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Medical Research Paper

Diabetes Mellitus Awareness and Preventive Practices among Public Secondary School Teachers in Onna, Akwa Ibom State, Nigeria

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Abstract

Diabetes mellitus is an important public health challenge; the prevention of type 2 diabetes partly depends on awareness of modifiable risk factors and the adoption of healthier behaviours. Teachers are an important occupational group because their health behaviours may also influence health promotion in schools. This study assessed awareness of diabetes mellitus and self-reported preventive practices among teachers in public secondary schools in Onna Local Government Area, Akwa Ibom State, Nigeria. A descriptive cross-sectional survey was conducted using a structured questionnaire. The reported analytic sample comprised 183 teachers. Data were summarised using frequencies and percentages. Most respondents had heard of diabetes mellitus (95.1%). Awareness was also high for the relationship between obesity and diabetes (88.0%), physical inactivity and diabetes (84.7%), and healthy lifestyles and reducing diabetes risk (91.8%). For reported practices, 90.2% indicated that they avoided smoking and tobacco use, 78.1% reported regular consumption of fruits and vegetables, and 65.0% reported exercising at least three times weekly. However, 58.5% reported having had their blood glucose checked within the preceding year. Regarding contextual factors, 71.6% agreed that screening costs influenced blood glucose testing, while 82.0% agreed that availability of healthcare facilities encouraged screening. Respondents demonstrated a high awareness of diabetes mellitus and reported several favourable health behaviours. Nevertheless, blood glucose testing was less commonly reported than other behaviours, and respondents identified financial and service-access considerations as relevant to screening. School-based health promotion should therefore combine accurate education with accessible screening opportunities and practical workplace support. Because the study used a cross-sectional, self-reported questionnaire and descriptive analysis, the findings should be interpreted as reported awareness and practices rather than evidence of causal effects or statistically established associations.

Keywords: diabetes mellitus; diabetes awareness; preventive practices; secondary school teachers; Nigeria; cross-sectional study

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1. INTRODUCTION

1.1 Background of the Study

Diabetes mellitus is a group of metabolic disorders characterised by chronic hyperglycaemia arising from impaired insulin secretion, impaired insulin action, or both. Its clinical significance extends beyond elevated

blood glucose: poorly controlled diabetes is associated with cardiovascular disease, kidney failure, visual impairment, neuropathy and lower-limb complications. Global estimates indicate that 536.6 million adults aged 20–79 years were living with diabetes in 2021, and this number was projected to reach 783.2 million by 2045 (Sun et al., 2022). The World Health Organization (WHO, 2024) likewise identifies diabetes as a growing global health concern, with a particularly rapid rise in prevalence in low- and middle-income countries.

Type 2 diabetes accounts for most diabetes cases and is associated with a combination of non-modifiable influences and potentially modifiable factors, including excess body weight, unhealthy dietary patterns and physical inactivity. Evidence-based guidance emphasises healthy eating, regular physical activity, weight management and avoidance of tobacco as components of reducing or delaying type 2 diabetes risk (American Diabetes Association Professional Practice Committee, 2024; Bull et al., 2020). These measures should be understood as risk-reduction strategies; they do not imply that every form of diabetes can be prevented.

Nigeria faces a substantial diabetes burden. A systematic review and meta-analysis by Uloko et al. (2018) estimated a pooled national prevalence of 5.77%, while also documenting variation across geopolitical zones. Such estimates must be interpreted in light of differences in study periods, populations and diagnostic methods. The burden is compounded by underdiagnosis and unequal access to preventive and diagnostic services. Awareness of symptoms and risk factors may encourage people to seek appropriate care, but knowledge alone does not guarantee that individuals can adopt or sustain healthy behaviours.

Teachers are a relevant group for diabetes-related health promotion because they are working adults who may face sedentary occupational routines and competing work demands. They also interact with adolescents and can contribute to health-promoting school environments. A cross-sectional study among government school teachers in rural Haryana, India, identified gaps in knowledge of several diabetes risk factors, supporting the value of targeted teacher education (Ritu et al., 2020). However, findings from another country should be used as contextual evidence rather than assumed to represent teachers in Nigeria.

Awareness is best understood as more than having heard of a disease: it includes the ability to access, understand and use relevant health information. Nutbeam (2008) explains that health literacy includes functional, interactive and critical dimensions that shape how people engage with health information. The Health Belief Model further suggests that preventive action is influenced by perceived susceptibility, perceived severity, perceived benefits, perceived barriers and self-efficacy (Rosenstock et al., 1988). These perspectives are useful for interpreting why teachers who recognise diabetes risk may nevertheless encounter barriers to screening, physical activity or dietary change.

Despite the importance of teachers in school and community health promotion, the submitted study identifies a lack of local evidence on diabetes awareness and self-reported preventive practices among public secondary school teachers in Onna Local Government Area, Akwa Ibom State. Local data can help school administrators and health authorities identify areas where education, screening access and workplace support may be strengthened. The present study therefore assessed teachers' awareness of diabetes mellitus, described their reported preventive practices, and documented their views about selected socioeconomic and service-related influences.

1.2 Statement of the Problem

Diabetes mellitus is a growing public health concern in Nigeria, yet prevention and early detection depend not only on the availability of health information but also on individuals' ability to act on that information. Secondary school teachers are an important occupational group because their health behaviours affect their own wellbeing and may influence health promotion within schools. However, the submitted study identifies limited local evidence on their awareness and preventive practices in the Onna Local Government Area. Without context-specific information, school-based health promotion may fail to address the knowledge gaps and practical barriers most relevant to teachers. This study therefore examined reported awareness, selected preventive practices and respondents' views about socioeconomic and service-related factors relevant to diabetes prevention in public secondary schools in Onna LGA.

1.3. Objectives of the Study

1. To assess teachers' awareness of diabetes mellitus, including selected risk factors, symptoms and risk-reduction measures.
2. To describe self-reported practices relevant to reducing type 2 diabetes risk and promoting early detection among teachers.
3. To describe teachers' views on selected socioeconomic, workplace and healthcare-access factors that may influence preventive practices.

.4 Research Questions

1. What is the level of awareness of diabetes mellitus among secondary school teachers in Onna Local Government Area, Akwa Ibom State, particularly regarding its risk factors, symptoms and preventive measures?

2. What are the preventive practices adopted by secondary school teachers in Onna Local Government Area to reduce the risk of diabetes mellitus and promote early detection?

3. What are the views of secondary school teachers in Onna Local Government Area on the socioeconomic, workplace and healthcare-access factors that may influence their diabetes preventive practices?

2. LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature relevant to awareness and preventive practices concerning diabetes mellitus among secondary school teachers. It is organised into a conceptual review, a theoretical framework, an empirical review and a summary. The conceptual review discusses non-communicable diseases, diabetes mellitus, awareness, preventive practices, the relationship between awareness and practice, and strategies for strengthening prevention. The theoretical framework considers the Health Belief Model and Social Cognitive Theory. The empirical review examines relevant evidence, with particular attention to research involving school teachers and evidence from Nigeria. The chapter concludes by identifying the gap addressed by the present study.

2.1 Conceptual Review

2.1.1 Concept of Non-Communicable Diseases (NCDs)

Non-communicable diseases (NCDs) are generally long-duration conditions arising from a combination of genetic, physiological, environmental and behavioural factors. They are not transmitted directly from one person to another. The principal NCD groups include cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. NCDs are a major public-health concern because they contribute substantially to premature mortality, disability, long-term healthcare needs and household expenditure. The World Health Organization (WHO, 2025) reports that NCDs accounted for approximately 43 million deaths in 2021, representing about 75% of non-pandemic-related deaths. A large share of premature NCD deaths occurs in low- and middle-income countries.

Important modifiable behavioural risk factors include tobacco use, physical inactivity, unhealthy diets and harmful use of alcohol. These behaviours may contribute to metabolic risk factors such as overweight and obesity, raised blood pressure, abnormal blood lipids and elevated blood glucose (WHO, 2025). In many African settings, the growing burden of NCDs exists alongside continuing infectious-disease challenges, placing additional demands on health systems. Nigeria is part of this wider epidemiological pattern. A systematic review and meta-analysis by Uloko et al. (2018) documented the burden of diabetes and its associated risk factors in Nigeria, while also highlighting the limitations of the available national evidence. Within this wider NCD context, diabetes mellitus is particularly relevant to the present study because some of its major risk factors are modifiable through individual behaviour and supportive social and institutional environments.

Teachers are a relevant occupational group for health-promotion research. Their work may involve prolonged periods of standing or sitting, classroom and administrative responsibilities, and limited time for planned physical activity. Teachers also interact regularly with students and communities and may contribute to health promotion through their example and communication. These considerations make it useful to examine both teachers' personal awareness and their reported preventive practices. They do not, however, mean that teachers should automatically be regarded as a clinically high-risk group; individual risk depends on factors such as age, family history, weight, physical activity and other health characteristics.

2.1.2 Concept of Diabetes Mellitus

Diabetes mellitus is a group of metabolic disorders characterised by persistent elevation of blood glucose resulting from inadequate insulin secretion, impaired insulin action, or both. Insulin is a hormone involved in regulating blood glucose. When insulin production or action is insufficient, glucose accumulates in the bloodstream. The main forms include type 1 diabetes, type 2 diabetes and gestational diabetes. Type 1 diabetes involves autoimmune destruction of pancreatic beta cells and usually requires insulin treatment. Type 2 diabetes is commonly associated with insulin resistance and progressive impairment in insulin secretion. Gestational diabetes is first diagnosed during pregnancy. The distinction between these forms is important because their causes, prevention possibilities and management differ (American Diabetes Association Professional Practice Committee [ADA PPC], 2024; WHO, 2024).

Type 2 diabetes accounts for most diabetes cases globally and is associated with a combination of genetic, metabolic, behavioural and environmental influences. Modifiable risk factors include excess body weight, physical inactivity and unhealthy dietary patterns, although not every person with these risk factors develops diabetes and not every person with type 2 diabetes has the same risk profile. Family history, age and previous gestational diabetes may also be relevant. The WHO (2024) identifies healthy eating, regular physical activity, maintaining a healthy body weight and avoiding tobacco use as measures that can help prevent or delay type 2 diabetes.

The global burden is substantial. Sun et al. (2022), reporting estimates from the International Diabetes Federation Diabetes Atlas, estimated that 537 million adults aged 20–79 years were living with diabetes in 2021. The estimate was projected to rise to 643 million by 2030 and 783 million by 2045. These are modelled estimates, not a direct count of every person living with diabetes. In Nigeria, Uloko et al. (2018) found evidence of a significant diabetes burden and highlighted variation in estimates across studies. The review is a more appropriate source for the Nigerian context than an unsupported single prevalence range. Diabetes can lead to serious complications, including cardiovascular disease, kidney disease, nerve damage, eye disease and lower-limb complications. Early diagnosis, appropriate clinical care and sustained risk-reduction behaviours are therefore important.

2.1.3 Awareness of Diabetes Mellitus

Awareness of diabetes mellitus in this study refers to respondents' familiarity with the disease and their understanding of its nature, risk factors, signs and symptoms, possible complications and prevention. Awareness should not be treated as identical to comprehensive knowledge or health literacy. A respondent may have heard of diabetes but may not correctly identify its risk factors, recognise symptoms or know when professional assessment is required. The present study therefore considers awareness through specific questionnaire items rather than assuming that a single affirmative response demonstrates complete understanding.

Relevant areas of awareness include understanding that diabetes involves elevated blood glucose; recognising risk factors such as excess body weight, physical inactivity and unhealthy dietary patterns; knowing that family history may increase risk; identifying possible symptoms; and understanding that appropriate screening and clinical assessment can support early diagnosis. Common symptoms may include increased urination, increased thirst, unexplained weight loss and fatigue, although some people with type 2 diabetes may have few or no noticeable symptoms for a period of time (WHO, 2024). Consequently, the absence of symptoms does not rule out diabetes, and awareness should include knowledge of the value of appropriate testing for people who meet screening criteria.

Health literacy provides a useful way of understanding why awareness matters. Nutbeam (2008) describes health literacy as extending beyond the ability to read health information to include the capacity to access, understand, evaluate and use information in ways that support health. Applied to teachers, this perspective suggests that the usefulness of diabetes information depends not only on whether it has been received but also on whether teachers can interpret it and apply it to decisions about diet, activity and seeking healthcare. Awareness may support prevention, but it does not by itself guarantee behaviour change.

2.1.4 Preventive Practices Against Diabetes

Preventive practices are behaviours intended to reduce the risk of developing type 2 diabetes or to identify elevated risk early on. In this study, the term mainly concerns self-reported lifestyle behaviours and selected health checks. Important practices include regular physical activity, a balanced diet, limiting excessive intake of sugary foods and drinks, maintaining a healthy body weight, avoiding tobacco and seeking appropriate preventive healthcare. The evidence-based prevention recommendations of the ADA PPC (2024) emphasise structured lifestyle intervention for adults at high risk, including healthy dietary patterns, weight reduction where appropriate and regular moderate-intensity physical activity.

Physical activity improves metabolic health and can contribute to weight management. WHO guidance recommends that adults undertake 150–300 minutes of moderate-intensity aerobic physical activity, or 75–150 minutes of vigorous-intensity activity, per week, or an equivalent combination, alongside muscle-strengthening activity (Bull et al., 2020; WHO, 2020). The recommendation concerns both duration and intensity. Therefore, a questionnaire item asking only how many days a respondent exercises cannot establish whether the respondent meets the full guideline. In interpreting this study's results, frequency of exercise should be reported as frequency and not as proof of compliance with WHO recommendations.

Healthy dietary practices include consuming a varied diet with vegetables, fruits, whole grains and other nutrient-dense foods, while limiting excess energy intake and frequent consumption of foods high in free sugars and unhealthy fats. The specific dietary choices available to individuals are shaped by income, food prices, availability, household preferences and local food environments. For teachers, work schedules and access to suitable food during the school day may also affect dietary choices. These contextual influences should be considered when discussing preventive practices rather than attributing all behaviour solely to individual motivation.

Health checks and blood glucose testing can help identify diabetes or elevated risk in appropriate individuals. However, screening is not a lifestyle behaviour that prevents diabetes from developing. It is more accurately described as an early-detection or secondary-prevention measure. The distinction matters because a study that combines diet and exercise with blood glucose checks is measuring more than one type of preventive or health-protective action. Tobacco avoidance is also relevant to broader NCD risk reduction. Overall, preventive practices are influenced by knowledge, resources, access to healthcare, social

support and the physical and organisational environment.

2.1.5 Relationship Between Awareness and Preventive Practices

A central assumption in health promotion is that people who understand a health risk may be better placed to make informed decisions about reducing it. Awareness can help individuals recognise risk factors, interpret health messages and appreciate the potential benefits of preventive action. Nevertheless, the relationship between knowledge and behaviour is not automatic. A person may understand the benefits of exercise but have limited time, safe spaces or financial resources to participate. Similarly, knowledge about healthy food may not translate into dietary change where household income or local food availability constrains choice.

Health behaviour is shaped by interacting cognitive, interpersonal and environmental influences. Glanz et al. (2015) explain that health behaviour theories consider factors such as beliefs, perceived benefits and barriers, self-efficacy, social support and the settings in which people live and work. In the school context, teachers' workload, timetable, workplace facilities, access to health information and support from colleagues or family may affect whether knowledge is translated into practice. It is therefore more accurate to describe awareness as one factor that may support preventive behaviour than to claim that awareness alone determines practice.

The present study assesses awareness and reported preventive practices among teachers in the Onna Local Government Area. Unless the analysis includes an appropriate statistical test of association, descriptive findings can show the distribution of awareness and practices but cannot establish whether respondents with higher awareness are statistically more likely to practise prevention. The interpretation of the study's findings should respect this distinction.

2.1.6 Strategies for Improving Awareness and Prevention

Strategies for improving diabetes awareness and preventive practices should operate at individual, school, community and health-system levels. At the individual level, accessible health education can explain the nature of diabetes, modifiable risk factors, symptoms, complications and the importance of seeking professional advice. Information should be understandable, culturally appropriate and practical. Health literacy principles suggest that programmes should help participants interpret and use information, rather than simply provide facts (Nutbeam, 2008).

At the school level, staff-development sessions, health talks and workplace wellness activities may provide opportunities to discuss diabetes prevention. Practical measures could include opportunities for movement during the workday, supportive arrangements for physical activity, access to healthier food choices and periodic health-promotion activities. Such initiatives should be designed in consultation with teachers and should not assume that every school has the same resources. At community level, collaboration with primary healthcare facilities may improve access to counselling, risk assessment and appropriate screening.

Media and digital platforms can extend the reach of health messages, while peer support may encourage the maintenance of healthy practices. The WHO (2024) emphasises that prevention and control require both individual action and supportive health systems and environments. In the context of this study, recommendations should be based on the specific gaps identified in the survey and should distinguish between measures that improve knowledge, measures that support lifestyle change and services that facilitate early detection.

2.2 Theoretical Framework

2.2.1 Health Belief Model (HBM)

The Health Belief Model developed from work in the 1950s by social psychologists seeking to explain why people did or did not participate in preventive health programmes. The model proposes that health-related action is influenced by people's beliefs about their susceptibility to a condition, the seriousness of the condition, the benefits of taking action and the barriers to doing so. Cues to action may prompt behaviour, while self-efficacy concerns a person's confidence in their ability to carry out the recommended action. Rosenstock et al. (1988) discussed the relationship between the Health Belief Model, social learning theory and self-efficacy, including the incorporation of self-efficacy into the model.

Application of the HBM to the Study

Perceived susceptibility: Teachers who believe that they may be at risk of developing type 2 diabetes, for example because of family history, excess body weight or physical inactivity, may be more inclined to consider preventive action. The study's awareness items may provide information about recognition of selected risk factors, but they do not necessarily measure each respondent's personal perception of susceptibility.

Perceived severity: Understanding that diabetes can lead to serious complications may influence the importance attached to prevention and early diagnosis. Awareness of complications is conceptually distinct from personal fear and should not be assumed unless it is measured.

Perceived benefits: Teachers may be more willing to adopt healthy eating, physical activity and appropriate health checks when they believe these actions can reduce risk or support early diagnosis.

Perceived barriers: Workload, limited time, cost of screening, food affordability and limited access to suitable facilities may make preventive actions difficult. These barriers are particularly relevant to the study's questions about socioeconomic and environmental influences.

Cues to action: Health talks, screening invitations, media messages, advice from health professionals and school wellness activities may prompt teachers to take action.

Self-efficacy: Teachers who feel capable of planning meals, being physically active and arranging appropriate health checks may be more likely to sustain these behaviours. The HBM is relevant because it helps explain why awareness of diabetes risk may or may not lead to preventive action. However, the present questionnaire should only be said to measure HBM constructs where specific items directly assess those constructs.

2.2.2 Social Cognitive Theory (SCT)

Social Cognitive Theory, developed by Albert Bandura, explains behaviour through reciprocal interactions among personal factors, behaviour and the environment. Bandura (1986) described this interaction as reciprocal determinism. Personal factors include knowledge, expectations and confidence; behaviour refers to actions performed by individuals; and the environment includes social relationships, institutional arrangements and available resources. The theory also highlights observational learning, reinforcement and self-efficacy.

Application of SCT to the Study

Personal factors: Teachers' knowledge and beliefs about diabetes may influence their willingness to engage in healthy behaviours. The awareness component of the study addresses some of these personal factors.

Environmental influences: School schedules, workload, food availability, access to recreational spaces, healthcare facilities and support from colleagues or family may enable or constrain preventive practices.

Behavioural factors: Dietary choices, physical activity, weight monitoring and seeking appropriate health checks are behaviours that may be shaped by personal beliefs and environmental conditions.

Observational learning and role modelling: Teachers may learn from colleagues' health practices and may also serve as role models for students. This potential influence supports the relevance of school-based health promotion, although the present survey does not directly measure students' responses to teachers' behaviour.

Self-efficacy and reinforcement: Confidence in one's ability to maintain healthy habits and the experience of positive outcomes may support continued behaviour. Supportive school policies and social encouragement may reinforce these practices.

Together, the HBM and SCT provide complementary perspectives. The HBM focuses on beliefs about risk, severity, benefits and barriers, while SCT draws attention to the interaction between individuals, behaviour and the environment. These theories help frame the study's examination of awareness, preventive practices and perceived socioeconomic or workplace influences. They are explanatory frameworks; the descriptive survey design cannot by itself establish causal effects.

2.3 Empirical Review of Related Studies

2.3.1 Studies on Diabetes Awareness among School Teachers

Ritu, Saluja, and Diksha (2020) conducted a cross-sectional study among 115 teachers from five government schools in Hisar district, Haryana, India. The researchers used a predesigned and pretested structured questionnaire and analysed responses using percentages. The study found that many respondents recognised selected risk factors: 90.4% identified lack of regular exercise, 88.7% identified a sedentary lifestyle, 79.1% identified family history, 78.3% identified fast food or soft drinks, 75.7% identified increasing age and 70.4% identified overweight. However, awareness was lower for several other factors, including low birth weight, hypertension, oily food, high cholesterol, smoking and gestational diabetes. The authors concluded that important knowledge gaps remained and recommended educational programmes to update teachers' knowledge of diabetes risk factors (Ritu et al., 2020).

This study is directly relevant because it investigated government school teachers and demonstrates that awareness may vary across individual risk factors. It also supports the need to assess more than whether respondents have simply heard about diabetes. However, its findings should not be overstated: the published abstract reports knowledge of risk factors and does not provide evidence for the detailed physical-activity, dietary-adherence and screening percentages attributed to it in some versions of the present manuscript. Those unsupported figures have therefore not been repeated here.

2.3.2 Evidence on Diabetes in Nigeria

Uloko et al. (2018) conducted a systematic review and meta-analysis of diabetes prevalence and risk factors in Nigeria. The authors reviewed studies conducted over several decades and highlighted the

need for stronger national data, given the variation in study settings and the limited availability of comprehensive nationwide surveillance. Their work provides important Nigerian context for the present study, but it was not a study of secondary school teachers and should not be presented as though it measured teachers' awareness or preventive practices.

The distinction between population-level epidemiological evidence and teacher-specific behavioural evidence is important. Nigerian prevalence estimates can establish the public-health relevance of diabetes, while teacher-focused studies are needed to describe the knowledge and behaviours of this occupational group. The present research contributes local descriptive evidence from public secondary school teachers in the Onna Local Government Area.

2.3.3 Synthesis of Empirical Literature and Research Gap

The reviewed evidence indicates that diabetes is an important public-health concern in Nigeria and that school teachers may have uneven knowledge of specific risk factors, even when they are familiar with the disease. The Haryana study by Ritu et al. (2020) identifies gaps in teachers' awareness of selected risk factors, while the Nigerian review by Uloko et al. (2018) establishes the wider national burden and limitations of the epidemiological evidence. These sources address related but different questions and should not be treated as directly comparable.

A contextual gap remains in the evidence available for secondary school teachers in the Onna Local Government Area, Akwa Ibom State. The present study addresses this gap by describing respondents' awareness of diabetes, their self-reported preventive practices and their views about socioeconomic and environmental factors that may affect prevention. Because the study uses a descriptive questionnaire, its contribution is a local profile of responses. Unless inferential analysis is reported, it cannot establish statistical associations between sociodemographic characteristics, awareness and preventive practices, nor can it demonstrate that one factor caused another.

2.4 Summary of Literature Review

This chapter has reviewed literature on non-communicable diseases and diabetes mellitus, with particular attention to awareness, preventive practices and the factors that may shape behaviour. Diabetes is a major public-health concern globally and in Nigeria, and type 2 diabetes may be prevented or delayed through appropriate lifestyle measures and supportive environments. Awareness is important but does not automatically translate into action; financial, occupational, social and service-related conditions may influence whether individuals can practise what they know.

The Health Belief Model and Social Cognitive Theory provide complementary explanations of how beliefs, perceived barriers, self-efficacy, social learning and environmental conditions may influence preventive behaviour. Empirical literature, including research among government school teachers in Haryana and a Nigerian systematic review, supports the importance of the topic while leaving a need for local evidence among teachers in Onna Local Government Area. The present study responds to this gap by examining teachers' awareness, reported preventive practices and perceived socioeconomic influences.

3. RESEARCH METHODOLOGY

3.1 Research Design

This study adopted a descriptive cross-sectional survey design. The design was considered appropriate because it enabled the researcher to obtain information from public secondary school teachers in Onna Local Government Area at a particular point in time. It provided a basis for describing respondents' awareness of diabetes mellitus, the preventive practices they reported adopting, and their views on socioeconomic conditions that may influence those practices. The design involved no manipulation of respondents' behaviours or study variables. Since information was collected at one point in time, the findings describe the situation among the respondents and should not be interpreted as proof of cause-and-effect relationships.

3.2 Area of the Study

The study was carried out in the Onna Local Government Area of Akwa Ibom State, Nigeria. The study focused on teachers in the nine public secondary schools identified by the researcher: Onna Peoples High School, Abat; Nung Oku Itina Community Secondary School, Ikot Mbonu; Community Secondary Comprehensive School, Ikot Akpan; Community Commercial Secondary School, Ikot Ebiere; Afaha Inang Secondary School, Ikot Udo; Oviong West Secondary School, Ikot Edor; Government Secondary School, Okat; Qua Iboe Church Senior Science College; and Command Secondary School, Afaha. The selection of this area was informed by the researcher's interest in examining diabetes awareness and preventive practices among teachers in a defined local setting where context-specific information was considered useful for health education and prevention planning.

3.3 Population of the Study

The target population comprised teachers employed in the selected public secondary schools in Onna Local Government Area. The manuscript reports that records obtained from the Local Education Authority placed the

total population at 350 teachers. This figure should be retained only if it is supported by the official staff register or population record used for the study. The researcher should ensure that the population figure refers to eligible teachers in the same nine schools included in the study, rather than a wider group of schools or staff.

3.4 Sample Size Determination

The sample size was estimated using Cochran's formula for an initial sample under a 95% confidence level and 5% margin of error, with a population proportion of 0.5 where the expected proportion was not known. The initial sample size was calculated as follows:

$n_0 = Z^2pq/e^2$

Where: $Z = 1.96$; $p = 0.5$; $q = 1 - p = 0.5$; and $e = 0.05$.

$n_0 = (1.96)^2 \times 0.5 \times 0.5 \div (0.05)^2 = 384.16$.

Because the study population was finite, the finite population correction was applied using the population of 350 reported in the manuscript:

$n = n_0 \div [1 + (n_0 - 1)/N]$

$n = 384.16 \div [1 + (384.16 - 1)/350] \approx 183$.

The minimum calculated sample size was therefore approximately 183 respondents. The manuscript further records an adjustment to approximately 201 to allow for possible non-response. However, the results chapter states that 183 questionnaires were distributed and all 183 were returned and correctly completed. For consistency, the number of questionnaires actually distributed and analysed should be reported as 183, while 201 should be described only as the planned adjusted target if that was in fact the target used before fieldwork.

3.5 Sampling Technique and Procedure

The manuscript identifies a census approach in which eligible teachers in the selected public secondary schools were intended to be covered. A census approach is suitable where the researcher seeks to invite every eligible member of a defined, manageable population rather than select a smaller subset. The nine schools included in the study are listed in Section 3.2. The researcher obtained or intended to obtain the list of eligible teachers from the respective school authorities, explained the purpose of the study, sought voluntary participation, and administered the structured questionnaire to eligible teachers.

The original account also states that 20 respondents were selected from each of the nine schools. This would amount to 180 respondents and therefore does not match the 183 questionnaires reported as distributed, nor does it describe a census of all 201 or 350 teachers. The final manuscript must state the procedure that actually occurred: either all eligible teachers were invited (census), or a defined number was selected from each school (school-based sampling). The author should insert the verified number allocated to each school and the actual selection method if the latter was used. Do not retain the phrase '20 respondents from each school' unless this is confirmed by the field records.

3.6 Instrument for Data Collection

Data were collected using a structured, self-administered questionnaire developed by the researcher following a review of literature relevant to diabetes mellitus awareness and prevention. The questionnaire was organised into four sections to correspond with the focus of the study:

Section A elicited respondents' sociodemographic information, including sex, age, marital status, educational qualification, teaching experience, school type/level, and previous attendance at a diabetes health education programme.

Section B assessed awareness of diabetes mellitus, including prior awareness of the disease, understanding of raised blood glucose, knowledge of selected risk factors, recognition of a symptom, and awareness of the role of medical check-ups.

Section C assessed self-reported preventive practices, including physical activity, fruit and vegetable consumption, limiting sugary foods and drinks, avoiding excessive fatty foods, weight monitoring, blood glucose checks, avoidance of tobacco, and stress management.

Section D examined respondents' views on socioeconomic and environmental issues that may influence prevention, including income, screening costs, access to health information, educational level, work-related time constraints, availability of health facilities, family income, and social support.

3.7 Validity of the Instrument

Face and content validity were addressed through review of the questionnaire by the project supervisor and two experts or lecturers in community health, as stated in the original manuscript. Their review focused on the clarity, relevance, wording, and coverage of the items in relation to the study objectives. Comments and suggested corrections were used to refine the instrument before administration. In the final report, the author should retain this description only if the review was actually conducted and should identify the reviewers by professional role rather than inventing names or credentials.

3.8 Reliability of the Instrument

The reliability of the questionnaire was assessed using the test–retest procedure, as reported by the researcher. The instrument was administered to ten

secondary school teachers in a neighbouring Local Government Area who were not included in the main study. The same questionnaire was administered to the same respondents after an interval of two weeks, and the responses were compared to assess consistency over time. The manuscript currently states that consistency was observed but does not provide a reliability coefficient. If a coefficient was calculated, the author should report the method used and the value obtained. If no coefficient was calculated, the text should not claim a quantified reliability level.

3.9 Method of Data Collection

The researcher personally administered the questionnaires with the assistance of school administrators. Before administration, the purpose of the study was explained to eligible teachers, and participation was voluntary. Respondents were given sufficient explanation to understand how to complete the questionnaire. Completed questionnaires were retrieved on the same day or within 48 hours, as described in the original manuscript. The returned questionnaires were checked for completeness before coding and analysis.

3.10 Method of Data Analysis

Data were analysed using descriptive statistics. Responses were coded, organised, and summarised as frequencies and percentages, then presented in tables according to the study objectives. Frequencies show the number of respondents selecting each response, while percentages indicate the proportion of the 183 respondents represented by each frequency. The percentage was calculated using the formula:

Percentage = (Frequency of response ÷ Total number of valid responses) × 100.

For Tables 4.1, 4.2 and 4.3, the denominator was 183 respondents. For Table 4.4, the reported agree/disagree frequencies also sum to 183 for each item. The analysis is descriptive; therefore, the results do not establish statistical associations or statistically significant effects of demographic or socioeconomic factors. Any objective or research question framed in terms of 'association' should be interpreted cautiously unless an appropriate inferential analysis is conducted using the individual-level data.

3.11 Ethical Considerations

Ethical principles were observed in the conduct of the study. The manuscript states that permission was to be obtained from the relevant departmental and school authorities before data collection. Participation was voluntary, and respondents were informed about the purpose of the research. Confidentiality and anonymity were maintained by excluding personal identifiers from the questionnaire and using the information collected for the stated research purpose. In the final version, the author should change future-tense expressions such as 'permission will be obtained' to past tense if approval and data collection have already taken place and should include the name of the approving body and approval reference only where these were genuinely obtained.

4. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Data Presentation and Analysis

A total of 183 questionnaires were reported as distributed to teachers in public secondary schools in Onna Local Government Area, Akwa Ibom State. All 183 questionnaires were returned and reported as correctly completed, giving a response rate of 100%. The results are presented according to the study objectives. Frequencies and percentages are used to describe respondents' sociodemographic characteristics, awareness of diabetes mellitus, preventive practices, and views on socioeconomic factors that may influence prevention.

Table 4.1: Socio-Demographic Characteristics of Respondents (N = 183)

Variable	Category	Frequency (f)	Percentage (%)
Sex	Male	76	41.5
	Female	107	58.5
Age	20–29 years	34	18.6
	30–39 years	64	35.0
	40–49 years	52	28.4
	50 years and above	33	18.0
Marital status	Single	46	25.1
	Married	116	63.4
	Divorced	12	6.6
	Widowed	9	4.9
Highest qualification	NCE	40	21.9
	Bachelor's degree	88	48.1
	Master's degree	43	23.5
	PhD	12	6.5

Teaching experience	Less than 5 years	35	19.1
	5–10 years	61	33.3
	11–15 years	50	27.3
	Above 15 years	37	20.3
School level	Junior secondary	38	20.8
	Senior secondary	66	36.1
	Both	79	43.1
Attended diabetes health education programme	No	124	67.8
	Yes	59	32.2

Table 4.1 describes the background characteristics of the 183 teachers who participated in the study. Female respondents constituted a slightly larger proportion (58.5%) than male respondents (41.5%). This indicates that women were more represented in the study sample, although both sexes were included. The largest age group was 30–39 years (35.0%), followed by those aged 40–49 years (28.4%). Taken together, the age distribution shows that most respondents were within the 30–49-year age range, a period in which work, family and other responsibilities may influence opportunities to maintain healthy routines and attend preventive health services.

With respect to marital status, nearly two-thirds were married (63.4%), while 25.1% were single. The educational profile indicates that almost half held a bachelor's degree (48.1%), while 21.9% held an NCE, 23.5% a master's degree and 6.5% a PhD. This suggests that the respondents generally had substantial formal educational exposure. However, formal educational attainment should not automatically be equated with comprehensive health literacy; specific health information and opportunities to apply it remain important.

Regarding teaching experience, the largest group had worked for 5–10 years (33.3%), followed by 11–15 years (27.3%). In addition, 43.1% taught at both junior and senior secondary levels, while 36.1% taught at senior secondary level only. These work characteristics provide useful context for interpreting the later findings on exercise, time constraints and health-seeking behaviour. An important finding is that 67.8% reported that they had not attended a diabetes health education programme, compared with 32.2% who had attended one. This indicates that although awareness of diabetes may be widespread, most respondents had not participated in a specific diabetes-focused health education programme. The original narrative mistakenly described 67.8% as having attended such a programme; the table shows that 67.8% answered 'No'. This correction is important because it distinguishes general awareness from participation in organised health education.

Table 4.2: Awareness of Diabetes Mellitus among Teachers (N = 183)

S/N	Awareness item	Yes, f (%)	No, f (%)
1	Heard about diabetes mellitus before?	174 (95.1)	9 (4.9)
2	Know diabetes is characterized by high blood sugar levels?	163 (89.1)	20 (10.9)
3	Know excessive sugar intake increases diabetes risk?	159 (86.9)	24 (13.1)
4	Know obesity is a risk factor for diabetes?	161 (88.0)	22 (12.0)
5	Know physical inactivity contributes to diabetes?	155 (84.7)	28 (15.3)
6	Know diabetes can be prevented through healthy lifestyles?	168 (91.8)	15 (8.2)
7	Know frequent urination is a symptom of diabetes?	148 (80.9)	35 (19.1)
8	Know regular medical check-ups help detect diabetes early?	160 (87.4)	23 (12.6)

Table 4.2 presents respondents' awareness of diabetes mellitus. The results indicate that diabetes was familiar to most of the teachers: 95.1% had heard of the condition, while 4.9% had not. Beyond general familiarity, 89.1% recognised that diabetes is characterised by high blood glucose. This is important because understanding the basic nature of the condition provides a foundation for recognising its risk factors and the need for prevention and appropriate medical care.

Awareness of selected modifiable risk factors was also relatively high. A total of 88.0% identified obesity as a risk factor, 86.9% recognised excessive sugar intake as increasing risk, and 84.7% acknowledged the contribution of physical inactivity. Furthermore, 91.8% knew that healthy lifestyle practices can help prevent diabetes. These findings suggest that many respondents were aware of the relationship between lifestyle and diabetes prevention. The pattern is broadly consistent with the rationale for health literacy interventions: people need accessible and understandable information to make informed health decisions (Nutbeam, 2008).

Nevertheless, awareness was not uniform across all items. Recognition of frequent urination as a symptom was comparatively lower, at 80.9%, meaning that 19.1% did not identify this symptom. Similarly, 87.4% knew that regular medical check-ups could help detect diabetes

early. These results point to areas where health education could be strengthened, particularly symptom recognition and the value of screening. The findings should be interpreted as responses to individual knowledge items rather than as a validated overall knowledge score, since no composite scoring procedure or cut-off for 'good' or 'poor' awareness is reported. Overall, the table supports the conclusion that general awareness was high, while specific gaps remained.

Table 4.3: Preventive Practices against Diabetes Mellitus (N = 183)

S/N	Preventive practice	Yes, f (%)	No, f (%)
1	Exercise at least three times per week?	119 (65.0)	64 (35.0)
2	Regularly consume fruits and vegetables?	143 (78.1)	40 (21.9)
3	Limit sugary drinks and snacks?	132 (72.1)	51 (27.9)
4	Avoid excessive fatty foods?	127 (69.4)	56 (30.6)
5	Monitor body weight regularly?	112 (61.2)	71 (38.8)
6	Checked blood sugar within the last year?	107 (58.5)	76 (41.5)
7	Avoid smoking and tobacco use?	165 (90.2)	18 (9.8)
8	Manage stress effectively?	128 (69.9)	55 (30.1)

Table 4.3 shows the preventive practices reported by respondents. Avoidance of smoking and tobacco use was the most frequently reported practice, with 90.2% answering 'Yes'. This is a favourable finding because avoiding tobacco is an important component of reducing broader non-communicable disease risk. A substantial proportion also reported regularly consuming fruits and vegetables (78.1%) and limiting sugary drinks and snacks (72.1%). In addition, 69.4% reported avoiding excessive fatty foods. These responses suggest that many teachers reported adopting at least some dietary behaviours that are consistent with a health-promoting lifestyle.

The proportion reporting exercise at least three times per week was 65.0%. Although this indicates that almost two-thirds reported exercising with that frequency, the remaining 35.0% did not. The questionnaire item does not specify the duration or intensity of each exercise session; therefore, the result should not be presented as evidence that respondents met the World Health Organization's recommended weekly physical activity levels. It is more accurate to state that 65.0% reported exercising at least three times per week. Weight monitoring was reported by 61.2%, showing that a sizeable minority (38.8%) did not report this practice.

The least frequently reported practice was blood glucose checking within the preceding year (58.5%); 41.5% had not checked their blood glucose during that period. This is a notable gap when considered alongside the high level of general awareness reported in Table 4.2. Awareness of diabetes and its risk factors does not necessarily translate into the use of preventive or early-detection services. Cost, access, perceived personal risk and availability of screening may influence whether people act on what they know. Stress management was reported by 69.9%, while 30.1% did not report managing stress effectively. Taken together, the findings suggest a mixed pattern: favourable self-reported behaviours were common, particularly tobacco avoidance and healthier food choices, but screening, weight monitoring and physical activity still require attention. Since the measures are self-reported, they should not be interpreted as independently verified clinical or behavioural assessments.

Table 4.4: Respondents' Views on Socioeconomic and Environmental Factors Influencing Diabetes Prevention (N = 183)

S/N	Statement	Agreed, f (%)	Disagreed, f (%)
1	Income level affects ability to maintain a healthy diet	139 (76.0)	44 (24.0)
2	Cost of medical screening influences blood sugar checks	131 (71.6)	52 (28.4)
3	Access to health information improves awareness	162 (88.5)	21 (11.5)
4	Educational level helps understanding of prevention information	156 (85.2)	27 (14.8)
5	Lack of time due to work affects exercise	136 (74.3)	47 (25.7)
6	Availability of healthcare facilities encourages screening	150 (82.0)	33 (18.0)
7	Family income influences type of food consumed	145 (79.2)	38 (20.8)
8	Support from family and friends encourages healthy lifestyle practices	159 (86.9)	24 (13.1)

Table 4.4 presents respondents' views on socioeconomic and environmental conditions that may shape diabetes prevention. Most respondents (88.5%) agreed that access to health information improves awareness. This was the highest level of agreement in the table and highlights the perceived importance of making reliable health information available to teachers. Similarly, 85.2% agreed that educational level helps people understand diabetes prevention information. These findings reinforce the need for health communication that

is accessible, clear and appropriate to the audience. Although formal education may support understanding, the findings also show why specific and practical health education remains relevant.

Social support was also considered important: 86.9% agreed that support from family and friends encourages healthy lifestyle practices. This suggests that preventive behaviour is not viewed solely as an individual responsibility; encouragement and support within the home and social environment may help people maintain healthier routines. In relation to health-service access, 82.0% agreed that the availability of healthcare facilities encourages screening, while 71.6% agreed that the cost of medical screening influences whether people check their blood glucose. These responses provide context for the relatively lower screening practice reported in Table 4.3. They suggest that information alone may be insufficient if screening services are difficult to access or unaffordable.

Economic circumstances were also prominent. A total of 76.0% agreed that income affects the ability to maintain a healthy diet, while 79.2% agreed that family income influences food choices. In addition, 74.3% agreed that work-related lack of time affects exercise. These findings indicate that respondents perceived financial and occupational conditions as relevant to everyday prevention. The results support recommendations that combine health education with practical workplace and service-level measures, such as accessible screening opportunities and realistic physical activity options for teachers. However, Table 4.4 measures respondents' agreement with statements; it does not statistically demonstrate that these factors are associated with their individual awareness or practices. The wording 'perceived socioeconomic and environmental factors' is therefore more accurate than claiming that the table has established significant determinants.

4.2 Integrated Discussion of Findings

Viewed together, the four tables provide a coherent description of diabetes awareness and reported preventive practices among the participating public secondary school teachers in Onna Local Government Area. The sociodemographic profile shows that respondents included men and women across adult age groups and with varying levels of teaching experience and educational attainment. Although most respondents had tertiary qualifications, 67.8% reported that they had not attended a diabetes-specific health education programme. This distinction is important: general educational attainment and having heard about diabetes

in public secondary schools in Onna Local Government Area. The results show that most people are familiar with the condition. Almost all respondents (95.1%) had heard of diabetes mellitus, while 89.1% knew that it is characterised by elevated blood glucose levels. In addition, 88.0% identified obesity as a risk factor, 86.9% recognised excessive sugar intake as a risk-related dietary behaviour, and 84.7% acknowledged the contribution of physical inactivity. The proportion who knew that healthy lifestyle practices can help prevent diabetes was also high (91.8%).

do not necessarily mean that an individual has received structured, focused information on diabetes prevention.

The awareness findings were generally favourable. Most respondents had heard of diabetes, recognised raised blood glucose as its defining feature, and identified obesity, excessive sugar intake and physical inactivity as relevant risk factors. However, the lower recognition of frequent urination compared with general awareness indicates that there is still room to improve knowledge of symptoms and early detection. This pattern is consistent with the view that health literacy involves more than exposure to information; people also need to understand and use health information in practical decisions (Nutbeam, 2008).

The preventive-practice findings show that awareness was accompanied by several favourable self-reported behaviours, particularly avoidance of tobacco, fruit and vegetable consumption, and limiting sugary drinks and snacks. Nevertheless, fewer respondents reported checking their blood glucose in the previous year or monitoring their weight regularly. This difference suggests that knowledge and personal lifestyle choices do not automatically remove practical barriers to screening and sustained prevention. The responses in Table 4.4 provide possible context: respondents commonly identified screening cost, availability of healthcare facilities, income, work-related time constraints and social support as relevant considerations.

The findings therefore point to a practical opportunity for school- and community-based health promotion. Diabetes education for teachers could include concise information on risk factors, symptoms and the importance of appropriate screening, while school administrators and health authorities could consider periodic, accessible screening activities and workplace approaches that support physical activity. Family and peer support may also be incorporated into health promotion messages. These implications arise from the descriptive pattern of responses and should not be overstated as proven causal effects. In particular, the present analysis does not test whether sex, age, educational qualification, teaching experience or income is statistically associated with awareness or preventive practices.

4.3 DISCUSSION OF FINDINGS

4.3.1 Awareness of Diabetes Mellitus among Teachers

The first objective of this study was to determine the level of awareness of diabetes mellitus among teachers

This pattern suggests that diabetes is a recognised health concern among the teachers surveyed and that awareness extends beyond simply having heard the disease name to knowledge of some important risk factors and preventive measures. The result is relevant in the Nigerian context, where diabetes represents an important and growing public health concern. Uloko et al. (2018), in a systematic review and meta-analysis of diabetes in Nigeria, documented the national burden and the importance of addressing risk factors and prevention. The present study does not estimate diabetes prevalence among teachers; rather, it provides local evidence about their reported awareness.

The findings may also be considered alongside the study by Ritu et al. (2020), which examined knowledge of risk factors for type 2 diabetes among government school teachers in rural Haryana, India. That study is particularly relevant because it also focused on school teachers. Differences in setting, questionnaire content and scoring mean that the two studies should not be treated as directly equivalent, but both address the importance of assessing teachers' knowledge of diabetes risk factors. In the present study, one area requiring further attention is symptom recognition: 80.9% recognised frequent urination as a symptom, leaving 19.1% who did not. Also, 12.6% did not identify regular medical check-ups as useful for early detection. Therefore, high general awareness should not be interpreted as complete or comprehensive knowledge.

An additional finding from Table 4.1 helps to interpret this result: 67.8% of respondents reported that they had not attended a diabetes health education programme. This suggests that the high level of awareness may have been acquired through other channels, such as general education, media, personal experience or informal sources; however, the study did not ask respondents to identify the source of their information, so the explanation cannot be confirmed from the data. It is therefore reasonable to recommend continued structured health education, with particular emphasis on symptoms, complications, risk assessment and the appropriate use of screening. Nutbeam (2008) explains that health literacy involves more than exposure to information; people also need the capacity to understand and apply health information in decisions affecting their health.

4.3.2 Preventive Practices against Diabetes Mellitus

The second objective was to assess the preventive practices adopted by teachers. The results show that respondents reported several positive lifestyle behaviours. Avoidance of smoking and tobacco use was the most frequently reported practice (90.2%), followed by regular consumption of fruits and vegetables (78.1%) and limiting sugary drinks and snacks (72.1%). A further 69.4% reported avoiding excessive fatty foods, while 69.9% indicated that they managed stress effectively. These results suggest that many respondents recognised and reported practising behaviours that are broadly consistent with a healthy lifestyle.

The proportion of respondents who reported exercising at least three times per week was 65.0%. This is encouraging, but the questionnaire did not record the duration or intensity of exercise sessions. Consequently, it is not possible to determine from this item whether respondents met the World Health Organization's recommended weekly physical activity level. The WHO guidelines specify activity in terms of minutes and intensity across the week, rather than frequency alone (Bull et al., 2020). Future questionnaires should therefore ask about the number of minutes spent in moderate- and vigorous-intensity activity and time spent sedentary.

Weight monitoring was reported by 61.2% of respondents, while 58.5% reported that they had checked their blood glucose within the previous year. Thus, blood glucose checking was the least frequently reported practice in the table, and 41.5% had not checked their blood glucose during that period. This is an important finding because the awareness results were generally high, yet screening behaviour was less common. It illustrates that knowing about diabetes does not automatically ensure that a person undertakes screening or consistently practises every preventive behaviour. Screening is principally relevant to risk assessment and early detection; it should not be confused with a lifestyle measure that itself prevents diabetes.

The gap in screening may be considered together with Table 4.4, where 71.6% agreed that screening costs affect blood glucose monitoring and 82.0% agreed that availability of healthcare facilities encourages screening. These are respondents' perceptions rather than measured explanations for each person's screening behaviour, but they provide useful context for planning. The findings support workplace or school-based opportunities for accessible screening, together with clear information about who should be screened and where appropriate services can be obtained. The study's self-reported responses should also be interpreted with caution because respondents may over-report socially

desirable behaviours or may not recall them accurately.

4.3.4 Socioeconomic and Environmental Factors Perceived to Influence Prevention

The third objective concerned factors associated with awareness and preventive practices. Table 4.4 indicates that respondents commonly perceived socioeconomic and environmental conditions as relevant to diabetes prevention. Access to health information received the highest agreement (88.5%), followed by family and friends' support (86.9%) and the contribution of educational level to understanding prevention information

(85.2%). In addition, 82.0% agreed that the availability of healthcare facilities encourages screening.

Economic circumstances were also prominent. More than three-quarters of respondents agreed that income affects the ability to maintain a healthy diet (76.0%) and that family income influences the type of food consumed (79.2%). A further 71.6% agreed that the cost of medical screening influences blood glucose checks. These responses suggest that respondents recognise that healthy choices and preventive healthcare are shaped not only by individual knowledge but also by the resources and services available to people. The finding on work-related time constraints is also relevant: 74.3% agreed that lack of time due to work affects exercise. This points to the potential value of workplace health promotion approaches that make physical activity practical within teachers' working routines.

The high level of agreement concerning social support (86.9%) suggests that respondents see family and friends as potential sources of encouragement for healthier routines. This is consistent with the broader health behaviour perspective that behaviour is shaped by personal, social and environmental influences, rather than knowledge alone. Nutbeam (2008) similarly emphasises the importance of people's ability to access and use health information within their social circumstances.

A methodological distinction is necessary when interpreting this table. Respondents were asked whether they agreed or disagreed with statements about possible influences. The table therefore reports their perceptions; it does not demonstrate that income, education, family support or access to facilities was statistically associated with an individual respondent's awareness or preventive practices. Since the analysis used frequencies and percentages only, the study cannot claim that these factors were statistically significant determinants or predictors. A future study wishing to establish such relationships would need to analyse respondent-level data using appropriate tests and clearly defined outcome measures.

4.3.5 Overall Interpretation of the Findings

Taken together, the findings show a generally favourable pattern of diabetes awareness and several self-reported preventive practices among the 183 participating teachers. However, the results also identify areas that merit attention: knowledge of symptoms was not universal; fewer respondents reported weight monitoring and recent blood glucose checks than reported tobacco avoidance or healthy food choices; and

use (90.2%), regularly consuming fruits and vegetables (78.1%), limiting sugary drinks and snacks (72.1%), and avoiding excessive fatty foods (69.4%).

4. About 65.0% reported exercising at least three times per week, while 61.2% reported monitoring their body weight regularly.

respondents commonly identified economic, occupational and service-access considerations as relevant to prevention. The findings therefore suggest that diabetes prevention programmes for teachers should combine practical health education with opportunities to act on that knowledge.

The study has some limitations that affect interpretation. It was conducted among teachers in public secondary schools in one Local Government Area, so the findings should not automatically be generalised to private-school teachers or all teachers in Akwa Ibom State. The questionnaire relied on self-report, and the study did not measure respondents' blood glucose, body mass index or clinical diabetes status. In addition, the descriptive analysis does not establish statistical relationships between sociodemographic characteristics and awareness or practices. These limitations do not remove the value of the findings, but they define the conclusions that can reasonably be drawn.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study assessed awareness and preventive practices related to diabetes mellitus among teachers in public secondary schools in Onna Local Government Area, Akwa Ibom State. It was guided by the need to understand teachers' knowledge of diabetes, the preventive behaviours they reported adopting, and their views on socioeconomic and environmental conditions that may influence prevention. A descriptive cross-sectional survey design was used. Data were collected using a structured questionnaire and analysed with frequencies and percentages. The results presented in the study were based on 183 respondents.
The major findings were as follows:

1. Awareness of diabetes mellitus was generally high: 95.1% had heard of the condition, 89.1% knew that it is characterised by high blood glucose, and 91.8% knew that healthy lifestyle practices can help prevent it.

2. Most respondents recognised selected risk factors, including obesity (88.0%), excessive sugar intake (86.9%) and physical inactivity (84.7%). Recognition of frequent urination as a symptom was lower, at 80.9%.

3. Several preventive practices were commonly reported. These included avoiding smoking and tobacco

5. Blood glucose checking within the previous year was reported by 58.5%; 41.5% had not checked their blood glucose during that period.

6. Respondents commonly agreed that access to health information (88.5%), family and friends' support (86.9%),

educational level (85.2%) and availability of healthcare facilities (82.0%) were relevant to prevention.

7. Many respondents also perceived economic and occupational barriers: 76.0% agreed that income affects the ability to maintain a healthy diet, 71.6% that screening cost influences blood glucose checks, and 74.3% that work-related lack of time affects exercise.

Overall, the results indicate high reported awareness and a number of favourable self-reported practices, alongside gaps in screening and other preventive behaviours. The socioeconomic results describe respondents' perceptions of possible influences and should not be interpreted as statistical proof of association.

5.2 Conclusion

Based on the findings, the study concludes that teachers who participated in the survey in public secondary schools in Onna Local Government Area generally had a high level of awareness of diabetes mellitus. Most respondents had heard of the disease and demonstrated awareness of elevated blood glucose, selected lifestyle-related risk factors and the role of healthy living in prevention. Nevertheless, awareness was not complete, particularly in relation to recognition of symptoms and the importance of early detection.

The study also concludes that respondents reported adopting several favourable preventive practices, especially avoidance of tobacco use and healthier dietary choices. However, these practices were not consistent across all areas. In particular, fewer than six in ten respondents reported checking their blood glucose within the previous year, and a considerable proportion did not report regular weight monitoring or exercise at least three times weekly. The findings therefore point to a gap between general awareness and some preventive or early-detection behaviours.

Respondents identified access to health information, education, family support, income, screening costs, availability of healthcare facilities and work-related time constraints as issues that may influence prevention. Since the study analysed these responses descriptively, it cannot establish that these factors were statistically associated with individual awareness or practices. The overall conclusion is that improving diabetes prevention among teachers requires continuing health education as well as practical support for healthy lifestyles and accessible screening services.

5.3 Implications of the Study

The findings have implications for community health practice, school administration and health promotion. For community health practitioners, the results indicate the value of continuing diabetes education that addresses not only general awareness but also symptoms, risk factors and the appropriate use of screening. For school administrators, the reported work-related time barrier suggests that staff wellness activities should be planned in ways that are compatible with teachers' schedules. For health authorities and healthcare facilities, the lower proportion reporting recent blood glucose checks and the perceived influence of screening costs and facility availability support consideration of accessible screening and referral opportunities for teachers. Teachers may also serve as useful partners in sharing accurate health information with students and families, while recognising that their role as educators does not replace professional health advice.

5.4 Recommendations

Based on the findings of the study, the following recommendations are made:

1. The Akwa Ibom State Ministry of Health, in collaboration with the Ministry of Education and relevant local health authorities, should organise periodic diabetes health education sessions for teachers. These sessions should cover risk factors, symptoms, complications, lifestyle prevention and appropriate screening.

2. School authorities should collaborate with nearby primary healthcare centres or other qualified health providers to organise periodic, voluntary blood glucose screening and referral activities for teachers.

3. Relevant health authorities and service providers should explore affordable screening arrangements and communicate clearly where teachers can obtain reliable blood glucose testing and follow-up advice.

4. School administrators should support practical workplace wellness activities, including opportunities for physical activity during appropriate breaks and health messages that encourage balanced dietary choices.

5. Teachers should be encouraged to adopt sustainable healthy eating and physical activity habits, avoid tobacco

use, monitor relevant health indicators and seek professional advice about their individual screening needs.

6. Health educators should provide clear information on diabetes symptoms and the importance of timely medical assessment, since recognition of frequent urination was lower than general awareness of the disease.

7. Family, peer and staff-welfare networks should be encouraged to support healthy lifestyle practices while avoiding stigma or blame toward people living with diabetes.

8. Future health promotion activities should be evaluated to determine whether they improve knowledge, participation in screening and sustained preventive practices.

5.5 Limitations of the Study

The findings should be interpreted in light of the following limitations:

1. The study was limited to teachers in public secondary schools in the Onna Local Government Area. The findings may therefore not be generalisable to teachers in private schools, other Local Government Areas or the wider Nigerian population.

2. Data were collected using a self-administered questionnaire. Responses may have been affected by recall error or social desirability, particularly for questions about diet, exercise and other health behaviours.

3. The study did not measure blood glucose, body mass index or other clinical indicators. It therefore assessed reported awareness and practices, not the prevalence of diabetes or respondents' clinical risk status.

4. The analysis was descriptive and based on frequencies and percentages. It did not test statistical associations between sociodemographic characteristics and awareness or preventive practices.

5. The questionnaire items reported in the results should be checked against the final administered questionnaire. Any mismatch between the appendix and the items analysed may limit the transparency and reproducibility of the study.
Despite these limitations, the study provides useful local descriptive information on diabetes awareness and reported preventive practices among the teachers who participated.

5.6 Suggestions for Further Studies

1. Similar studies should be conducted among teachers in private secondary schools and in other local government areas to provide a broader picture of diabetes awareness and preventive practices.

2. Future studies may include clinical measurements, such as blood glucose and body mass index, where they are ethically approved and appropriately supervised, to complement self-reported information.

3. Further research should examine barriers to blood glucose screening among teachers in greater depth, including cost, convenience, perceived susceptibility and access to health services.

4. Studies using a larger sample and appropriate inferential statistical methods may investigate whether awareness and preventive practices differ by age, sex, educational qualification, teaching experience or other relevant characteristics.

5. Mixed-method studies using questionnaires and interviews may provide deeper understanding of how teachers make decisions about diet, physical activity and screening.

6. Longitudinal or intervention studies may assess whether school-based health education and workplace wellness programmes produce sustained improvements in knowledge and preventive behaviour.

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