

Assessment on Level of Awareness and ... Abaka, H. Z. & Usman, M. (2026)

Assessment on Level of Awareness and Preventive Measures of Type 2 Diabetes among Adults in Taraba State, Nigeria

ABAKA, Hamisu Zubairu¹

E-mail address: hamisuzubairuabaka@gmail.com

Phone Number: +2348036364000

USMAN, Mohammed²

Phone Number: +2348035264060

E-mail address: usmangadafi2@gmail.com

¹Department of Physical and Health Education, Federal University Wukari, Taraba State, Nigeria

²Department of Physical and Health Education, Federal College of Education (Technical), Bichi, Kano State

Abstract

This study assessed the awareness of preventive measures of type 2 diabetes among adults in Taraba State. One research question was raised and also one hypothesis was tested. Descriptive design of survey type was used for this study. The population of this study comprised all adults in Taraba State Nigeria, with the estimated population of 297,884. Slovin's formula was used to determine the sample of 399 adults for the study. The researchers used a multistage sampling procedure to select the sample for the study. The instrument for data collection in this study was researchers' developed questionnaire. The instrument consists of one section which contained ten items. Out of 399 copies of questionnaire administered to the respondents, 363 copies of questionnaire were duly completed and returned and were used for analysis. Chi-square used to test the hypotheses at 0.05 level of significance. The finding of this study indicated that adults in Taraba State are significantly aware of the preventive measures of type 2 diabetes ($\chi^2 = 61.159$; $df = 1$; $P < 0.05$). It was recommended that it was recommended despite the high-level awareness of preventive measures of type 2 diabetes among adult in Taraba State, they should intensify their efforts towards the prevention of type 2 diabetes in order to reduce the burden of the diseases to close gap between those that are aware and those who are not aware by attending health talk organized by experts.

Keywords: Awareness, Preventive Measures, Type 2 Diabetes Adults

Introduction

Diabetes mellitus is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces (WHO, 2023). Insulin is a hormone that regulates blood glucose. In 2022, 14% of adults aged 18 years and older were living with diabetes, an increase from 7% in 1990. More than half (59%) of adults aged 30 years and over living with diabetes were not taking medication for their diabetes in 2022. In 2021, diabetes was the direct cause of 1.6 million deaths and 47% of all deaths due to diabetes occurred before the age of 70 years. Another 530 000 kidney disease deaths were caused by diabetes, and high blood glucose causes around 11% of cardiovascular deaths (American Diabetes Association, 2018). Type 2 diabetes mellitus (type 2 DM) accounts for the vast majority (90%-95%) of persons living with diabetes (ADA, 2018). Diabetes mellitus is associated with acute and chronic (vascular) complications which reduce quality of life, result in disability and lead to premature mortality. Diabetes and its complications can result in considerable financial costs to people with diabetes and their families through direct medical costs, loss of work and wages with a significant toll on economic productivity (WHO, 2016). The overall population of people with diabetes has been predicted to get as high as 570 million by 2040 (Saedi et al., 2019). According to Mayer-Davis et al., (2018), Type 2 diabetes is resulted from a combination of resistance to insulin action, as well as an inadequate compensatory insulin secretory response for the degree of insulin resistance. Mayer-Davis et al., (2018) added that Type 2 diabetes is now recognized as a major chronic public health problem throughout the world and affecting a large number of people in a wide range of ethnic and economic levels in both developed and developing countries. However, it is estimated that the developing countries will bear the brunt of this epidemic in the 21st century, with 80% of all new cases of diabetes expected to appear in the developing countries by 2025 including Nigeria. In Nigeria, similar findings have been reported where high diabetes risk was reported among adolescents in Port Harcourt (17%) (Jaja et al., 2015), Ibadan (4%) (Arigbede et al., 2017) and Osogbo (9%) (Akintayo-Usman et al., 2021). Nigeria is one of the countries in sub-Saharan Africa (SSA) that are currently groaning under a rising prevalence of diabetes mellitus (DM). A recent meta-analysis reported that approximately 5.8% (about 6 million) of adult Nigerians are living with DM (Uloko et al., 2018). This figure has been



Assessment on Level of Awareness and ... Abaka, H. Z. & Usman, M. (2026)

likened to a tip of an iceberg as it is estimated that two-thirds of diabetes cases in Nigeria are yet undiagnosed (International Diabetes Federation, 2017). More than 95% of people with diabetes have type 2 diabetes. Type 2 diabetes was formerly called non-insulin dependent, or adult onset. Until recently, this type of diabetes was seen only in adults but it is now also occurring increasingly frequently in children. Type 2 diabetes affects how the body uses sugar (glucose) for energy. It stops the body from using insulin properly, which can lead to high levels of blood sugar if not treated. Over time, type 2 diabetes can cause serious damage to the body, especially nerves and blood vessels. Type 2 diabetes is often preventable. Factors that contribute to developing type 2 diabetes include being overweight, not getting enough exercise, and genetics (Odenigbo & Inya-Osuu, 2022). Thus, considerable efforts are needed to inform adults people about diabetes to judge their risk including the severity and probability of ill effects, about the risk factors that modify their susceptibility, as well as the ease or difficulty of avoiding harm (Ardena, Paz-Pacheco, Jimeno, Lantion-Ang, Paterno, & Juban, 2020). Ibrahim and Benjamin (2023) identified high prevalence of diabetes mellitus as 16.1% (66) among patients on highly active antiretroviral therapy in Taraba State, Nigeria. Alcohol consumption, lack of physical exercise, tobacco use, family history, body mass index and hypertension are found to be contributing factors for diabetes mellitus among people. According to Adibe, Aguwa, Ukwe, Okonta, Udeogaranya, (2019), acquiring knowledge on the level of awareness among adult population about diabetes is the first step in formulating a prevention program for diabetes. Such data are extremely important to plan public-health polices with specific reference to implementation of national diabetes control programs. Additionally, there are great variations in the level of this awareness from adult population to adult population, and this needs to be explored in different ethnic and social groups for designing appropriate preventive strategies. Ng, Chan, Lian, Chuah, Waseem, and Kadirvelu (2022) stated that early diagnosis is important to prevent the worst effects of type 2 diabetes. The best way to detect diabetes early is to get regular check-ups and blood tests with a healthcare provider. The prevention of diabetes is important because it is costly both in human and monetary matters. Awareness of risk factors is a prerequisite to prevent diabetes among general population and also in high-risk groups, such as Impaired Fasting Glucose (IFG) and Impaired Glucose Tolerance (IGT). If adult people are aware of the risk factors that develop diabetes, the rate of its occurrence can be minimized. Evidence eventually reported that adult people who perceive themselves to be at risk of a disease are more likely to engage in and comply with efforts to prevent their risk of developing diabetes (Abdo, & Mohamed, 2021). Global Burden of Disease Collaborative Network (2021) revealed that lifestyle changes are the best way to prevent or delay the onset of type 2 diabetes. However, adult people can help to prevent themselves from type 2 diabetes and its complications by, reaching and keeping a health body weight, stay physically active with at least 150 minutes of moderate exercise each week, eat a healthy diet and avoid sugar and saturated fat not smoke tobacco. It is against this background that, the study investigated the awareness of preventive measures of diabetes among adults in Taraba State, Nigeria.

Statement of the Problem

The global and national health mandate for non-communicable diseases emphasizes that Type 2 Diabetes Mellitus (T2DM) is largely preventable through lifestyle modifications, including healthy nutrition, regular physical exercise, and weight management. Ideally, adults in Taraba State should possess a high level of awareness regarding the preventive measures of type 2 diabetes. As noted by Abiodun, Olaogun, and Akinpelu (2024), adequate knowledge and self-care practices are fundamental to delaying the onset of Type 2 diabetes and preventing its chronic complications. The Federal Government of Nigeria, primarily through the Federal Ministry of Health (FMoH), is implementing several strategies to create awareness and manage the rising burden of Type 2 diabetes among adults, with a strong focus on early detection, lifestyle modification, and community engagement. The federal government also, has a collaborative initiatives and partners with the World Health Organization (WHO), the Diabetes Association of Nigeria (DAN), and private sector stakeholders to launch initiatives like the "Stop Diabetes Initiative" and "iCARE" (increasing access to diabetes care. More so, both federal and State Government, Center for Family with Health Initiative, through community and School Outreach Programs, used to create awareness and educate adults on the risk factors of type 2 diabetes. Despite the availability of preventive strategies, the prevalence of type 2 diabetes in Nigeria is on a steep upward trajectory, with current estimates suggesting that over 5.7% of the adult population is affected (Uloko et al., 2018). In Taraba State specifically, time-series modeling of hospital data from the Federal Medical Centre, Jalingo, has revealed a slightly increasing pattern of a long-term trend in diabetes infections (Usman, 2021). The researchers as health workers with more than 10 years experiences observed that many adults are suffering with Type 2 diabetes, and this may be as a result of factors such as low educational attainment and limited access to structured health education programs which is connected with the awareness on the preventive measures



Assessment on Level of Awareness and ... Abaka, H. Z. & Usman, M. (2026)

of type 2 diabetes. Hence, this study assessed the awareness of preventive measures of type 2 diabetes among adult in Taraba State. The following research questions were raised to guide this study:

Objective of the study

Do adults in Taraba State aware of the preventive measures of type 2 diabetes

Research Question

Do adults in Taraba State aware of the preventive measures of type 2 diabetes?

Hypothesis

Ho₁: Adults in Taraba State are not significantly aware of preventive measures of type 2 diabetes.

Methodology

A descriptive design of survey type was used for this study. Marilyn (2018) explained that descriptive survey attempts to establish the range and distribution of some social characteristics, such as education or training, occupation, and location, and to discover how these characteristics may be related to certain behaviour patterns or attitudes. This design is suitable for the present study because it attempts to establish to find the level of awareness of preventive measures of diabetes among adults in Taraba State, Nigeria. The population of this study comprised of all adults in Taraba State Nigeria, with the estimated population of two hundred and ninety seven thousand, eight hundred and eighty eight (297,884) (Projected population for Taraba State, 2022). Slovin's formula was used to determine the sample of 399 adults and were used as the sample for the study. The researchers used a multistage sampling procedure to select the sample for the study. According to Madow and Madow (2016), multi-stage is one in which sampling is done sequentially across two or more hierarchical levels. Njodi and Bwala (2004), stated that multistage sampling is a procedure carried out in phases and usually involving more than one sampling method. They further stated that in a very large and diverse study population, sampling may be done in two or more stages. The instrument for data collection in this study was researchers developed questionnaire. The instrument was titled as questionnaire on awareness of preventive measures of type 2 diabetes among adult (QAPMTDA), and consist of two (2) sections A & B. Section "A" contained information on the demographic characteristics of the respondents (Senatorial zone and LGA). Section "B" contained ten (10) items on the awareness of preventive measures of type 2 diabetes among adults. The questionnaire was prepared on four (4) points Likert scale and the rating score was as follows: Strongly Agreed (SA) 4 points, Agreed (A) 3 points, Disagreed (D) 2 points and Strongly Disagreed (SD) 1 point. For the purpose of analysis, 2.5 was the middle point, therefore, any respondents that score above 2.5 points was regarded as agreeing while below 2.5 was regarded as disagreeing with the items in question. The researchers used three (3) trained health educators, who served as research assistants, the research assistants helped in administering and retrieving the questionnaire at the spot. The research assistants also helped in interpreting the contents of the questionnaire to the respondents when the need arises, in a way that did not influence the opinion of the respondents. The administration and retrieval of the questionnaire was done within two weeks. Chi-square statistics was used to test the hypotheses at 0.05 level of significance.

Presentation of Results

Out of three hundred and ninety-nine (399) copies of questionnaire administered to the respondents, three hundred and sixty-three (363) copies of questionnaire were duly completed and returned and were used for analysis and presented on the table below:

Table 1: Chi-square (χ^2) summary on the awareness of preventive measures of type 2 diabetes:

Variables	Observed Frequency	Expected Frequency	Total	χ^2	df	P-value
Aware	256 (70.5%)	181.5	363	61.159	1	.001
Not aware	107 (29.5%)	181.5				

($\chi^2 = 61.159$; $df=1$; $P < 0.05$)

Table above shows that 256 (70.5%) of the respondents are aware of the preventive measures of type 2 diabetes and 107 (29.5%) of them are not aware. This indicated that majority of the adult in Taraba State are aware of the preventive measures of type 2 diabetes. Chi-square (χ^2) statistical test was used to compute data collected and the result value found is 61.159 at df 1 and the P-value is .001, which is less than 0.05 level of significant. The null hypotheses which stated that adults in

Assessment on Level of Awareness and ... Abaka, H. Z. & Usman, M. (2026)

Taraba State are not significantly aware of preventive measures of type 2 diabetes is hereby rejected. This means that adults in Taraba State are significantly aware of the preventive measures of type 2 diabetes.

Discussion of Findings

This study assessed the awareness of preventive measures of type 2 diabetes among adults in Taraba State, Nigeria. The outcomes of this study indicated that adults in Taraba State are significantly aware of preventive measures of type 2 diabetes. The finding lends credence with the finding of Omobuwa, and Alebiosu (2014) who conducted a study on the awareness of diabetes amongst undergraduates in a Nigerian University, South West Nigeria. The finding showed high awareness level of diabetes Mellitus among participants. The finding also supported that of Maiyaki, Odjimogho, Okandeji-Barry, Agofure, and Enoch, (2021) who conducted a study on the Knowledge, Attitude, and Practices Associated with Type 2 Diabetes Mellitus among Patients Attending a Tertiary Health Facility in North-East Nigeria. The finding indicated that most of the respondents demonstrated good knowledge of the preventive measures of diabetes Mellitus. [Shirin, Saleh, Ferdous, Rabiul-Haque and Liaquat \(2014\) carried out a study on the](#) Awareness regarding risk factors of type 2 diabetes among individuals attending a tertiary-care hospital in Bangladesh: a cross-sectional study. The finding revealed that respondents have average awareness regarding risk factors and prevention strategies of diabetes Mellitus. The finding of this study is contrary to the finding of Se-kowski, Grudzia, Z-Se-kowska, Pinkas, and Jankowski (2022) who investigated the public knowledge and awareness of diabetes mellitus, its risk factors, complications, and prevention methods among adults in Poland-A. the finding demonstrated insufficient public awareness of diabetes among adults in Poland.

Conclusion

Based on this finding, it was concluded that adults in Taraba State are aware of preventive measures of type 2 diabetes.

Recommendation

Despite the high-level awareness of preventive measures of type 2 diabetes among adult in Taraba State, they should intensify their efforts towards the prevention of type 2 diabetes in order to reduce the burden of the diseases to close gap between those that are aware and those who are not aware by attending health talk organized by experts.

References

- Abdo, N.M., & Mohamed, M.E. (2021). Effectiveness of health education program for type 2 diabetes mellitus patients attending zagazig university diabetes clinic, Egypt. *Journal of Egypt Public Health Association*, 85(1), 113-30.
- Adibe, M.O., Aguwa, C.N., Ukwe, C.H., Okonta, J.M., Udeogaranya, O.P. (2019). Diabetes self-care knowledge among type 2 diabetes outpatients in south eastern Nigerian. *International Journal of Drugs Dev Res* 18(1), 85-104.
- Akintayo-Usman, N.O., Okanlawon, F.A., & Usman, S.O. (2021). Prevalence of pre-diabetes and risk factors among secondary school adolescents in Osogbo Local Government Area, Osun State, Nigeria. *African Health Sciences*, 21(3), 1301–1309.
- American Diabetes Association. (2018). Classification and diagnosis of diabetes: Standards of Medical Care in Diabetes 2018. *Diabetes Care*, 41(Suppl. 1), S13–S27.
- Andes, L.J., Cheng, Y.J., Rolka, D.B., Gregg, E.W., & Imperatore, G. (2020). Prevalence of prediabetes among adolescents and young adults in the United States, 2005-2016. *JAMA Pediatric*, 174(2), e194498–e194498.
- Ardena, G.J., Paz-Pacheco, E., Jimeno, C.A., Lantion-Ang, F.L., Paterno, E., & Juban, N. (2020). Knowledge, attitudes and practices of persons with type 2 diabetes in a rural community: phase I of the community-based Diabetes Self-Management Education (DSME) Program in San Juan, Batangas, Philippines. *Diabetes Res Clin Practice*, 90(1), 16-18.
- Arigbede, O., Adeoye, I., Jarrett, O., & Yusuf, O. (2017). Prediabetes among Nigerian adolescents: A School-based study of the prevalence, risk factors and pattern of fasting blood glucose in Ibadan, Nigeria. *International Journal of Diabetes Development Ctries*, 37(4), 437–445
- Global Burden of Disease Collaborative Network, (2021). Global Burden of Disease Study 2021. Results. Institute for Health Metrics and Evaluation. Available at: <https://vizhub.healthdata.org/gbd-results/>.
- Ibrahim, D. & Benjamin, N. J. (2023). Diabetes Mellitus (DM) and Risk Factors Among HIV Patients on Highly Active Antiretroviral Therapy in Taraba State, Nigeria. *International Journal of Health and Pharmaceutical Research*, 8(4), 133-142.
- International Diabetes Federation, (2017). Recommendations For Managing Type 2 Diabetes in Primary Care. Retrieved from www.idf.org/managing-type2-diabetes. Accessed 20th May 2018.
- Jaja, T., Oduwole, A., Fetuga, B., & Abdus-Salam, I. (2015). Prevalence of prediabetes in secondary school students in Port Harcourt, Nigeria. *African Journal of Diabetes Medicine*, 23(1), 1-10.



- Assessment on Level of Awareness and ... Abaka, H. Z. & Usman, M. (2026)*
- Madow, N. & Madow, M. A. (2016). Sampling Methods in Research Methodology: A choosing Technique for research. *International Journal of Academic research in Management*, 5 (2), 18-27.
- Maiyaki, T.F., Odjimogho, S., Okandeji-Barry, O.R., Agofure, O., & Enoch, M (2021). Knowledge, Attitude, and Practices Associated with Type 2 Diabetes Mellitus among Patients Attending a Tertiary Health Facility in North-East Nigeria. *Niger J Exp Clin Bioscience*, 9(1), 151-157.
- Marilyn, Z. (2018). Descriptive Survey. Marilyn Zurmuehlin Working Papers in Art Education 1: 54-63.
- Mayer-Davis, E. J., Kahkoska, A. R., Jefferies, C., Dabelea, D., Balde, N., Gong, C. X., Aschner, P., & Craig, M. E. (2018). ISPAD Clinical Practice Consensus Guidelines 2018: Definition, epidemiology, and classification of diabetes in children and adolescents. *Pediatric Diabetes*, 19(Suppl 27), 7-19.
- Ng, S.H., Chan, K.H., Lian, Z.Y., Chuah, Y.H., Waseem, A.N. & Kadirvelu, A. (2022). Reality vs illusion: Knowledge, attitude and practice among diabetic patients. *International Journal of Collab Res Intern Med Public Health*, 14(1), 723-724.
- Njodi, A.I., & Bwala, D.W (2004). Skills & Techniques of Reporting Research Outcomes in Health Education. Loud books Publishers 5, Awolowo Street, Bodija-Ibadan, University Press.
- Odenigbo MA, Inya-Osuu J. (2022). Knowledge, attitudes and practices of people with type 2 diabetes mellitus in a tertiary health care centre, Umuahia, Nigeria. *J Diabetes Metab* 13(1), 187-189.
- Omobuwa, O. & Alebiosu, O.C. (2014). Awareness of diabetes amongst undergraduates in a Nigerian University, South West Nigeria. *Sahel Medical Journal*, 17(1), 29-33.
- [Pedro, L.F., Carminda, M., Rui, M., Ines, R., Isabel, A., Sandra, M. A., Luiz, S. \(2024\). Knowledge about type 2 diabetes: its impact for future management. *Frontier Public Health*, 8\(1\), 12-13.](#)
- Projected population for Taraba State, (2022). National Population Commission.
- Saeedi, P., Petersohn, I., Salpea, P., Malanda, B., Karuranga, S., Unwin, N., Colagiuri, S., Guariguata, L., Motala, A.A., Ogurtsova, K., Shaw, J.E., Bright, D., Williams, R. (2019). IDF Diabetes Atlas Committee. Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the International Diabetes Federation Diabetes Atlas, 9th edition. *Diabetes Res Clin Practice*, 157(1), 10-17.
- Se-kowski, K., Grudzia, Z-Sekowska, J., Pinkas, J. & Jankowski, M. (2022). Public knowledge and awareness of diabetes mellitus, its risk factors, complications, and prevention methods among adults in Poland—A. *Frontiers in Public Health*, 1-5.
- [Shirin, J. M., Saleh, F., Ferdous, A., Rabiul-Haque, M.D., & Liaquat, A. \(2014\). Awareness regarding risk factors of type 2 diabetes among individuals attending a tertiary-care hospital in Bangladesh: a cross-sectional study. *BMC Research Notes*, 1-24.](#)
- Uloko, A. E., Musa, B. M., Ramalan, M. A., Gezawa, I. D., Puepet, F. H., Uloko, A. T., & Sada, K.B. (2018). Prevalence and Risk Factors for Diabetes Mellitus in Nigeria: A Systematic Review and Meta-Analysis. *Diabetes Therapy*. Available at: <https://doi.org/10.1007/s13300-018-0441-1>.
- Uloko, A.E., Musa, B.M. & Ramalan, M.A. (2018). Prevalence and Risk Factors for Diabetes Mellitus in Nigeria: A Systematic Review and Meta-Analysis. *Diabetes Therapy*, 9(1), 1307-1316.
- Usman, M., Ahmad, K., Sohail, A., & Qaraq, M. (2021). The diabetic buddy: a diet regulator and tracking system for diabetics," *Proceedings of the 2021 International Conference on Content-Based Multimedia Indexing (CBMI)*, Lille, France, 31 (1), 1–4.
- World Health Organization (2016). Global Report on Diabetes. Retrieved from <http://www.who.int/iris/handle/10665/204871>.
- World Health Organization, (2023). Diabetes. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/diabetes>.