Perceptions on the Effects of Lifestyle Changes on Type 2 Diabetes Prevention among Secondary School Teachers in Egor LGA, Edo State

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Abstract

Type 2 Diabetes Mellitus (T2DM) is becoming a major threat to the health of workers especially those who are sedentary and this includes teachers. This study examined the perceived effect of lifestyle changes on type 2 diabetes prevention among teachers in Egor LGA of Edo State. The descriptive survey research design was used and the population for this study was 274 secondary school teachers, simple random sampling technique was used and 73 respondents were drawn as a sample for this study using the Yamane formular. The instrument used for this study was a self-structured questionnaire making up of two sections. The questionnaire was validated by three experts in the field of Health, Safety and Environmental Education. In order to test the internal consistency of the instrument, Cronbach alpha was used and a reliability value of 0.81 was obtained. The data collected were analyzed using frequency count and mean. From the findings, it was revealed that respondent accepted that lifestyle factors can influence type 2 diabetes prevention, respondents also accepted that dietary changes and engaging in physical activity has an effect on type 2 diabetes prevention. In line with the findings of the study, Schools should introduce structured physical activity sessions for teachers, such as weekly fitness classes, walking groups, or gym facilities, to encourage participation in regular exercise. Also, school administrators should explore strategies to reduce excessive workload on teachers, allowing them sufficient time for physical activity. This may include better time management structures or incorporating short exercise breaks into daily schedules.

Keywords: Diabetes Mellitus, Type 2 Diabetes, Lifestyle Changes, Teachers

Introduction

Type 2 diabetes mellitus (T2DM), is a rapidly escalating global health concern characterized by chronic hyperglycemia due to insulin resistance and beta-cell dysfunction. Unlike type 1 diabetes, which is an autoimmune condition resulting in the destruction of insulin-producing beta cells, type 2 diabetes develops gradually due to a combination of genetic predisposition and lifestyle factors (Bizimana, 2024). T2DM accounts for more than 90% of all diabetes cases globally, making it a major public health concern.

The primary feature of T2DM is the inability of the body's cells to respond effectively to insulin, a condition known as insulin resistance. Initially, the pancreas compensates by producing more insulin, but over time, beta-cell function declines, leading to chronic hyperglycemia (Diabetes Prevention Program Research Group, 2015). This condition is strongly associated with obesity, as excess adipose tissue contributes to metabolic dysfunction. Studies indicate that lifestyle interventions, including dietary modifications and increased physical activity, significantly reduce diabetes incidence and progression (Talmale & Phatak, 2025). Furthermore, the economic burden of diabetes is substantial, affecting both healthcare systems and individuals, reinforcing the importance of preventive strategies (Alolayan et al., 2025).

The development of type 2 diabetes is influenced by a combination of genetic, environmental, and lifestyle factors. Individuals with a family history of diabetes have a significantly higher risk of developing the condition, as genetic predisposition affects insulin production and glucose metabolism (Lovas et al., 2024). While genetic factors play a role, environmental influences such as dietary patterns and physical activity levels are key determinants of disease onset.

Obesity and sedentary behavior are major modifiable risk factors for T2DM. Excess adipose tissue, particularly visceral fat, releases pro-inflammatory cytokines that interfere with insulin signaling pathways, exacerbating insulin resistance (Ogurtsova et al., 2024). Studies have shown that individuals who engage in regular physical activity and maintain a balanced diet have a lower risk of developing diabetes. The role of nutrition is particularly critical, as high consumption of processed foods, sugary beverages, and refined carbohydrates increases the likelihood of insulin resistance and obesity (Costa et al., 2025).

The symptoms of type 2 diabetes often develop gradually, making early detection challenging. In the early stages, individuals may be asymptomatic or experience mild symptoms that are often overlooked. Common symptoms include excessive thirst (polydipsia), frequent urination (polyuria), and increased hunger (polyphagia), which arise due to the body's inability to regulate blood glucose levels effectively (Bizimana, 2024). Other symptoms include unexplained weight loss, persistent fatigue, blurred vision, slow-healing wounds, and recurrent infections, particularly in the skin and urinary tract (Costa et al., 2025). Over time, prolonged hyperglycemia can result in complications such as neuropathy, characterized by numbness or tingling in the extremities, which may lead to severe foot ulcers and amputations if left unmanaged (Ogurtsova et al., 2024).

Teachers represent a unique occupational group often exposed to chronic stress, irregular work schedules, and limited opportunities for physical activity, all of which contribute to increased vulnerability to type 2 diabetes. Studies highlight that prolonged stress elevates cortisol levels, a factor strongly linked to impaired glucose metabolism and insulin sensitivity (Bobryk et al., 2024). Coupled with sedentary behaviors associated with teaching duties, like sitting down for long hours correcting students notes; these factors position educators at a heightened risk for metabolic syndromes. The effectiveness of lifestyle changes—such as dietary adjustments, physical activity, and stress management—in reducing the risk of type 2 diabetes has been highlighted. A study by Galaviz et al. (2015) report that randomized controlled trials have shown a 58% reduction in diabetes risk among individuals with impaired glucose tolerance through interventions focused on healthy eating, physical activity, and weight loss.

Workplace wellness programs tailored to educators have emerged as a critical avenue for diabetes prevention. These initiatives provide structured opportunities for teachers to engage in physical activities, access nutritional education, and participate in peer support networks. A recent study by Cranston (2024) found that implementing digital health coaching within educational settings significantly improved adherence to exercise and dietary goals among teachers. Similarly, integrating group activities such as yoga and fitness challenges has been linked to improved glucose tolerance and cardiovascular health (Baccus, 2024).

Recent advancements highlight the potential of personalized interventions and digital health tools in enhancing the efficacy of diabetes prevention programs. For instance, integrating wearable technologies to monitor physical activity and glucose levels offers real-time feedback, empowering individuals to make informed health decisions (Schoonmade et al., 2024). The role of dietary interventions such as intermittent fasting in improving insulin sensitivity and glycemic control has gained attention as a promising strategy for diabetes prevention (Chadwick et al., 2024).

Statement of the Problem

Type 2 diabetes continues to pose a significant public health challenge, particularly in urbanizing areas where lifestyle shifts toward reduced physical activity and poor dietary choices are prevalent. The rising prevalence of type 2 diabetes in Nigeria reflects global trends, but the burden is magnified by limited awareness, insufficient healthcare resources, and cultural barriers to adopting preventive measures. Recent studies have documented a sharp increase in diabetes-related complications, including lower-limb amputations and cardiovascular disease, among urbanized populations in southern Nigeria (Ngim et al., 2023).

Egor Local Government Area, located in Edo State, Nigeria, epitomizes the intersection of such socioeconomic changes and the associated health impacts. Data from Egor indicate that dietary habits, characterized by high consumption of processed foods and sugary beverages, are prevalent among residents, including teachers (Eguagie et al., 2019). Coupled with the low prioritization of physical activity, these habits create a conducive environment for the onset of metabolic disorders. Furthermore, the healthcare system in the area is ill-equipped to provide comprehensive diabetes prevention programs, particularly those emphasizing lifestyle interventions tailored to specific professional groups like educators. it is worthy of note that the ripple effects of healthier teachers extend beyond individual health outcomes, influencing broader educational environments. Healthy educators serve as role models, inspiring students and colleagues to adopt similar habits. Furthermore, improved teacher health correlates with reduced absenteeism and enhanced productivity, underscoring the societal and economic value of investing in workplace health initiatives. This prompted the researcher to carry out this study on the effects of lifestyle changes on Type 2 diabetes prevention among teachers in Egor LGA Edo State.

Research Questions

The following research questions were raised to guide the study:

1. What are the perceived effect of dietary changes on type 2 diabetes prevention among teachers in Egor LGA of Edo State?
2. What is the perceived effect of exercise on type 2 diabetes prevention among teachers in Egor LGA of Edo State?

Methodology

This study employed the descriptive survey design. The population of this study comprised all teachers in public schools in Egor Local Government Area of Edo State with the total population of two hundred and seventy-four (274). The researchers adopted the simple random sampling technique of balloting with replacement. Numbers were assigned to all secondary school teachers in the LGA using the staff list. These numbers were written and placed in a container, the researcher shook the container and picked a number. The teacher picked was selected and the number returned back to the container. The process was repeated until the number of respondents was gotten. The sample size for the study was therefore seventy-three (73) teachers. A self-structured questionnaire with twenty-five items Likert scale instrument was used for the collection of data and it was constructed after meticulously studying the related literature of the study. In order to establish the content and face validity of the instrument for the study, the researcher presented the instrument to three experts in the

Department of Health, Safety and Environmental Education, after which their suggestions, corrections and contributions were effected in the final draft of the instrument so as to ensure that the instrument measure what it set to measure. To test the reliability, the Cronbach alpha method was used and a reliability co-efficient of 0.81 was gotten. The instrument was administered by the researcher with the aid of one research assistant and data was collected at the spot to ensure high return rate. Written informed consent was collected from the respondents before the instrument was administered to them. The descriptive statistic of mean was used to analyze the data.

Results

Research Question One: What are the perceived effect of dietary changes on type 2 diabetes prevention among teachers in Egor LGA of Edo State?

Table 1: Perceived effect of dietary changes on Type 2 Diabetes prevention

S/N	Items	SA	A	D	SD	Weighted Response	Mean Score
1	A balanced diet helps in preventing Type 2 diabetes.	27	18	11	17	201	3.5
2	Excessive carbohydrate intake increases the risk of Type 2 diabetes.	34	25	11	3	236	4.2
3	Teachers consume more processed and fast foods than healthy alternatives.	36	22	13	2	238	4.2
4	Taking too many sugary beverages can predispose one to Type 2 Diabetes.	27	31	14	1	230	4.0
5	Inadequate intake of vegetables can increase one's risk of developing Type 2 Diabetes	25	30	14	4	222	3.9

Criterion Mean: 2.50

Table one revealed dietary changes and its effect on Type 2 Diabetes. A high mean of 4.2, indicates strong agreement among respondents that consuming excessive carbohydrates contributes to a higher risk of the disease. With a mean score of 3.5, the respondents generally accepted that maintaining a balanced diet plays a crucial role in diabetes prevention.

Research Question Two: What is the perceived effect of exercise on type 2 diabetes prevention among teachers in Egor LGA of Edo State?

Table 2: Perceived effect of exercise on Type 2 Diabetes prevention

S/N	Items	SA	A	D	SD	Weighted Response	Mean Score
1	Regular physical activity reduces the risk of Type 2 diabetes.	27	33	8	5	228	4.0
2	Teachers have enough opportunities to engage in physical activities.	40	22	8	3	245	4.3
3	A lack of time due to teaching workload prevents teachers from exercising regularly.	23	32	17	1	223	3.9
4	School-based fitness programs would improve teachers' physical activity levels.	19	25	27	2	207	3.6
5	The frequency of physical activity among teachers in Egor LGA reduces their risk of developing Type 2 diabetes	33	30	6	4	238	4.2

Criterion Mean: 2.50

Table two on exercise and its effect on Type 2 Diabetes prevention revealed that respondents accepted that the frequency of physical activity among teachers in Egor LGA reduces their risk of developing type 2 diabetes with a mean score of 4.2. With a lower mean score of 3.6 respondents accept that implementing fitness programs in schools would be beneficial in promoting exercise among teachers.

Discussion of Findings

The results indicate that dietary changes play a significant role in reducing the risk of Type 2 diabetes. Respondents strongly agreed that maintaining a balanced diet helps in diabetes prevention, while excessive carbohydrate intake increases the likelihood of developing the disease. This aligns with the findings of Bizimana (2024), who emphasized that dietary modifications, particularly reducing processed carbohydrate intake, significantly lower the risk of Type 2 diabetes. Similarly, Ogurtsova et al. (2024) highlighted the importance of balanced nutrition in regulating blood sugar levels and preventing metabolic disorders. However, despite recognizing the role of healthy eating, many teachers reported frequent consumption of processed and fast foods. The agreement among respondents that nutritional education should be included in teachers' professional development programs reinforces the recommendation by Costa et al. (2025) that workplace-based dietary interventions can effectively improve health outcomes.

The impact of physical activity on diabetes prevention was explored also and the analysis showed a strong consensus that regular physical activity reduces the risk of Type 2 diabetes. This aligns with the conclusions of the Diabetes Prevention Program Research Group (2015), which demonstrated that consistent physical activity reduces diabetes risk by 58 percent over three years. However, a significant barrier to exercise among teachers was the lack of time due to workload constraints. Despite acknowledging the benefits of exercise, many respondents admitted that their teaching responsibilities limit their ability to engage in physical activities. This underscores the need for school-based fitness programs, a recommendation supported by Costa et al. (2025), who found that workplace wellness initiatives lead to increased participation in physical activity. Additionally, respondents agreed that the frequency of physical activity directly influences their risk of developing diabetes, reinforcing the critical role of an active lifestyle in disease prevention.

The findings suggest that while teachers in Egor LGA recognize the importance of dietary and exercise-related interventions for diabetes prevention, practical challenges such as busy schedules and unhealthy eating habits hinder full adherence to these preventive measures. These results are in line with Omuemu et al. (2020), who found that despite high levels of awareness, behavioral adherence to diabetes prevention strategies among Nigerian educators remains low. The study highlights the need for increased awareness programs, policy initiatives promoting workplace wellness, and structured support systems to encourage healthier lifestyles among teachers. Addressing these barriers will be essential in reducing the prevalence of Type 2 diabetes within this population.

Conclusion

Teachers perceive rightly that lifestyle changes have a lot of effect on Type 2 Diabetes prevention. Teachers in Egor LGA have the right perception that regular physical activity and adequate and balanced diet together play a crucial role in preventing Type 2 diabetes.

Recommendations

Based on the findings, the following recommendations were made;

1. Schools should introduce structured physical activity sessions for teachers, such as weekly fitness classes, walking groups, or gym facilities, to encourage participation in regular exercise.
2. School administrators should explore strategies to reduce excessive workload on teachers, allowing them sufficient time for physical activity. This may include better time management structures or incorporating short exercise breaks into daily schedules.

3. There should be regular sensitization programs within schools to educate teachers on the benefits of exercise and how to integrate physical activity into their busy schedules effectively.
4. The Ministry of Education should incorporate health and wellness policies into school regulations, mandating institutions to create opportunities for teachers to engage in physical activity.

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