



## Nigerians with diabetes and their mental health in the context of diabetes care and management: A scoping review

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### Abstract

This review aimed to ascertain the prevalence of mental health issues among people with diabetes in Nigeria, the nature of care available for them and the effectiveness of available interventions or management strategies used to treat diabetes-related mental health challenges. Four databases, Google Scholar, PubMed, PsycINFO and Cochrane, were searched. Thirteen studies that focused on the prevalence of mental health challenges among diabetes patients were selected for data extraction and analyses. Another set of five studies was also selected to analyze the effectiveness of diabetes care available to diabetes patients with mental health challenges. This scoping review shows that the prevalence rate of mental health problems among Nigerian diabetic patients is high. It also shows inadequate care or intervention provided to the patients. However, the few available care and interventions were found to be very effective.

**Keywords:** Depression, anxiety symptoms, cervical cancer, rural women.

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## Introduction

The rate of mental health challenges among people with diabetes has increased worldwide, and several scholars have attributed this rise to different causative factors. Among some other factors identified, studies have found that depression is a largely underdiagnosed complication of diabetes since it is found to be common among diabetes patients (Bamidele et al., 2023). Diabetes Mellitus (DM) is a health condition marked by either a complete or partial reduction in insulin secretion or effectiveness. According to the International Diabetes Federation (IDF, 2021), about 537 million adults live with the condition worldwide. Three in every four persons with diabetes live in low and middle-income countries. The federation also projects that there will be over 783 million adults with diabetes by 2045. Diabetes is characterized by the body's inability to process and use glucose from food as energy, accumulating excess glucose in the blood. As Afolabi and Okeoghene (2017) note, it is common among patients with diabetes to experience hyperglycaemia since their body system can no longer moderate the glucose levels in the blood as it should.

Diabetes mellitus is classified into four categories, namely, Type 1 diabetes, which was previously referred to as insulin-dependent diabetes mellitus (IDDM); Type 2 diabetes, previously known as noninsulin-dependent diabetes mellitus (NIDDM); Gestational diabetes (a type of glucose intolerance common among pregnant women), and the fourth category of diabetes mellitus is referred to as other types of diabetes caused by definite disorders. The most common type of diabetes is type 2 diabetes, characterized by insulin resistance and continuous increases in the body's blood glucose levels because insulin does not function properly. Hence causing exhaustion of the pancreas and the production of less insulin. On the other hand, type 1 diabetes affects a smaller percentage of adults. It is an autoimmune condition whereby the body's defence system fights against the body's insulin-producing cells, causing the body to produce little or no insulin. According to the International Diabetes Federation, more than 380 million people worldwide have been diagnosed and are living with type 2 diabetes (IDF, 2017; 2021; 2022). IDF also states that although type 2 diabetes is common among older adults, it is now increasingly seen in younger adults, children, and adolescents due to rising levels of obesity and poor diet/exercise (Asonye, & Ojewole, 2023). Another report by the International Diabetes Foundation estimates the prevalence of diabetes in Nigerian adults at 3.7%, with 3,623,500 cases.

Although the link between mental health and diabetes is yet uncertain, mental health issues such as depression are said to likely develop due to psychological adjustment to illness or from the metabolic effects of diabetes on the brain (Agbir et al., 2010; Garrett & Doherty, 2014). According to the World Health Organization (2001), mental health challenges such as depression are marked by constant indifference and displeasure in certain activities previously enjoyed. Studies have shown that several strategies used in managing diabetes to achieve optimal glucose levels can potentially cause mental health issues such as distress for the patients. This is corroborated by Freckleton et al. (2014), who state that efficient management of diabetes could lead to distress. However, despite the high rate of depression in Africa and Nigeria, especially among people with diabetes and other chronic illness patients, the diagnosis rate remains relatively low, limiting their chances of receiving adequate treatment. A 2015 research by Obadeji et al. found that a physician diagnosed none of the respondents in the study who exhibited symptoms of depression. This also confirmed the under recognition of depression among primary-care patients (Obadeji et al., 2015). Against this backdrop, this study sought to analyze the prevalence of mental health issues among diabetes patients and discover the nature of management and care received by diabetes patients suffering from mental health issues.

## Method

### Study Design

To effectively map the number of research on the prevalence of mental health challenges among diabetic patients in Nigeria, this scoping review was conducted in accordance with the methodology provided by the Joanna Briggs Institute (JBI) (Peters et al., 2015) for scoping reviews while the PRISMA-ScR extension (Tricco et al., 2018) illustrates the process followed.

### Information Sources and Database Search

This researcher searched databases such as Google Scholar, PubMed, PsycINFO and Cochrane and screened the reference list of all relevant studies for additional studies. Results discovered from the database search were exported into Zotero, and duplicates were removed; articles were then imported into Rayyan, a screening tool (Ouzzani et al., 2016), which two independent reviewers reviewed in a two-step process. Following the preliminary search, which ended on August 05, 2023, the researcher added additional search terms to the list based on the first search results. The reference lists of the articles included in the search were further reviewed. The following search terms aimed at providing relevant search results for each of the concepts included in this review were developed: Diabetes and mental health in Nigeria; Prevalence of mental health issues among diabetes patients; Care and management for diabetes patients; Care and management of mental health issues among diabetes patients; diabetes distress in Nigeria; Depression and diabetes in Nigeria. This researcher also used a stipulated set of keywords applied with Boolean operators (i.e., “OR,” “AND”) to improve search results/output.

The following search strategy was utilized in this scoping review:

1. “mental health” OR “mental well-being” OR “suicidal thoughts” OR “mental disorder\*” OR “mental illness” OR “mental well-being” OR “psychiatry\*” OR “psychological health” OR “psychological distress” OR “psychological impact” OR “distress\*” OR “behavioral disorder\*” OR “cognitive disorder\*” OR “cognitive impairment\*” OR “emotional distress” OR “depression” OR “depressive disorder\*” OR “anxiety” “glucose OR “bipolar disorder”.
2. “diabetes\*” OR “diabetes mellitus\* diabetics” OR “gestational diabetes” OR “IDDM” OR “NIDDM” OR glucose intolerance” OR “insulin-dependent” OR “diabetes patients” OR “type 1 diabetes” OR “type 2 diabetes”
3. “intervention\*” OR “diabcare\*” OR “management\*” OR “therapy\*” OR “counselling\*” OR “management\*” OR “diabetes care\*”.
4. “Nigeria\*” OR “developing countries\*” OR “developing country\*” OR “Southeast\*” OR “South-south\*” OR “Southwest\*” OR “Northeast\*” OR “Northwest\*” OR “Northcentral\*”.

### Eligibility Criteria

#### Inclusion Criteria

1. The review included all studies that reflect the nature of care given to diabetes patients with mental health issues.
2. It reviewed studies that considered the mental health of diabetes patients.
3. The review considered studies conducted in any state or region within Nigeria.

4. It also considered all quantitative and qualitative research studies that utilized any intervention for treating eating disorders.

### Exclusion Criteria

Studies that do not consider the mental health of diabetes patients and do not highlight the care and management of these patients were excluded from this review. As well as non-systematic reviews, books, systematic reviews, opinion papers, and pre-conference abstracts that do not consider the mental health of diabetes patients and do not highlight the care and management of these patients were excluded.

### Study Selection and Data Extraction

#### Screening

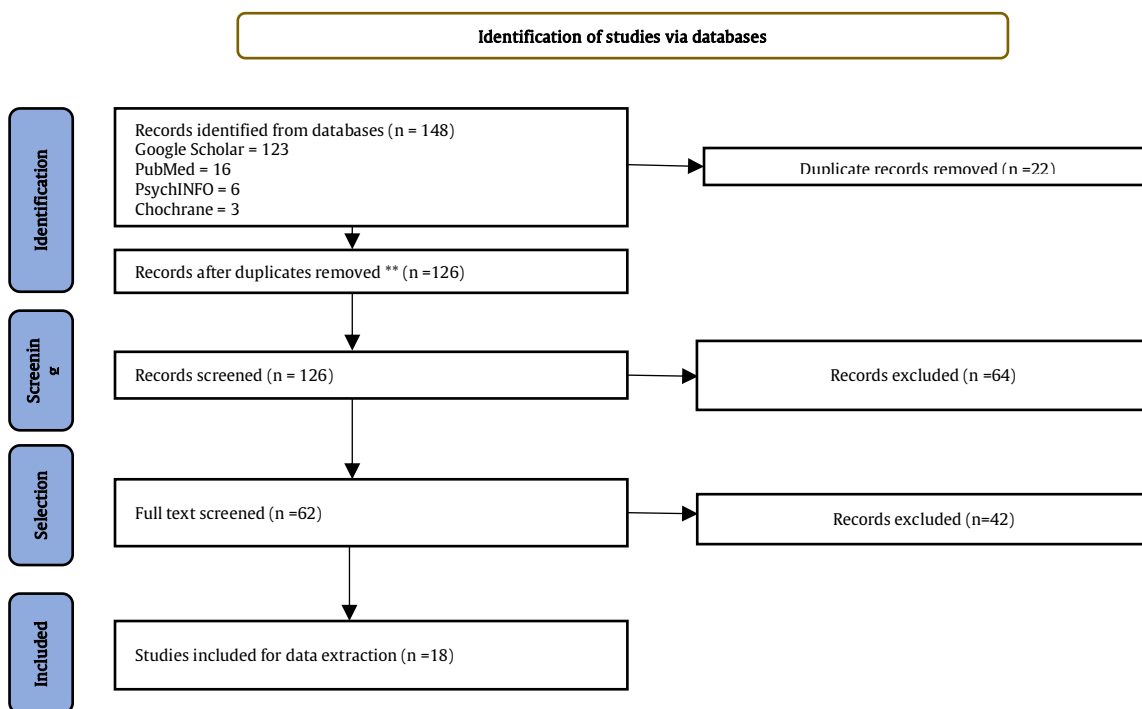
Relevant papers were selected following a thorough search of four databases and imported to Zotero, from where they were uploaded to the web tool Rayyan. Two reviewers then screened and assessed all the titles and abstracts of papers using the stipulated inclusion and exclusion criteria. Papers with uncertain eligibility status at this stage were kept aside for further review in the assessment stage.

#### Selection

Full text of articles selected after the screening were read by two reviewers to determine eligibility. Discrepancies were resolved, and the final set of papers that met the inclusion criteria were selected for data extraction.

#### Data Extraction Process

The selection process for this scoping review was done in two stages. In the first stage, all articles found through database search were manually screened using the information in the title/ abstract. The full text of all articles remaining after the first screening were then retrieved and read by two reviewers to determine their eligibility for inclusion using the stipulated criteria as a guide. This was followed by data extraction of the necessary information from the selected papers, which were recorded using tables. The data extracted from selected papers include author(s) names, year of publication, study location, study design, population of study participants, sample size, type of mental health assessed, prevalence rate found, and demographic details of participants.



**Figure 1.** Flow chart illustrating the screening and selection process of this scoping review

## Results and Discussion

The electronic search of the five databases identified 148 articles that had to do with the mental health of diabetes patients in Nigeria. One hundred and twenty-six papers remained after the removal of duplicates. The first screening, which involved reading titles and abstracts, was done by two independent researchers who assessed papers using the stipulated criteria. After the first screening, which involved reading abstracts, 64 papers were excluded, and the 62 remaining papers were screened a second time by reading the full text. After this, only 18 papers ticked all the inclusion criteria boxes and were selected for data extraction. Thirteen selected papers were analyzed to assess the prevalence of mental health issues among diabetes patients (see Table 1), while five studies were analyzed to assess the nature and effectiveness of diabetes care/management (see Table 2).

Findings from this scoping review reveal that the 18 articles selected for data extraction were published between 1996 and 2022 and covered all geopolitical zones in Nigeria. The majority were conducted in the southwestern and southeastern parts of the country. The sample size of all 18 studies ranged from 50-550 participants, and findings from all studies reveal a mental health challenge prevalence rate of 8.33%-51.9%. Of all mental health challenges searched and found in this study, depression was found to have been the focus of the 13 analyzed studies, diabetes distress was the focus of four studies, while one of the studies focused on negative mental health in general.

**Table 1:** Prevalence of mental health issues among diabetes patients in Nigeria

Authors	Year	Study location	Study Design	Population	Sample size	Type of mental health assessed	Prevalence rate	Participants' (Gender & Age)
Bamidele et al.	2023	Kwara State	Cross-sectional study	Type diabetes patients	2 Total sample=231	Depression	27%	Gender: male and female adults Age: 18+
Agbir et al.	2010	Plateau State	Cross-sectional, descriptive study	Diabetes Mellitus patients	Total sample=160	Depression	19.4%	Gender: Male and female. Age: 20-59 years
Edah et al.	2020	Plateau State	Descriptive, cross-sectional study	Diabetes Mellitus patients	Total sample=310	Depression	11.3%	Gender: male and female. Age range: 20-80 years
Adesina et al.	2018	Ogun State	Cross-sectional study	Type diabetic out-patients	2 Total sample=50	Diabetes Distress	30%	Gender: male and female Mean Age: 55.16+16.87 years
Abba et al.	2020	Kano State	Cross-sectional survey	Diabetes Mellitus	Total sample=144	Depression	22.3%	Gender: male and female. Age range = 18-78+ years
Igwe et al.	2013	Enugu State	Cross-sectional survey	Diabetes Mellitus	Total sample = 270	Depression, suicidal behavior	27.8%	Gender: male and female Age range: 18-64 years
Ibrahim et al.	2013	Borno State	Cross-sectional study	Diabetes Mellitus	Total sample = 288	Clinical depression	8.33%	Gender: male and female; Age range: 18-60 years
Okwaraji et al.	2017	Ebonyi State	Cross-sectional descriptive study	Diabetes out-patients	Total sample = 550	Negative mental health	19.3%	Gender: male and female Age range: 20-68

Authors	Year	Study location	Study Design	Population	Sample size	Type of mental health assessed	Prevalence rate	Participants' (Gender & Age)
Onyenekwe et al.	2020	Enugu State	Cross-sectional and descriptive study	Diabetes patients	Total sample = 110	Diabetes Distress	51.9%	Gender: male and female Age range: 35–85 years
Obadeji et al.	2015	Ekiti State	Cross-sectional descriptive survey	Diabetes patients	Total sample=272	Depression	47.8%	Gender= male and female Age range = 18-90
Jombo & Onung	2018	Akwa-Ibom State	Cross-sectional study	Type 2 diabetes	2 Total sample =106	Depression	30.8%	Gender: male and female Age range:
James et al.	2010	Edo State	Cross-sectional study	Diabetes mellitus	Total sample = 200	Depression	30%	Gender: male and female Age range: 20-64
Akinlade et al.	1996	Oyo State	Cross-sectional study	Diabetes	Total sample= 83	Depression	25.3%	Not provided

**Table 2:** Effectiveness of diabetes care interventions available for diabetes patients with mental health challenges in Nigeria

Authors	Year	Study location	Study Design	Population	Sample size	Treatment sessions and timeframe	Study emphasis	Type of mental health	Type of Intervention delivered	Participant Characteristics	Result
Eseadi et al.	2017	Anambra state	Pretest–posttest control group design	Type 2 diabetes patients	Total sample=80 Treatment group=40 Control group=40 Male=25 Female=55	9 weeks; 18 sessions ; 50 minutes per session.	Depressive thinking	Depression	Rational emotive cognitive behavioral coaching (RE-CBC)	Gender: male and female adults Average age: 22.47-52.75 years	Effective
Onyechi et al.	2016	Anambra state	RCT	Type 2 diabetes in-patients	Total sample=80	9 weeks; 18 sessions , 50 minutes per session.	The severity of depression in type 2 diabetic patients.	Depression	Cognitive Behavioral Coaching	Gender: male and female. Age range: 40-60 years	Effective
Onu et al.	2022	Kaduna state	Cross-sectional research design	Type 2 diabetes out-patients	Total sample=396 Female=210; Male=186	Not reported	The relationship between diabetes distress and quality of life of T2D patients	Distress	Social support	Gender: male and female. Age range:28-77	Effective

(Depressive and anxiety symptoms among Nigerian rural women diagnosed with cervical cancer)

Barminas & Yohanna	2017	Nasarawa state	RCT	Type 2 diabetic out-patients	Total sample=88 Person-centered counseling =44 Control group with usual care=44	12 weeks; 6 sessions	The effect of person-centred counseling on depressive symptoms among type II diabetic patients	Depression	Person-centred Counseling	Gender: male and female Age range reported: 18-65 years	Effective
Onwuchuba et al.	2019	Lagos state	Cross-sectional descriptive study	Type 2 diabetes patients	Total sample=176; male =53 Female = 123	Three months	Impact of self-care on diabetes-related distress	Distress	Self-Care	Gender: male and female. Average age = 20-51+	Effective

This study aimed to analyze extant literature that measured the prevalence of mental health challenges among diabetes patients in Nigeria. It also aimed to integrate available literature on the nature and quality of care given to diabetes patients with mental health issues in Nigeria. Several researchers have found that there is a relative increase in the prevalence of diabetes, its preventive measures and effective treatment methods. However, this knowledge remains under-utilized in actual practice because only about a third of diabetes patients in Nigeria can achieve the desired targets that revolve around glycaemic and blood pressure control (Chinenye & Young, 2011). In Nigeria, the prevalence of diabetes has continued to increase due to poor management structures in the country's healthcare system and the lack of adequate equipment needed to manage the various intricacies of the disease. So far, researchers have noted that the care and management of diabetes in Nigeria is below optimal levels, leading to poor outcomes. One such study by Nwankwo et al. (2010) posits that Nigeria's healthcare delivery system is grossly inadequate, with a shortage of medicines, patient education, and functional laboratory testing for complications. According to Nwankwo et al., the consequence is that inadequate management and non-compliance with global guidelines contribute to high diabetes morbidity and mortality (ibid).

With this trend in mind, scholars have recommended the shift from dependence on healthcare facilities to self-care practices as the best diabetes management strategy. The American Diabetes Association (ADA) maintains that management of diabetes should include practices that should be done by the patients themselves, not healthcare providers. Such practices for effective management of diabetes include healthy meals, adequate physical exercise, proper medication, regular clinic visits, and monitoring of blood glucose levels, among other things (American Dietetic Association, 2006). Enikuomehin et al. (2021), in their assessment of the nature of care available for diabetes patients with mental health issues in Nigeria, opine that one of the important skills required to manage diabetes effectively is self-care practice. This is because diabetes patients spend more time alone than at hospitals with healthcare providers. Hence, they are in the best position to manage their diabetes condition. Based on the results of Enikuomehin's (ibid) study, only 83.1%, 66.9%, 28.4%, and 27.9% of patients adhered to prescribed medications, exercised and kept meal plans as part of their diabetes management and Self-Monitoring of Blood Sugar (SMBG). The study found that people with diabetes adhered less than satisfactorily to recommended self-care practices.

On the other hand, Adejoh (2014) opines that patients' personal, health and religious beliefs should be considered in properly managing people with diabetes as this would help provide effective intervention programs for them. Physicians need to understand diabetes patients' knowledge and beliefs about diabetes and how these affect their decisions if they expect them to adhere to their physicians' recommendations (Adejoh, 2014). Similarly, Chinenye et al., in a 2012 study across health centers in Nigeria, evaluated 531 diabetic out-patients and found that 72.8% did not practice self-monitoring of blood glucose. For Raimi et al. (2014), diabetes education and using mass media for sensitization and awareness about diabetes remain key management strategies for diabetes in Nigeria.

Findings from this review show that mental health issues are prevalent among diabetes patients of all genders and ages, but mostly affects people within the age range of 18-90 years. This means no one is exempt from the mental health challenges associated with diabetes. Hence, there is a need to improve the care and management of diabetes mellitus among patients in Nigeria. Findings from this study reveal that the prevalence of mental health issues among diabetes patients in Nigeria is high. The scoping review reveals that of the 14 studies that analyzed the prevalence of mental health issues among diabetes patients in Nigerian hospitals, 10

studies recorded prevalence rates above 20%, while the remaining four studies were below 20%. Some of the studies reviewed for this study ascertained mental health prevalence among diabetes patients by administering the depression module of the Schedule for the Clinical Assessment in Neuropsychiatry (SCAN) and the World Health Organization Quality of Life Assessment. Others used the Beck Depression Inventory-II and a Diabetic Inpatient's Depressive Symptoms Observation Checklist.

As shown in Table 2 of this scoping review, several studies by Nigerian scholars have used different intervention methods to manage diabetes patients with mental health challenges. Five studies were found to have utilized rational emotive cognitive behavioral coaching (RE-CBC), cognitive behavioral coaching, social support, person-centered counseling and self-care as intervention strategies to manage the mental health challenges of diabetics. These interventions were found to be very effective as the outcomes significantly improved their mental health status and diabetes mellitus. A 2020 study of diabetes also found that 50% of over 64 PCPs had not participated in any diabetes training since their graduation from medical school and were unaware of any diabetes clinical practice guidelines (Young et al., 2020). As Garrett et al. (2014) rightly note, diabetes is notorious for frequently overlapping with mental illness. Hence, clinicians need to be aware and supportive of patients' mental health to improve their coping strategies, which would reduce their risk of developing complications. This current study builds on the existing body of literature in stating that more Nigerians are experiencing mental health decline due to diseases such as diabetes. Researchers would find this scoping review useful in deciding what to consider in their future research, which could include interventions or strategies for managing the mental health of diabetes patients and the success and or failure of such strategies. However, the current study is only a scoping review of available literature on the mental health status of people living with diabetes in Nigeria. It only assessed the prevalence of mental health challenges among diabetes patients and the effectiveness of interventions used in its management. However, the study did not assess the quality of the studies and the rigor involved. The study only focused on studies conducted in Nigeria and not other African countries, which would have helped draw a comparative conclusion

## Conclusion

Findings from this study reveal that many scholars have carried out extensive research on diabetes mellitus, its prevalence and the extent of mental health challenges faced by diabetes patients resulting from their health condition and lifestyle. This scoping review found several studies that focused on the prevalence of mental health challenges, especially depression and distress, but nothing was found of other mental health challenges. It was also found that only five studies spotlighted the interventions used in managing diabetes patients with mental health issues. This implies that despite the increasing prevalence of mental health challenges among diabetes patients, little or nothing has been done to manage the condition to achieve optimal results effectively. Therefore, more research should be conducted to test different intervention strategies and their effectiveness in managing diabetes-related mental health challenges. It is also recommended that treatments for diabetes should begin with a proper diagnosis of both diabetes and mental health symptoms to cater for the mental health needs of these patients properly and not merely treat diabetes while leaving out the underlying mental health decline associated with the disease.

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