World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Check for updates

Prevalence and risk factors for diabetes mellitus among adults aged 50 years and above in a community in imo state, Nigeria

Ngozi Victoria Akam *, Ebenezer Uchechukwu Anyanwu, Joy Adaku Mbachu, Ogechi Chikaodi Nwokeleme and Joy Nkechinyere Osuoji

Department of Public Health, School of Health Technology, Federal University of Technology Owerri, Imo State, Nigeria.

World Journal of Advanced Research and Reviews, 2026, 30(02), 1920-1929

Publication history: Received on 10 April 2026; revised on 20 May 2026; accepted on 22 May 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.30.2.1395

Abstract

Background: Diabetes mellitus is a growing global public health problem, particularly in low- and middle-income countries where the burden continues to rise rapidly. Older adults are especially vulnerable to type 2 diabetes and its complications. This study assessed the prevalence of type 2 diabetes among adults aged 50 years and above in Okwuato community, Aboh Mbaise Local Government Area, Imo State, Nigeria, and examined selected associated risk factors.

Methods: A community-based cross-sectional study design was adopted. A total of 157 respondents aged 50 years and above participated in the study using multistage sampling techniques. Data were collected using a structured questionnaire and fasting blood glucose (FBG) testing with a glucometer. Blood glucose levels were classified according to the American Diabetes Association criteria into normal, prediabetic, and diabetic categories. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 25.0 using descriptive statistics and chi-square tests, with statistical significance set at $p < 0.05$.

Results: The findings revealed that 58.6% of respondents had normal fasting blood glucose levels, while 24.2% were prediabetic and 17.2% were diabetic. A considerable proportion of respondents reported hypertension, physical inactivity, and other lifestyle-related risk factors. Respondents with family history of diabetes, hypertension, smoking, alcohol consumption, and poor sleep duration demonstrated noticeable occurrences of abnormal blood glucose levels. However, chi-square analysis showed no statistically significant association between these risk factors and diabetes status ($p > 0.05$).

Conclusion: The prevalence of prediabetes and diabetes among older adults in the study community was relatively high, indicating an emerging burden of metabolic disorders. The findings highlight the need for regular community-based screening, health education, lifestyle modification programs, and early intervention strategies to reduce the burden and complications of type 2 diabetes among older adults.

Keywords: Prevalence; Older Adults; Diabetes Mellitus; Risk Factors

1. Introduction

Diabetes mellitus (DM), commonly referred to as diabetes, is a dangerous and long-term condition marked by consistently elevated blood glucose levels as a result of either insufficient insulin production or the body's inability to use the insulin that is produced. Diabetes is one of the most common causes of death and morbidity worldwide, affecting people of all ages, genders, and geographical locations. Over 90% of cases of type 2 diabetes are caused by a combination of environmental and genetic factors. [1]

* Corresponding author: Ngozi Victoria Akam

One of the most important worldwide public health issues of the twenty-first century is diabetes mellitus. In addition to directly harming several organ systems, this metabolic disorder increases the risk of neuropathies, renal failure, and cardiovascular diseases. The International Diabetes Federation predicts that 783 million people will have diabetes by 2045, despite notable advancements in clinical management. This trajectory poses a threat to healthcare systems and impedes the achievement of the Sustainable Development Goals on non-communicable diseases. [2] Low and middle-income countries (LMICs) account for 79% of the population with diabetes. Diabetes cases in sub-Saharan African nations are expected to rise by 149% over the next 20 years, from 19 million in 2019 to 26 million by 2045. In Nigeria, 3.9 million adults had diabetes in 2019; by 2045, that number is expected to nearly double to 6.0 million. [3]

Nigeria has not recently conducted any nationwide surveys to precisely ascertain the country's diabetes burden. According to the most recent national survey on non-communicable diseases (NCDs), which was carried out in 1997, 2.2 percent of people have diabetes. Nigeria was identified as one of the nations lacking current diabetes data in the IDF 2019 reports. It will be challenging to develop targeted and suitable public health and policy responses to prevention and management strategies to stop the rise without knowing the estimates of the burden of diabetes. [3] Hence, there is a need for more research on the burden of diabetes in addition to its risk factors. The study aims to determine the prevalence of type 2 diabetes among adults 50 years and above in Okwuato community in Aboh Mbaise, Imo State, Nigeria.

2. Materials and methods

The study adopted a cross-sectional study design. The study was conducted in Okwuato, a community within Aboh Mbaise LGA, located in the southeastern part of Imo State, Nigeria. Aboh Mbaise is one of the three LGAs (alongside Ahiazu Mbaise and Ezinihitte Mbaise) that constitute the Mbaise area of Imo State, a culturally and linguistically homogeneous area in the heart of Igboland. Okwuato is a community with several villages. The study population consisted of adults aged 50 years and above residing in Okwuato Community.

The sample size for this study was determined using Cochran's formula for sample size estimation in prevalence studies, using 10.1% prevalence of diabetes reported in previous studies. The calculated sample size was 140. After adjusting for 15% non-response rate, the adjusted sample size was 165 respondents. In the course of the study, eight respondents withdrew, leaving a total of 157 respondents who completed the study.

Three villages were randomly selected through balloting without replacement namely Lagwa, Umunokwu, and Umuhu. Since reliable population data for each village were not available, an equal allocation was used, assigning 55 respondents to each village. Sampling started from the village centre and households were selected at an interval of two households. From each selected household, one eligible individual aged 50 years and above was selected and simple random sampling (balloting) was used when more than one eligible person was present. In cases where no eligible participant was found in a selected household, the next household was used.

The glucometer was the primary instrument for data collection. Fasting blood glucose (FBG) test was carried out. The respondent was informed about the purpose and importance of the test before the procedure commenced. Instructions were given to fast for at least 8–12 hours before blood sample collection. During the fasting period, the respondent was advised not to consume any food, sugary drinks, alcohol, or medications that could affect blood glucose levels unless prescribed by a physician. Only plain water was permitted during the fasting period. The researcher assembled all necessary materials, including a glucometer, compatible glucose test strips, sterile disposable lancets, alcohol swabs, cotton wool or gauze, disposable gloves, and a sharps disposal container. The glucometer was checked to ensure that it was functioning properly, calibrated where necessary, and that the test strips were within their expiry date. The researcher washed hands thoroughly with soap and water and wore disposable gloves to maintain infection prevention and control. The respondent was seated comfortably, and the middle finger was selected for the test. The selected fingertip was cleaned using an alcohol swab and allowed to air dry completely to avoid dilution of the blood sample and inaccurate results. A sterile lancet was then used to prick the side of the fingertip gently. The first drop of blood was wiped away with sterile cotton wool because it may contain tissue fluid that could affect the accuracy of the result. A second drop of blood was gently expressed by applying slight pressure to the finger without excessive squeezing.

A compatible glucose test strip was inserted into the glucometer according to the manufacturer's instructions. The tip of the test strip was placed in contact with the blood sample until sufficient blood was absorbed into the strip. The glucometer processed the sample, and the fasting blood glucose result was displayed on the screen within a few seconds. After obtaining the result, the value was read and recorded immediately in the data collection sheet. Gentle pressure was applied to the puncture site using dry cotton wool until bleeding stopped. The used lancet and other sharps were disposed of safely in a puncture-resistant sharps container, while other waste materials were discarded appropriately

according to infection prevention guidelines. The blood glucose reading was recorded in mg/dl. Readings were categorized according to the American Diabetes Association diagnostic criteria. [4] The classifications are as follows:

- Normal:FBG < 100 mg/dL (5.6 mmol/L)
- Prediabetes:FBG 100–125 mg/dL (5.6–6.9 mmol/L)
- Diabetes:FBG ≥ 126 mg/dL (7.0 mmol/L)

A structured questionnaire was used to elicit information on some risk factors of diabetes which included family history of diabetes, history of hypertension, physical activity frequency, smoking status, alcohol consumption, and sleep duration.

Prior to data collection, the purpose and procedures of the study were clearly explained to all respondents, and informed consent was obtained from each participant before participation. Participation in the study was entirely voluntary, and respondents were informed of their right to withdraw from the study at any stage without any penalty or loss of benefits. Confidentiality and anonymity of the information provided were assured and maintained throughout the study. All ethical principles guiding research involving human participants according to the Declaration of Helsinki were strictly adhered to, including respect for persons, beneficence, non-maleficence, and justice. Standard infection prevention and safety procedures were also observed during blood sample collection and testing.

Data obtained from the study were checked for completeness, coded, and entered into the SPSS version 25.0 for analysis. Descriptive statistics were used to summarize and present the data in tables. Chi-square test and t-test, where applicable, were used to determine associations and differences between variables. Statistical significance was set at $p < 0.05$ with a 95% confidence interval.

3. Results

The socio-demographic characteristics of the respondents as seen in Table 1, showed that most participants were between 50 and 69 years of age. Respondents aged 50–59 years formed the largest group with 38.2%, followed by those aged 60–69 years with 35.0%, while fewer respondents were aged 70 years and above. This indicates that the study population was largely made up of younger older adults. Female respondents were more represented in the study, accounting for 61.1% of the participants, whereas males constituted 38.9%.

In terms of marital status, the majority of respondents were married (68.8%), while 21.0% were widowed. Only a small proportion were single or separated. Educationally, most respondents had some form of formal education, with secondary education being the highest reported level (34.4%), followed by primary education (27.4%). However, 14.0% had no formal education. Occupational distribution showed that trading was the most common occupation among respondents (29.9%), followed by farming (18.5%) and artisan work (16.6%). Some respondents were professionals or civil servants, while 15.3% were unemployed.

The income distribution revealed that many respondents earned relatively low incomes. Most participants (39.5%) earned between ₦20,000 and ₦59,999 monthly, while 30.6% earned below ₦20,000. Only a few respondents earned ₦100,000 and above. Overall, the findings suggest that the respondents were predominantly female, married, moderately educated, and belonged largely to the low- to middle-income socioeconomic group.

In Table 2, the findings on fasting blood glucose levels revealed that more than half of the respondents had normal blood sugar levels. Specifically, 92 respondents (58.6%) had fasting blood glucose levels below 100 mg/dL, indicating normal glucose regulation. However, a considerable proportion of the participants were found to have abnormal blood sugar levels. About 38 respondents (24.2%) were categorized as prediabetic, with fasting blood glucose levels ranging from 100–125 mg/dL. This suggests that nearly one-quarter of the respondents were at risk of developing diabetes if preventive measures are not adopted.

Furthermore, 27 respondents (17.2%) were classified as diabetic, having fasting blood glucose levels of 126 mg/dL and above. This indicates that almost one out of every five respondents already had diabetic-level blood glucose. Overall, the findings suggest that while the majority of respondents maintained normal blood sugar levels, a significant proportion were either prediabetic or diabetic, highlighting the need for increased awareness, regular screening, and lifestyle interventions to prevent the progression and complications of diabetes among the study population.

Table 1 Socio-Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Age Group (years)	50–59	60	38.2
	60–69	55	35.0
	70–79	28	17.8
	80–89	10	6.4
	90 and above	4	2.5
	Total	157	100.0
Sex	Male	61	38.9
	Female	96	61.1
	Total	157	100.0
Marital Status	Married	108	68.8
	Widowed	33	21.0
	Single	10	6.4
	Separated	6	3.8
	Total	157	100.0
Educational Level	No formal education	22	14.0
	Primary	43	27.4
	Secondary	54	34.4
	Tertiary	32	20.4
	Others	6	3.8
	Total	157	100.0
Occupation	Artisan(carpenter, tailor, welder,driver)	26	16.6
	Trader	47	29.9
	Civil servant(Teacher,Police,gate keeper)	13	8.3
	Professional(nurse,lawyer, doctor, health worker)	18	11.5
	Unemployed	24	15.3
	Farmer	29	18.5
	Total	157	100.0
Monthly Income (₦)	<₦20,000	48	30.6
	₦20,000 – ₦59,999	62	39.5
	₦60,000 – ₦99,999	27	17.2
	₦100,000 and above	15	9.6
	Prefer not to say	5	3.2
	Total	157	100.0

Table 2 Fasting Blood Glucose Levels of Respondents

Blood Sugar Category	Frequency	Percentage (%)
Normal (<100 mg/dL)	92	58.6
Prediabetic (100–125 mg/dL)	38	24.2
Diabetic (≥126 mg/dL)	27	17.2
Total	157	100.0

The cross-tabulation of fasting blood glucose (FBG) status by gender in Table 3 showed that among the 61 male respondents, 34 had normal blood glucose levels, 17 were prediabetic, and 10 were diabetic. Among the 96 female respondents, 58 had normal blood glucose levels, while 21 were prediabetic and 17 were diabetic. In both males and females, normal blood glucose levels constituted the highest proportion of respondents, although a considerable number in both groups were either prediabetic or diabetic.

The chi-square test result ($\chi^2 = 0.73$, df = 2, p = 0.694) revealed no statistically significant association between gender and fasting blood glucose status among the respondents, as the p-value was greater than 0.05. This implies that the observed variations in blood glucose status between male and female respondents were due to chance and were not significantly influenced by gender.

Table 3 Cross-tabulation of FBG Status by Gender

Sex	Normal	Prediabetic	Diabetic	Total
Male	34	17	10	61
Female	58	21	17	96
Total	92	38	27	157

($\chi^2 = 0.73$, df = 2, p = 0.694)

The findings on diabetes-related risk factors, as seen in Table 4, showed that most respondents did not have a family history of diabetes, as 105 participants (66.9%) reported no family history, while 52 respondents (33.1%) indicated that diabetes existed in their family. In addition, 64 respondents (40.8%) had been diagnosed with hypertension, whereas 59.2% had no history of hypertension. This suggests that a considerable proportion of the respondents had underlying health conditions that may increase their risk of developing diabetes.

Regarding physical activity, only 26.8% of respondents engaged in daily exercise, while 24.2% exercised three to five times weekly. However, 19.1% reported rarely engaging in physical activity and 16.6% never exercised at all. This indicates that a substantial number of respondents were not physically active on a regular basis. Concerning mode of transport, walking was the most common means of movement (28.0%), followed by motorcycle use (21.0%) and public transport (19.7%). Only a few respondents used private cars, suggesting that some respondents still engaged in active movement through walking or cycling.

The findings further revealed that unhealthy lifestyle habits such as smoking and alcohol consumption were not very common among the respondents. Only 13.4% reported smoking, while the majority (86.6%) did not smoke. Similarly, 22.3% consumed alcohol, whereas 77.7% did not. With respect to sleep duration, more than half of the respondents (55.4%) slept for 5–7 hours daily, while 32.5% slept for more than 7 hours. However, 12.1% slept for less than 5 hours, which may negatively affect metabolic health. Overall, the findings suggest that although many respondents maintained moderate activity levels and avoided smoking or alcohol consumption, sedentary lifestyles, hypertension, and inadequate physical activity were still notable risk factors among the study population.

Table 4 Risk factors for Diabetes

Risk Factor	Category	Frequency	Percentage (%)
Family history of diabetes	Yes	52	33.1
	No	105	66.9
	Total	157	100.0
Diagnosed with hypertension	Yes	64	40.8
	No	93	59.2
	Total	157	100.0
Physical exercise frequency	Daily	42	26.8
	3–5 times/week	38	24.2
	Once/week	21	13.4
	Rarely	30	19.1
	Never	26	16.6
	Total	157	100.0
Mode of transport	Walking	44	28.0
	Bicycle	27	17.2
	Motorcycle	33	21.0
	Public transport	31	19.7
	Private car	22	14.0
	Total	157	100.0
Smoking	Yes	21	13.4
	No	136	86.6
	Total	157	100.0
Alcohol consumption	Yes	35	22.3
	No	122	77.7
	Total	157	100.0
Sleep duration	Less than 5 hours	19	12.1
	5–7 hours	87	55.4
	More than 7 hours	51	32.5
	Total	157	100.0

Table 5, which is the cross-tabulation of risk factors and fasting blood glucose (FBG) status, showed varying patterns among respondents with and without specific lifestyle and medical risk factors. Respondents with a family history of diabetes recorded higher numbers of abnormal blood glucose levels, with 15 respondents classified as prediabetic and 12 as diabetic, compared to those without a family history. However, respondents without a family history still accounted for a notable number of prediabetic and diabetic cases, indicating that factors other than heredity may also contribute to elevated blood glucose levels.

Similarly, respondents diagnosed with hypertension showed considerable occurrences of abnormal FBG status, including prediabetic and diabetic categories. This suggests a possible relationship between hypertension and poor glucose regulation, as both conditions are often linked to metabolic and lifestyle-related factors. In terms of sleep

duration, respondents with poor sleep patterns also demonstrated notable proportions of prediabetic and diabetic blood glucose levels, which indicates that inadequate sleep may contribute to impaired glucose metabolism. Among smokers, a proportion of respondents were found to be prediabetic or diabetic, while alcohol consumers also recorded noticeable levels of abnormal blood glucose status.

Table 5 Cross-tabulation of Risk Factors and FBG Status

Risk Factor	Yes Normal	Yes Prediabetic	Yes Diabetic	No Normal	No Prediabetic	No Diabetic
Family History of Diabetes	43	15	12	53	21	13
Hypertension Sleep Duration	45 39	15 14	10 17	56 53	15 19	16 15
Smoking	37	21	12	56	20	11
Alcohol Consumption	38	16	16	50	25	12

The chi-square analysis conducted to examine the relationship between selected risk factors and diabetes status, as shown in Table 6, revealed that none of the variables showed a statistically significant association with fasting blood glucose status among the respondents. Family history of diabetes had a chi-square value of 0.24 with a p-value of 0.885, indicating that there was no significant relationship between having a family history of diabetes and the respondents' diabetes status in this study.

Similarly, hypertension was not significantly associated with diabetes status, as shown by a chi-square value of 0.75 and a p-value of 0.687. Sleep duration also did not show a statistically significant relationship with diabetes status ($\chi^2 = 1.19$, $p = 0.553$). This implies that differences observed in blood glucose categories based on sleep duration may have occurred by chance. The findings suggest that although these risk factors may contribute to diabetes development biologically, they did not demonstrate a statistically significant relationship with fasting blood glucose status among the respondents in this study population.

Table 6 Chi-Square Test on Risk Factors and Diabetes Status

Risk Factor	Chi-Square	p-Value
Family History of Diabetes	0.24	0.885
Hypertension Sleep Duration	0.75 1.19	0.687 0.553
Smoking	2.13	0.344
Alcohol Consumption	2.37	0.306

4. Discussion

The present study assessed fasting blood glucose (FBG) status and associated risk factors among the respondents. The findings revealed that more than half of the participants had normal fasting blood glucose levels, while a considerable proportion were either prediabetic or diabetic. Specifically, 24.2% of the respondents were categorized as prediabetic, and 17.2% were diabetic.

The prevalence of prediabetes in this study is similar to the pooled national prevalence of prediabetes among adults in Saudi Arabia, estimated at 24.1%, but is higher than 18.2% reported in Iran. [5, 6] The 17.2% prevalence of diabetes in this study is comparable to 16.98% reported in a large Pakistani adult survey [7], but is lower than 36.1% recorded in a study by Alshaikhi. [8] The result for diabetes prevalence in this study is higher than the pooled prevalence of 7% reported from a review of studies in Nigeria, but is lower than 22% reported in South Africa. [3, 9]

These findings are important because they suggest that although the majority of respondents maintained acceptable glucose levels, a large proportion of the study population already had impaired glucose regulation. The relatively high prevalence of prediabetes observed in this study may indicate an increasing burden of metabolic disorders within the population, particularly among older adults. Prediabetes is widely recognized as a transitional stage between normal glucose metabolism and type 2 diabetes mellitus, and individuals within this category are at increased risk of progressing to diabetes if preventive interventions are not implemented.

The findings may also reflect the growing public health burden of non-communicable diseases in Nigeria, where urbanization, dietary transition, and sedentary lifestyles continue to increase the prevalence of diabetes and related metabolic conditions.

The absence of a significant association between sex and FBG status is consistent with some studies. [10, 11] This suggests that diabetes risk in older adults may be more strongly influenced by behavioral, metabolic, and environmental factors than by biological sex alone. It may also indicate that both male and female respondents were similarly exposed to diabetes-related risk factors.

The findings on family history of diabetes showed that approximately one-third of the respondents reported a positive family history of diabetes. Family history is an important non-modifiable risk factor because genetic predisposition plays a critical role in the development of type 2 diabetes mellitus. Respondents with a family history of diabetes recorded noticeable proportions of prediabetic and diabetic cases, suggesting a possible hereditary influence on glucose regulation. However, the chi-square analysis revealed no statistically significant association between family history and diabetes status. The lack of statistical significance may indicate that genetic predisposition alone was insufficient to determine diabetic status among the respondents. Environmental and lifestyle factors such as dietary habits, obesity, physical inactivity, and healthcare access may have exerted stronger influences on glucose metabolism than hereditary factors within this population. It is also possible that the relatively small sample size limited the ability to detect subtle associations between family history and diabetes status.

Hypertension was another important risk factor examined in the study. A considerable proportion of respondents had been diagnosed with hypertension. Respondents with hypertension recorded notable frequencies of prediabetic and diabetic blood glucose levels. Nevertheless, the association between hypertension and diabetes status was not statistically significant. Although the relationship was not statistically significant, the coexistence of hypertension and abnormal glucose levels among many respondents remains clinically important. Individuals with both hypertension and diabetes are at increased risk of cardiovascular diseases, kidney disease, stroke, and other metabolic complications. The absence of statistical significance in this study does not eliminate the possibility of a biological relationship between these conditions but may reflect variations in treatment adherence, blood pressure control, or other unmeasured confounding factors.

Physical activity patterns among the respondents revealed mixed behavioral trends. While some respondents engaged in daily exercise or were categorized as very active, a substantial proportion reported sedentary lifestyles or infrequent exercise. Physical inactivity is a major modifiable risk factor for insulin resistance and impaired glucose tolerance. Regular physical activity enhances glucose uptake by skeletal muscles, improves insulin sensitivity, supports weight management, and reduces the risk of metabolic disorders. The presence of sedentary behavior among one-third of the respondents may therefore contribute to the observed prevalence of prediabetes and diabetes.

The study further assessed smoking and alcohol consumption as behavioral risk factors. Although only a minority of respondents reported smoking or alcohol consumption, those who engaged in these behaviors demonstrated noticeable occurrences of abnormal fasting blood glucose levels. Smoking has been linked to increased insulin resistance, oxidative stress, systemic inflammation, and endothelial dysfunction, all of which contribute to diabetes risk. Similarly, excessive alcohol consumption may impair glucose metabolism and pancreatic function.

Despite these biological relationships, the chi-square analyses showed no statistically significant association between smoking and diabetes status or between alcohol consumption and diabetes status. These findings may be due to the relatively low prevalence of smoking and alcohol use among respondents, which may have reduced the statistical power to detect meaningful differences. In addition, variations in the quantity, frequency, and duration of smoking or alcohol consumption were not assessed, and these factors may influence the strength of the relationship with diabetes.

Sleep duration was also examined in relation to diabetes status. More than half of the respondents reported sleeping between five and seven hours daily, while a smaller proportion slept for less than five hours. Sleep plays a critical role in endocrine and metabolic regulation, and inadequate sleep has been associated with insulin resistance, hormonal

imbalance, increased appetite, obesity, and impaired glucose metabolism. Respondents with poor sleep duration demonstrated notable frequencies of abnormal fasting blood glucose levels. However, the chi-square analysis revealed no statistically significant association between sleep duration and diabetes status. The absence of statistical significance may indicate that sleep duration alone did not strongly influence fasting blood glucose levels within the study population.

5. Conclusion

This study assessed the prevalence of type 2 diabetes and associated risk factors among adults aged 50 years and above in Okwuato community, Aboh Mbaise, Imo State, Nigeria. The findings revealed that although more than half of the respondents had normal fasting blood glucose levels, a substantial proportion were either prediabetic or diabetic. The prevalence of prediabetes and diabetes observed in this study indicates that impaired glucose regulation is an important public health concern among older adults within the study population.

The study further identified several lifestyle and health-related factors, including hypertension, physical inactivity, smoking, alcohol consumption, family history of diabetes, and inadequate sleep duration, as common among respondents with abnormal blood glucose levels. However, statistical analysis showed that these factors were not significantly associated with fasting blood glucose status. Despite the absence of statistically significant relationships, the clinical importance of these factors cannot be overlooked because they are recognized contributors to metabolic disorders and cardiovascular complications.

The findings highlight the growing burden of non-communicable diseases among older adults in rural communities in Nigeria and emphasize the need for early detection and preventive interventions. Community-based diabetes screening programs, regular health education, promotion of healthy dietary practices, increased physical activity, and routine monitoring of blood glucose levels should be strengthened among older adults. In addition, healthcare providers and public health authorities should prioritize awareness campaigns and integrated management strategies aimed at reducing the burden of diabetes and its complications. Further large-scale studies involving broader populations are recommended to better understand the determinants of diabetes among older adults in Nigeria.

Compliance with ethical standards

All ethical principles guiding research involving human participants according to the Declaration of Helsinki were strictly adhered to, including respect for persons, beneficence, non-maleficence, and justice. Standard infection prevention and safety procedures were also observed during blood sample collection and testing.

Disclosure of conflict of interest

The authors report no conflicts of interest.

References

[1] Hossain MJ, Al-Mamun M, Islam MR. Diabetes mellitus, the fastest growing global public health concern: Early detection should be focused. Health Sci Rep. 2024;7(3):e2004. doi:10.1002/hsr2.2004.

[2] Pan C, Cao B, Fang H, Liu Y, Zhang S, Luo W, et al. Global burden of diabetes mellitus 1990–2021: Epidemiological trends, geospatial disparities, and risk factor dynamics. Front Endocrinol. 2025;16:1596127. doi:10.3389/fendo.2025.1596127.

[3] Olamoyegun MA, Alare K, Afolabi SA, Aderinto N, Adeyemi T. A systematic review and meta-analysis of the prevalence and risk factors of type 2 diabetes mellitus in Nigeria. Clin Diabetes Endocrinol. 2024;10(1):43. doi:10.1186/s40842-024-00209-1.

[4] ElSayed NA, Aleppo G, Aroda VR, Bannuru RR, Brown FM, Bruemmer D, et al. Classification and diagnosis of diabetes: Standards of care in diabetes—2023. Diabetes Care. 2023;46(Suppl 1):S19-S40. doi:10.2337/dc23-S002.

[5] Mohieldein A, Baig HA, Elhabiby M, Almushawwah A, Mahfouz MS, Khirelsied AH, et al. Prediabetes in adult Saudis: A systematic review and meta-analysis of prevalence studies (2000–2024). PeerJ. 2025;13:e19778. doi:10.7717/peerj.19778.

[6] Moradpour F, Rezaei S, Piroozi B, Moradi G, Moradi Y, Piri N, et al. Prevalence of prediabetes, diabetes, diabetes awareness, treatment, and its socioeconomic inequality in west of Iran. Sci Rep. 2022;12(1):17892. doi:10.1038/s41598-022-22779-9.

[7] Lazo-Porras M, Bernabé-Ortiz A, Ruiz-Alejos A, Smeeth L, Gilman R, Checkley W, et al. Regression from prediabetes to normal glucose levels is more frequent than progression towards diabetes: The CRONICAS Cohort Study. Diabetes Res Clin Pract. 2020;107829. doi:10.1016/j.diabres.2019.107829.

[8] Alshaikhi SA, Alamri AM, Alzilai IY, Alghanimi AA, Alrufaidi AM, Alrufaidi AM, et al. Diabetes and prediabetes prevalence through a community-based screening initiative in Alqunfudah, Saudi Arabia. Future Sci OA. 2024;10(1):FSO946. doi:10.2144/fsoa-2023-0208.

[9] Grundlingh N, Zewotir TT, Roberts DJ, Manda S. Assessment of prevalence and risk factors of diabetes and pre-diabetes in South Africa. J Health Popul Nutr. 2022;41(1):7. doi:10.1186/s41043-022-00281-2.

[10] Morris A. Sex differences for fasting levels of glucose and insulin: Expanding our understanding. Nat Rev Endocrinol. 2021;17:131. doi:10.1038/s41574-021-00472-7.

[11] Parizadeh D, Rahimian N, Akbarpour S, Azizi F, Hadaegh F. Sex-specific clinical outcomes of impaired glucose status: A long follow-up from the Tehran Lipid and Glucose Study. Eur J Prev Cardiol. 2019;26:1080-1091. doi:10.1177/2047487319834396.