

ISRG JOURNAL OF CLINICAL MEDICINE AND MEDICAL RESEARCH [ISRGJCMR]



OPEN ACCESS



ISRG PUBLISHERS

Abbreviated Key Title: ISRG J Clinic.Medici.Medica.Res.

ISSN: 3048-8850 (Online)

Journal homepage: <https://isrgpublishers.com/cmmr/>

Volume – III, Issue - II (March-April) 2026

Frequency: Bimonthly



Knowledge, Management, and control of Diabetes Mellitus among Diabetes patients attending a Federal Tertiary Health Institution in North-Western Nigeria

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| Received: 06.04.2026 | Accepted: 12.04.2026 | Published: 18.04.2026

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Abstract

Introduction: Diabetes mellitus is still a serious global public health concern, especially in underdeveloped nations where there is still a lack of knowledge and efficient treatment. Effective glucose control and the avoidance of complications depend on patients having enough information and self-management skills. **Objective:** This study assessed the knowledge, management practices, and control of diabetes mellitus among diabetic patients attending the Federal Medical Centre, Gusau, Zamfara State, Nigeria. **Methods:** The study employed a descriptive cross-sectional study design among patients diagnosed with diabetes mellitus attending the outpatient clinics of the Federal Medical Centre, Gusau. A standardised questionnaire measuring sociodemographic traits, diabetes knowledge, management techniques, and self-care behaviours was used to gather data. The results were summarised using descriptive statistics. **Results:** Patients' awareness of the causes, symptoms, and complications of diabetes varied according to the study. There were still gaps in understanding on blood glucose self-monitoring, lifestyle change, and complication avoidance, even though many respondents understood the significance of medication and dietary control. **Conclusion:** The results highlighted that despite patients' basic understanding of diabetes, there are substantial gaps in their self-management and disease control behaviours. Improving patient counselling services and bolstering diabetes education initiatives in medical facilities may improve disease management and lower complications.

Keywords: Diabetes mellitus, patient knowledge, self-management, glycemic control, Nigeria

1.0 Introduction

A chronic metabolic disease, Diabetes Mellitus result from persistent hyperglycemia brought on by deficiencies in insulin secretion, insulin action, or both (WHO, 2021). This condition is linked to long-term harm to organs like the kidneys, heart, nerves, and eyes (Care & Suppl, 2019). Diabetes has become much more common worldwide in recent years and is still a significant public health concern (Duncan et al., 2026).

According to the World Health Organization, hundreds of millions of people worldwide live with diabetes, and the burden is expected to increase significantly in developing countries (Smokeless, 2023). In Nigeria and other parts of sub-Saharan Africa, rapid urbanization, sedentary lifestyles, and dietary changes have contributed to the growing prevalence of diabetes mellitus (Asiedu et al., 2024).

Effective management of diabetes requires a combination of medication adherence, lifestyle modification, regular monitoring of blood glucose levels, and patient education (Nampalliwar et al., 2026). Patient knowledge plays an important role in diabetes control because individuals living with the disease must actively participate in daily self-care activities such as diet regulation, exercise, medication use, and monitoring blood glucose levels (Care & Suppl, 2019).

Many patients still have poor glycaemic control despite improvements in medical management because of a lack of awareness, poor treatment compliance, and restricted access to health education. Therefore, it is crucial to comprehend patient knowledge and management practices in order to create interventions that work.

This study assessed the knowledge, management practices, and control of diabetes mellitus among patients attending the Federal Medical Centre, Gusau, Zamfara State, Nigeria.

1.1 Statement of the problem

According to the Centre for Disease Control and Prevention's 2008 forecast, the number of newly diagnosed diabetics worldwide is predicted to rise by around one million per year and surpass thirty million by 2030. Providing clients and patients with high-quality, evidence-based care for acute and chronic illnesses across conventional and novel healthcare settings remains a challenge for today's healthcare providers. Since diabetes is a chronic condition, those who have it must be well-versed in self-care so they may actively participate in their own management (Eisler, 2003). It is a problem that needs to be addressed when diabetic individuals visit clinics frequently, and their blood glucose level is still elevated despite their therapy. This is a prevalent finding among many individuals with diabetes (Eisler, 2003).

1.2 Research question

- What do diabetes patients know about diabetes?
- What do they know about management and control of diabetes mellitus?
- What is their knowledge of self-care? Do they know about it
- Do the patients receive any counselling sessions from the healthcare providers in the hospital?

1.3 Aims and Objectives of the study

1.3.1 Aims

To determine the knowledge, management practices, and control of diabetes mellitus among diabetic patients

1.3.2 Objectives

- To determine the patient's knowledge about diabetes mellitus
- To determine the patient's knowledge about diabetes management and control measures
- To determine knowledge of self-care in diabetes management and control.
- To identify health information received by the patient from health care providers.

2.0 Methods

2.1 Study Setting and Design

A descriptive cross-sectional study was conducted among diabetic patients attending the Federal Medical Centre, Gusau, Zamfara State, Nigeria.

2.2 Study Population

The study population consisted of adult patients diagnosed with diabetes mellitus and receiving care at the outpatient clinics of the hospital.

2.3 Data Collection

Data was collected using a structured questionnaire designed to assess demographic characteristics, knowledge about diabetes mellitus, management practices, and self-care behaviours.

2.4 Data Analysis

Data were analysed using descriptive statistical methods, including frequencies and percentages, to summarise responses from participants.

2.5 Ethical Consideration

Ethical approval for this study was obtained from the Health Research Ethics Committee of the Federal Medical Centre, Gusau, Zamfara State, Nigeria. Participation in the study was voluntary, and informed consent was obtained from all respondents before data collection. Confidentiality of participants' information was maintained throughout the study, and all data were used strictly for research purposes.

3.0 Results

The results indicated that most respondents had heard about diabetes mellitus and recognised some of its common symptoms, such as excessive thirst, frequent urination, and fatigue. Many participants were aware that diabetes requires long-term treatment and regular medical follow-up.

However, gaps were identified in specific areas of disease management. Some respondents lacked adequate knowledge of blood glucose monitoring, diabetes complications, and lifestyle modifications, such as regular exercise and weight management.

Medication adherence was relatively high among respondents receiving treatment at the clinic, although some participants reported difficulty adhering to recommended dietary restrictions and maintaining consistent physical activity.

3.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 3.1 shows an interpretation of the socio-demographic characteristics of the study participants. A total of 164 respondents participated in the study. The majority were male (58.5%), whereas 41.5% were female, indicating slightly higher male participation in the study population.

Regarding age distribution, more than half of the respondents (54%) were older than 50 years, followed by 26% aged 40–50

years, 13% aged 30–40 years, and 7% younger than 30 years. This suggests that diabetes mellitus is more common among older adults, which aligns with the known epidemiology of the disease, where prevalence increases with age.

In terms of educational status, 32% had non-formal education, 30% had primary education, 16% had secondary education, and 22% had tertiary education. The relatively high proportion of respondents with low educational attainment may influence their level of knowledge and self-management practices regarding diabetes.

Most respondents were married (66%), 24% were widowed, and 10% were single, suggesting that most had family support systems, which may influence disease management.

The majority of respondents (85%) were recruited from the Medical Out-Patient Department (MOPD), while 15% were from the General Out-Patient Department (GOPD). This indicates that most participants were likely receiving specialised follow-up care for their condition.

With respect to occupation, housewives constituted the largest group (35.4%), followed by civil servants (23.8%) and farmers (22%), while smaller proportions were students, private organisation workers, or businesspeople. Occupational differences may influence lifestyle patterns such as diet and physical activity, which are important in diabetes management.

Table 1: Socio-Demographic Characteristics of Respondents (N = 164)

Variable	Frequency	Percentage (%)
Sex		
Male	96	58.5
Female	68	41.5
Age		
< 30 years	11	7
30–40 years	22	13
40–50 years	42	26
> 50 years	89	54
Education		
Non-formal Education	52	32
Primary Education	49	30
Secondary Education	27	16
Tertiary Education	36	22
Marital Status		
Single	16	10
Married	108	66
Widowed	40	24
Clinics		
MOPD	139	85
GOPD	25	15

Occupation	Frequency	Percentage (%)
Civil Servant	39	23.8
Farmer	36	22
Business	10	6.1
Student	5	3
Housewife	58	35.4
Private Organization	7	4.3
Others	9	5.5

GOPD: General Outpatient Department; **MOPD:** Medical Outpatient Department

3.2 Awareness and Knowledge of Diabetes Mellitus

Figure 3.1 shows the level of knowledge and awareness about diabetes mellitus among the respondents. Figure 3.1A shows that a substantial number of respondents were aware of diabetes mellitus and knew about their condition. The sources through which respondents became aware of their diabetes (such as hospital diagnosis or screening), as shown in Figure 3.1B, highlight the important role of health facilities in disease detection, as all the respondents had their condition known via hospital screening.

Additionally, a greater number of the respondents, 128(78%), as shown in Figure 3.1C, reported having a family history of diabetes, suggesting a possible genetic predisposition, which is a recognised risk factor for the disease.

Awareness of the symptoms of diabetes mellitus among respondents, as shown in Figure 3.1D, indicates that many patients had some level of knowledge about the disease, although the depth of understanding may vary.

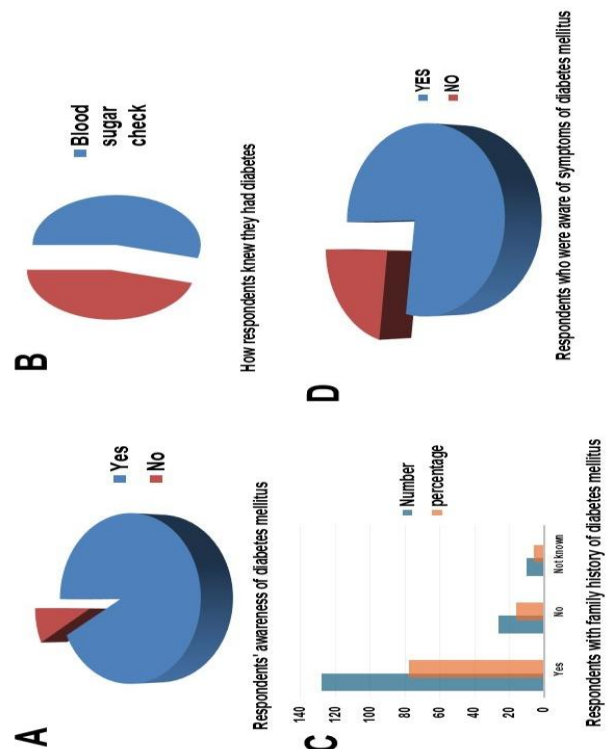


Figure 3.1: Respondents' knowledge and awareness about diabetes mellitus

3.3 Management and Control of Diabetes Mellitus

Table 3.2 shows the respondents' knowledge of management and control of Diabetes Mellitus. The results show that 85% of respondents knew how diabetes mellitus can be treated, indicating a relatively high level of knowledge regarding treatment options.

Regarding treatment modalities, the majority (59.8%) used a combination of drugs and dietary control, which reflects recommended clinical practice for diabetes management. Other treatment approaches included:

- Drugs only – 21.5%
- Diet only – 9.8%
- Insulin only – 1.8%
- Drugs and insulin – 4.3%
- Drugs, insulin and diet – 3%

This indicates that pharmacological treatment combined with lifestyle modification is the most common management strategy among respondents.

A high fraction (83%) was aware of the importance of treatment compliance, and 89% understood that treatment adherence reduces complications. This reflects good awareness regarding the importance of following medical advice to prevent complications such as neuropathy, nephropathy, and cardiovascular disease.

Table 3.2: Management and Control of Diabetes Mellitus

Variable	Frequency	Percentage (%)
Know how to treat diabetes	140	85
Drugs only	35	21.5
Diet only	16	9.8
Insulin only	3	1.8
Exercise only	0	0
Drugs + Diet	98	59.8
Drugs + Insulin	7	4.3
Drugs + Insulin + Diet	5	3
Knowing the role of compliance	118	83
Know compliance reduces complications	106	89

3.3 Health Education and Counselling

Table 3.4 shows respondents' knowledge of the role of health education and counselling in the management of diabetes. An overwhelming 93% reported receiving health education or counselling during hospital visits, suggesting that health workers are actively providing patient education. Furthermore, 98.7% of respondents believed that health education improved their condition, indicating that educational interventions may positively influence patient behaviour and disease management outcomes.

Table 3.3: Health Education / Counselling in Diabetes Management and Control

Variable	Frequency	Percentage (%)
Received health education during a clinic visit	152	93
Health education improves the condition	150	98.7

3.4 Self-Care Practices in Diabetes Management

Table 3.4 shows the respondents' knowledge about self-care in the management and control of Diabetes Mellitus. Despite relatively good awareness and counselling, self-care knowledge appeared limited among respondents. Only 43.3% reported knowing what self-care in diabetes management entails, indicating a knowledge gap in areas such as blood glucose monitoring, dietary management, physical activity, and foot care.

Additionally, only 17% had consulted a dietician regarding their diet, suggesting that many patients may not be receiving specialised nutritional guidance, which is crucial for effective diabetes management.

Table 3.4: Self-Care Practices in Diabetes Mellitus Control

Variable	Frequency	Percentage (%)
Know what self-care means	71	43.3
Consulted a dietician	38	17

In summary, the results of the survey indicate that although respondents' awareness, treatment knowledge, and health education on diabetes mellitus are comparatively high, self-care behaviours and expert dietary advice remain suboptimal. The majority of those afflicted are older adults, and socioeconomic characteristics, including work and level of education, may have an impact on management techniques and disease understanding. Enhancing patient education initiatives and encouraging self-management techniques, such as dietary counselling and lifestyle changes, could substantially improve glycaemic control and reduce complications.

4.0 Discussion

This study evaluated the knowledge, management practices, and control of diabetes mellitus among diabetic patients attending the outpatient department clinics of the Federal Medical Centre in Gusau, Northwestern Nigeria. The findings indicated that although most respondents were aware of diabetes and its common symptoms, significant gaps existed in their understanding of disease management, particularly regarding lifestyle modification and the prevention of complications.

Millions of people worldwide suffer from diabetes mellitus, one of the most significant non-communicable diseases, particularly in low- and middle-income nations. More than 537 million people worldwide are estimated to have diabetes, and forecasts suggest that number will rise significantly over the next several decades (Asiedu et al., 2024).

The prevalence of diabetes is rising quickly in Nigeria. Millions of Nigerian people are thought to have the illness, according to recent epidemiological studies, and prevalence rates are still rising as a result of things like urbanisation, sedentary lifestyles, and poor diets (Olamoyegun et al., 2024).

The majority of respondents from this study had a basic understanding of diabetes mellitus. This outcome is in line with research from other African nations that found diabetic individuals had a modest level of awareness but ongoing knowledge gaps about long-term care techniques and illness complications (Asiedu et al., 2024).

However, some answers showed a lack of understanding of lifestyle management and blood glucose self-monitoring. Similar results were found in studies of diabetic patients in sub-Saharan Africa, where obstacles to effective diabetes self-management include limited access to healthcare facilities, insufficient health education, and financial constraints (Desse & Manias, 2024).

A key component of managing diabetes mellitus is still changing one's lifestyle. Improved patient education dramatically increases medication adherence and lowers consequences like neuropathy, kidney failure, and cardiovascular disease, according to studies (Luka et al., 2025). Additionally, it has been demonstrated that organized diabetes education programs greatly enhance patient awareness, self-efficacy, and glucose management. According to a Kenyan study, patients who took part in diabetes education programs had better blood glucose control and greater knowledge than those who did not (Bett & Ade-oshifogun, 2024). These results emphasise how crucial it is to improve diabetes education initiatives in medical facilities. Through routine counselling, monitoring, and patient-centred educational interventions, healthcare workers play a crucial role in improving patient outcomes.

5.0 Study Limitations

Even though this study produced insightful information, there are a few limitations that should be noted. First, the study used a cross-sectional design, which makes it more difficult to determine if patient knowledge and diabetes treatment techniques are causally related. Second, the results may not be as applicable to different demographics or healthcare environments because the study was limited to a single tertiary hospital centre. Third, the use of self-reported data may lead to social desirability bias or recall bias.

Future studies should involve more centres and a larger sample size to provide a better understanding of diabetes knowledge and management practices across different centres.

6.0 Conclusion/Recommendations

The study revealed that although diabetic patients attending the Federal Medical Centre in Gusau possess basic knowledge of diabetes mellitus, significant gaps remain in self-management practices, particularly in lifestyle modification and complication prevention. Strengthening diabetes education programs and improving patient counselling services in healthcare facilities may enhance patient knowledge, improve treatment adherence, and ultimately reduce the burden of diabetes-related complications.

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