported that 80% of KF patients receiving haemodialysis treatment were severely depressed [20]. These mental health issues notably affect patients' quality of life and ability to self-manage, as noted in Ethiopia [21].

Several studies examined the quality of life (QoL) of dialysis patients, covering psychological consequences, including depression. In South Africa, QoL was compared between haemodialysis (HD) and peritoneal dialysis (PD) patients, with the result that the latter experienced a higher symptom burden but scored better on work status [22]. In South Africa also, it was found that most KF patients on dialysis had poor QoL, with economic and psychological domains being the most affected, making them prone to depression [23,24]. Moreover, a Nigerian study revealed that KF patients exhibited diagnosable anxiety and experienced reduced QoL in many respects due to depression [25].

Theme 2: socio-economic and treatment factors affecting KF patient outcomes

Socio-economic factors play a crucial role in the experiences of KF patients. In Zambia, a high unemployment rate (60%) was reported among CKD patients on dialysis [26]. A study in Ghana found that higher income levels were associated with reduced prevalence of depression [20]. In Somalia, a relatively high family income correlated with increased overall quality of life [28]. A Nigerian study found that average monthly income was significantly associated with depression in CKD patients [29].

Different treatment modalities have varying effects on patients. A South African study found that dialysis patients had higher anxiety and depression than those on conservative management [27]. However, there were notable differences between HD and PD patients regarding symptom burden and social functioning [22].

Theme 3: self-management and psychosocial support in KF care

An Ethiopian study focused on self-management among KF patients undergoing haemodialysis [21], and found that many of the patients recorded low levels of self-management. However, higher education, increased knowledge about haemodialysis, and higher self-efficacy were linked to improved self-management. Conversely, anxiety and depression were associated with relatively low levels of self-management.

Various studies emphasise the importance of psychosocial support. A study in Egypt recommended a combined nephrology/psychiatry approach for accurate assessment and treatment of depression [17]. A survey in Ethiopia identified poor social support as a critical factor associated with common mental disorders in CKD patients [21]. In Nigeria, it was recommended that there should be routine screening for psychiatric disorders and providing comprehensive mental health services [25].

Theme 4: geographic, cultural, and clinical implications in KF patient experiences

The studies examined extend to several African countries, highlighting widespread shared aims and discrepancies concerning patient experiences. Studies from Egypt, Morocco, Kenya, Ghana, Ethiopia, South Africa, Somalia and Nigeria all report a high prevalence of mental health issues among KF patients, confirming this as a common concern across the continent in different regions and countries [17-21, 27,28]. However, prevalence rates and associated factors vary between countries, indicating potential cultural effects and the influence of healthcare provision.

Several studies offer recommendations for clinical practice. In Somalia, the emphasis is on consistent emotional assessment and efficient management of depression and anxiety among dialysis patients [28]. In Ghana, clinical psychological support is advocated for haemodialysis patients [30]. A Nigerian study cites the need for depression screening among CKD patients and collaboration between nephrologists and mental health specialists [29].

DISCUSSION

This review of studies on KF patients across Africa reveals a complex interchange of medical, psychological, and socio-economic factors affecting patient outcomes. Our discus-

sion will focus on the main themes that emerged from the surveys reported on. Multiple studies found that KF patients in Africa experience high rates of mental health issues such as depression, anxiety, and thoughts of suicide. Research from countries across the continent, including Egypt, Nigeria, Morocco and South Africa, consistently reports an elevated prevalence of these mental health problems [7,18-20]. The rates vary from 32% in Kenya to 80% in Ghana. This widespread issue highlights the need to integrate mental health care into renal treatment across the continent. While this trend is prominent in Africa, it is not unique. A meta-analysis covering many studies found that approximately 20–30% of KF patients globally experience depression [31]. While the global prevalence of depression in dialysis patients ranges from 20% to 60%, African countries like Ghana report rates as high as 80%, indicating a potential underestimation of the burden in low-resource settings.

Studies in South Africa and Nigeria highlighted impairments of quality of life, mainly affecting economic and psychological aspects [22-25]. Comparisons between HD and PD patients revealed notable differences in QoL outcomes [22]. This suggests that choice of treatment modality should consider individual patients' circumstances and preferences to combat the possible adverse psychological outcomes. The effect of depression on quality of life observed in Africa aligns with findings elsewhere. For instance, surveys in Japan, Europe and the United States found that KF patients on dialysis had lower QoL scores than the general population in all three regions [32]. The specific domains affected may vary; however, depression in KF patients is common. Whereas African studies emphasise economic and psychological impacts on QoL, surveys from more economically developed countries often focus more on physical function and energy levels [33].

Surveys consistently point to the significant role of socio-economic factors in KF patient outcomes. High unemployment rates among CKD patients and the correlation between higher income levels and better mental health and QoL outcomes highlight the need for holistic care that address not just medical but also socio-economic challenges faced by patients [26,20,28,29].

Treatment Modalities and Patient Experiences: Surveys of different treatment modalities on patient outcomes and found higher rates of anxiety and depression among dialysis patients than in those on conservative management [27]. These findings indicate that treatment policies should consider medical efficacy and their potential psychological consequences. Although African studies show varying effects of different dialysis modalities, global research provides additional insights. An international survey found that patient-reported outcomes were generally better for patients on peritoneal dialysis than haemodialysis in many countries [34]. This aligns with some African findings but suggests that the advantages of PD may be more consistent globally than observed in the relatively few African studies.

Psychosocial Support and Self-Management: Psychosocial support of these patients emerges as important. Recommendations for a combined nephrology/psychiatry approach and the identification of poor social support as a critical factor in mental health issues underscores the need for comprehensive care. Moreover, findings on self-management highlight the potential benefits of patient education and empowerment strategies [17,21]. The emphasis on psychosocial support in African studies is echoed in global research, which reports that various forms of psychotherapy and support groups can improve mental health outcomes [35]. However, the recommendation for combined nephrology–psychiatry approaches in some African studies is less common in the global literature, possibly reflecting differences in healthcare systems [17]. Healthcare workers working with patients on dialysis must understand the challenges patients on dialysis and their families face and implement strategies to enhance their quality of life and psychosocial well-being [36].

Geographic and Cultural Considerations: While the high prevalence of mental health issues appears to be common across Africa, the variations in specific rates and associated factors point to the influence of local cultural and healthcare factors. This suggests the need for culturally sensitive and locally adapted interventions. A survey of KF patients in the United States and Japan found significant differences in how patients from these very different cultures perceived and reported their health status [37].

Clinical implications and future directions

The findings from these studies generally call for significant changes in the clinical management of KF in Africa. Recommendations include regular mental health screenings, integration of psychological support into renal care, and a more holistic approach to patient care that addresses medical and psychosocial needs [25,29,30]. This body of research shows KF as a condition with far-reaching consequences beyond physical health. It highlights the urgent need for integrated care models that address also mental health, quality of life, and socio-economic factors. Future research should focus in addition on developing and testing such treatments tailored to the specific contexts of different African countries.

We highlight a significant gap in the assessment and management of depression in African dialysis patients. Future studies should therefore explore the implementation of culturally adapted screening tools and intervention strategies.

Limitations of this study

Our review has limitations. Some of the studies examined explored healthcare-related quality of life – depression was just a single part of those studies. A significant fur ther limitation is that most of the surveys used cross-sectional quantitative methods and lacked qualitative analysis. Notably, the literature examined needed more prospective studies and required to be more up to date. For example, half of the literature reported on comprises studies conducted before 2020, more than five years ago.

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Conflict of interest

The authors have no conflicts of interest to declare.

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