

KNOWLEDGE AND SELECTED RISK FACTORS OF *DIABETES MELLITUS* AMONG ROAD TRANSPORT WORKERS IN LAGOS STATE

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Abstract

Diabetes mellitus is great concern to the global health as it contributes significantly to morbidity and mortality rate worldwide. Awareness and adequate knowledge of the risk factors of the disease is crucial to enhance early detection and proper health intervention. Therefore, the purpose of this study was to examine the knowledge and associated risk factors of diabetes mellitus among road transport workers in Lagos state. The descriptive survey research method was adopted in carrying out the study. The population of the study comprised all registered transport workers in Lagos state. Three hundred and fifty respondents were selected randomly from six motor parks in Lagos state. A validated Diabetes Mellitus Risk Factors Questionnaire with reliability index of 0.89 was used to assess knowledge and risk factors of diabetes mellitus among the selected road transport workers. The respondents were made to fill the consent form after detailed explanation of the study were provided by the researcher. The results of this study showed that majority (62%) of the road transport workers are aware of diabetes mellitus. Selected risk factors of alcohol intake, sedentary lifestyle and tobacco smoking are significantly high among the road transport workers which could predispose them to diabetes mellitus. Based on the findings of this study, there is need for appropriately designed diabetes education intervention which will promote healthy lifestyle practices among the road transport workers.

Keywords: Knowledge, Risk Factors, *Diabetes Mellitus*, Road Transport Workers

Introduction

Diabetes is a chronic non-communicable disease that affects people globally and it poses to be a major health and socio-economic problem to countries and individuals. *The International Diabetes Federation (IDF, 2021)* reported that 537 million adults between the ages of 20-79 years are living with diabetes globally. This number is predicted to rise to 643 million and 784 million by year 2030 and 2045 respectively. World Health Organization (2021) stated that diabetes was responsible for 6.7 million deaths in 2021. That is, 1 person died of diabetes every 5 seconds which is a great concern to the public health.

Diabetes is classified as type 1 (T1DM) caused by auto-immune b-cell destruction, type 2 (T2DM) caused by loss of insulin secretion and gestational diabetes (GDM) which is diagnosed in the second or third trimester of pregnancy (Addisu, 2020). *Diabetes Mellitus* (DM) is a chronic metabolic condition resulting from a defect in insulin secretion and insulin action, which is characterized by elevated blood sugar (blood glucose), leading over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves if not properly managed (WHO, 2021). Poorly managed *Diabetes Mellitus* is associated with numerous complications, including peripheral neuropathy, retinopathy, chronic renal failure, cardiovascular diseases, serious infections and general body weakness (Shah, Morieri, and Marcovina, 2018). When diabetes is not well managed, complications which threaten health and life may develop. Over time, diabetes can damage the heart, blood vessels, eyes, kidneys and nerves, and increase the risk of heart disease and stroke. Such damages can result in reduced blood flow, which when combined with nerve damage (neuropathy) in the feet, increases the chance of foot ulcers, infection and the eventual need for limb amputation. Diabetic retinopathy is an important cause of blindness and occurs as a result of long-term accumulated damage to the small blood vessels in the retina. *Diabetes mellitus* can only be controlled through early detection, medication and lifestyle changes such as non-intake of alcohol and tobacco, controlled diet, exercise and good hygiene practices (IDF, 2021).

One of the socio-economic consequences of urbanization is mass transit of people, goods and services across regions and long distances via land, air and waterways. The consequence of this creation of effective road transport systems in urban areas, with an increase in the number of people engaged in commercial/professional driving. Commercial or professional drivers as an occupational group are at increased risk of cardio-metabolic syndrome, in which diabetes mellitus is rated top (Odeyinka and Ajayi, 2017). Several epidemiological studies have provided evidence that commercial drivers (short-/and long-distance drivers) suffer more or die from diabetes mellitus. On the long run and beyond all these conventional risk factors for diabetes, various driving-related activities, such as traffic congestion, alcohol intake, drug abuse, ergonomic factors, long-distance driving, shift work, and anxiety and tension from the job of driving have also been known to trigger various neuro-endocrines and neuro-cardiological response.

According to Begic, *et al.* (2016), the risk factors of diabetes include, exposure to hyperglycemia, irregular lipid profiles, and sedentary lifestyles. Other risk factors associated with diabetes mellitus include high blood pressure, overweight, tobacco use, alcohol intake, physical inactivity, family history of diabetes, older age, higher body mass index and unhealthy food consumption (Venugopal & Iyer, 2010). Major reasons why diabetes mellitus is still prevalent among the populace are inadequate or poor knowledge about diabetes mellitus, late presentation to the hospital and lack of adherence to treatment regimen (Haastrup,

Onwuama & Adelowo, 2019). The early identification of those person who are at-risk and appropriate intervention to increase physical activity, decrease central adiposity and changes in dietary habits could to a great extent help in preventing or delay in the onset of diabetes mellitus and thus reduce the burden due to its associated complications (Nithesh-Kumar, Katkuri & Ramyacharitha, 2018). This study therefore examined the knowledge and selected risk factors of diabetes mellitus among road transport workers in Lagos State.

Research Questions

1. What is the knowledge of road transport workers on alcohol intake as a risk factor of Diabetes Mellitus in Lagos state?
2. What is the knowledge of road transport workers on sedentary lifestyle as a risk factor of Diabetes Mellitus in Lagos state?
3. What is the knowledge of road transport workers on tobacco smoking as a risk factor of Diabetes Mellitus in Lagos state?

Methodology

The study adopted the descriptive cross-sectional research design among road transport workers in Lagos state. The population comprised all road transport workers in Lagos state. The sample size was determined through Yamane sample size selection. Three hundred and fifty respondents (350) were randomly selected from six (6) motor parks in Lagos which cut across the three senatorial district in Lagos state. The road transport workers cut across the drivers, ticketters, park managers and administrative staff of the park. A self-developed and validated Diabetes Mellitus Risk Factors Questionnaire with reliability index of 0.89 was used as instrument to assess the knowledge and risk factors of diabetes mellitus among the selected road transport workers. The researcher met with the Chairmen of the Parks and explained the purpose of study to members selected. Each respondents filled the consent form after detailed explanation of the study was provided by the researcher and research assistants in both English and Yoruba Language. Respondents were also guaranteed of full privacy of information provided and participation was voluntary. The overall knowledge and selected risk factors of diabetes mellitus were determined and recorded using the descriptive and inferential statistics. The demographic characteristics of the respondents such as age and years of working experience as a transport worker were analyzed with frequency, percentages and pie chart while knowledge of risk factor factors was tested using chi-square. All statistical analyses were carried out using IBM SPSS Version 22.0. A *p*-value of < 0.05 was considered statistically significant.

Results

Table 1: Demographic Characteristics of Respondents by Age

Age (Years)	Frequency	Percentage
18 – 25	86	24.57
26 – 35	124	35.43
36 – 45	88	25.14
46 – 55	41	11.71
56 and above	11	3.15
Total	350	100

It could be deduced from the Table 1 that majority of the respondents 124 (35.43%) falls between age 26 to 35 years while the minority of the respondents 11 (3.15%) were between the age of 56 years and above. Age group of 18 to 25 were 86 (24.57%), 36 to 45 years were 88 (25.14%) while age group of 46 to 55 years were 41 (11.71%).

Figure 2: Demographic Characteristics of Respondents by Year of Working Experience

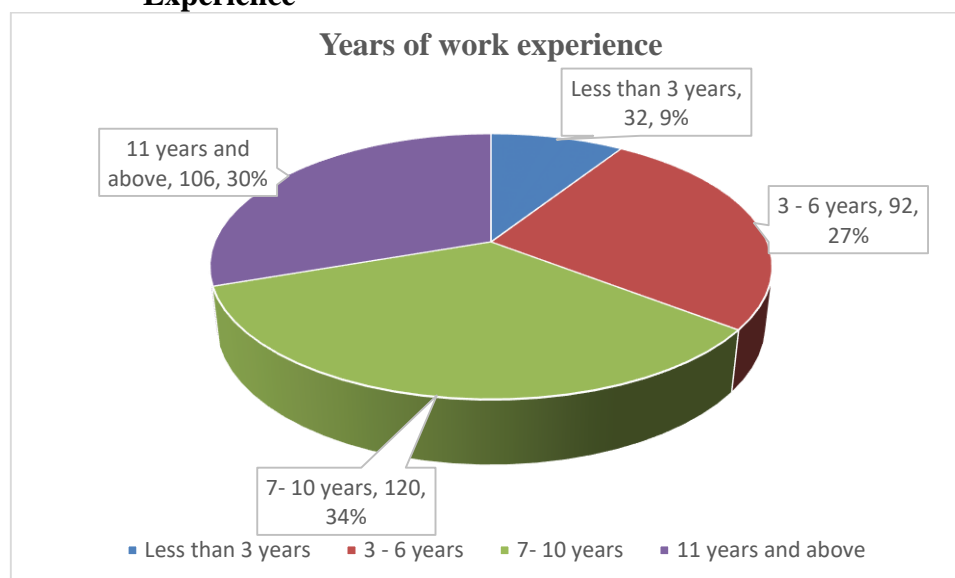


Figure 2 shows that majority of the respondents 120 (34%) had 7 to 10 years working experience as transport workers while minority of the respondents 32 (9%) had less than 3 years working experience as transport workers.

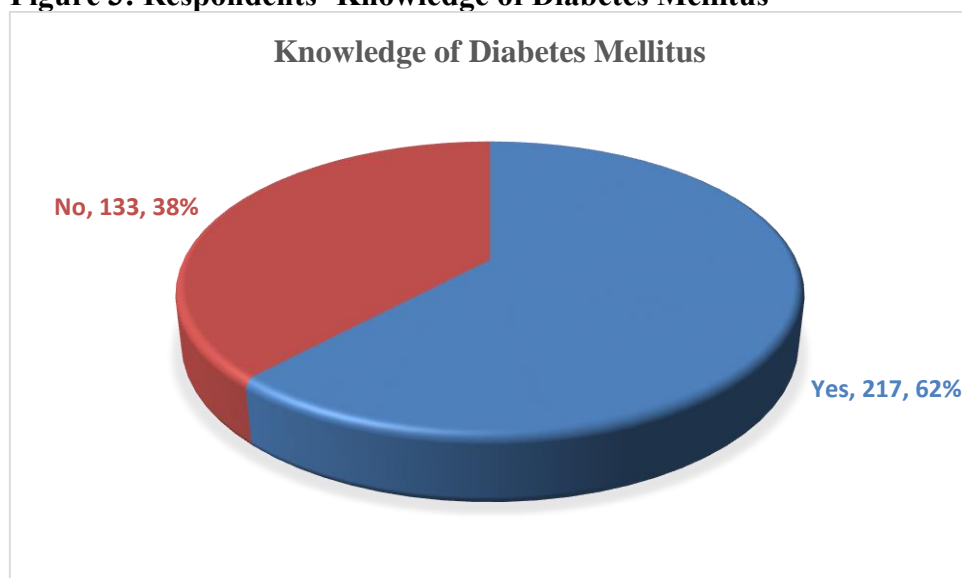
Figure 3: Respondents' Knowledge of Diabetes Mellitus

Figure 3 shows that majority of the respondents 217 (62%) have knowledge of existence of diabetes mellitus while 133 (38) of the respondents did not have knowledge of diabetes mellitus

Table 3: Practices of Risk Factors of Diabetes Mellitus

Risk Factors	Yes (%)	No (%)
Do you take alcohol	306 (87.43)	44 (12.57)
Do you smoke	271 (77.43)	79 (22.57)
Do you engage in physical activities	170 (48.57)	180 (51.43)

Table 3 reveals that majority of the respondents 306 (87.43) indulged in alcohol intake. 271 (77.43) which formed bulk of the respondents also engage in smoking while engagement in physical activities among the respondents is encouraging.

Table 4: Selected Risk Factors of Diabetes Mellitus

Characteristics	Yes	No	Total	Chi square (χ^2) (p-value)
Do you take alcohol	306	44	350	7.74 (0.021)
Do you smoke	271	79	350	3.21 (0.004)
Do you engage in physical activities	170	180	350	0.51 (0.474)

From table 4, alcohol intake among the respondents was considered to be risk factors of diabetes mellitus since $\chi^2 = 7.74$ is greater than the p -value of 0.021. As regards, tobacco smoking, the chi-square value of 3.21 is greater than the p -value

of 0.004 which shows that tobacco smoking is a major risk factor of diabetes mellitus among transport workers in Lagos state. Sedentary lifestyle in forms of less engagement is also a significant risk factor of diabetes mellitus because $\chi^2 = 0.51$ is greater than the p -value of 0.474.

Discussion of Findings

The study revealed that 87.43% of the road transport workers engage in alcohol intake which has proved to be one of the risk factors of diabetes mellitus. The findings of Akingbade (2018) who reported that alcohol intake among commercial drivers is on the high side and this could contribute to health problems such as hypertension and diabetes. Witkiewitz et al., (2017) reported that reducing alcohol consumption is beneficial in reducing the risk of Type-2 diabetes mellitus among high-risk drinkers, while Volaco and Ercolano (2018) asserted that moderate alcohol consumption reduces the risk of developing diabetes mellitus. It is potentially beneficial in metabolic control, in preventing the progression of some complications and cardiovascular events and mortality.

This study also revealed that there was a significant association between smoking habit and diabetes mellitus. The Surgeon General's Report (2014) showed that smoking is a cause of type 2 diabetes, which is also known as adult-onset diabetes. Smokers have a greater risk of developing type 2 diabetes (T2D) than do non-smokers. The risk of developing diabetes increases with the number of cigarettes smoked per day. The increased risk for T2D development associated with tobacco use is not limited only to cigarette smoking. Pearson (2000) suggests that heavy use of alternative smoking products, including smokeless tobacco (oral moist snuff, "snus"), may also impact diabetes development.

The third findings revealed that physical inactivity (sedentary lifestyle) was high among the transport workers which is one of the contributory risk factors of diabetes mellitus. Different studies showed that a physically active lifestyle is associated with a lower incidence of type-2 diabetes. For instance, Akinkungbe (1997) reported that the prevalence of diabetes is more in people who are engaged in light physical activity work. Also, Nyenwe et al., (2003) revealed that less physical activity was significantly associated with increased risk for diabetes mellitus.

Conclusion and recommendations

Diabetes mellitus is a significant public health challenge. Although, it was previously considered as a disease of rich nations, diabetes mellitus is now growing rapidly in developing nations. Diabetes constitutes a significant threat to the health of commercial taxi drivers, the transport industry and the public safety. Some of the selected risk factors for this study were alcohol intake, smoking and sedentary lifestyle which were relatively high among the transport workers. The early identification of those person who are at-risk and appropriate intervention to

increase physical activity, decrease central adiposity and changes in dietary habits could prove to a great extent in preventing or delaying the onset of diabetes mellitus and thus reduce the burden among the transport workers. Based on the findings of the study, the following were recommended:

1. There is a need to encourage and organize opportunistic screening for diabetes among this cohort in order to further reduce the burden of undiagnosed diabetes in the country.
2. There is urgent need for health education intervention on modifiable risk factors such as alcohol intake, smoking and physical inactivity which in turn might reduce the prevalence of diabetes mellitus among transport workers.

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