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Prevalence of Hyperglycemia and Associated Risk Factors among Taxi Drivers in Agblezaa-Teshie, Ghana

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Abstract:

Background: Hyperglycemia, a key risk factor for Type 2 Diabetes Mellitus (T2DM), has become a significant health concern globally, especially in urbanizing areas. Taxi drivers, with their sedentary work environment, long hours, and irregular eating habits, may be at higher risk for metabolic disorders such as hyperglycemia. This study aimed to evaluate the prevalence of hyperglycemia and identify associated risk factors among taxi drivers in Agblezaa-Teshie, Greater Accra, Ghana.

Methods: A cross-sectional study was conducted among 133 active taxi drivers in the Teshie Agblezaa area. Fasting blood glucose levels were measured, and sociodemographic, lifestyle, and occupational data were collected using structured questionnaires.

Results: The prevalence of hyperglycemia was found to be 24.1%, with older drivers (aged 50-59 years) and those working longer hours (9-12 hours daily) exhibiting higher rates. Lifestyle factors such as sedentary behavior, poor dietary habits, work-related stress, and low physical activity were strongly associated with hyperglycemia. While the majority of drivers were aware of general health risks related to hyperglycemia, their knowledge of specific symptoms and prevention strategies was limited. Significant barriers to healthcare access included financial constraints, time limitations, and lack of health insurance.

Conclusion: The study highlights a substantial burden of hyperglycemia among taxi drivers in Agblezaa-Teshie, driven by sedentary work, poor lifestyle choices, and limited healthcare access. Targeted health interventions, including regular glucose screenings, health education, and improved healthcare access, are urgently needed to address this public health concern.

Keywords: *Hyperglycemia, Taxi Drivers, Prevalence, Risk Factors, Sedentary Lifestyle, Occupational Health, Ghana, Public Health Interventions.*

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Introduction

Hyperglycemia, defined as an abnormal elevation of blood glucose levels, represents a major global public health concern due to its strong association with diabetes mellitus and other metabolic disorders. Persistent hyperglycemia is a key diagnostic feature of Type 2 Diabetes Mellitus (T2DM), which accounts for approximately 90% of diabetes cases worldwide. Chronic elevation of blood glucose levels is associated with serious complications including cardiovascular disease, neuropathy, nephropathy, and retinopathy, all of which significantly contribute to morbidity, mortality, and healthcare expenditure (Banday et al., 2020; Wilson, 2023). If left undiagnosed or poorly controlled, hyperglycemia can lead to long-term disability, reduced productivity, and increased economic burden on individuals and national health systems (Ortiz-Martínez et al., 2022; Rob et al., 2025).

Globally, the prevalence of hyperglycemia and diabetes has increased dramatically over the past few decades, particularly in low- and middle-income countries. This rise has been largely attributed to rapid urbanization, population aging, dietary transitions, and sedentary lifestyles associated with modernization (Tinajero & Malik, 2021). Urban environments often promote reduced physical activity and increased consumption of energy-dense foods high in refined carbohydrates, saturated fats, and sugars. These lifestyle changes have been identified as key drivers of metabolic disorders such as insulin resistance, obesity, and impaired glucose tolerance (Rajagopalan et al., 2024). Consequently, the burden of hyperglycemia has become increasingly prominent in developing countries where healthcare systems are already challenged by limited resources.

Ghana, like many other countries in sub-Saharan Africa, is experiencing a rapid epidemiological transition characterized by a growing prevalence of non-communicable diseases (NCDs), including diabetes. Urbanization and changing lifestyles have significantly altered dietary patterns and physical activity levels among Ghanaian populations, leading to an increased risk of metabolic disorders (Grijalva-Eternod et al., 2024). Current estimates suggest that a significant proportion of adults in Ghana have elevated blood glucose levels, many of whom remain undiagnosed due to limited routine screening and inadequate health

awareness (Gad et al., 2023). As a result, hyperglycemia is increasingly recognized as a silent epidemic within the country.

Certain occupational groups are particularly vulnerable to hyperglycemia due to the nature of their work environments and lifestyle patterns. Occupational health studies have identified professions characterized by prolonged sitting, irregular eating habits, and high levels of psychological stress as having an elevated risk of metabolic disorders (Dyakovich, 2020). Among these occupations, taxi drivers represent a population of particular concern. The profession requires long hours of sedentary work, often ranging from 8 to 15 hours daily, with limited opportunities for physical activity. Additionally, drivers frequently rely on readily available street foods that are typically high in calories, fats, and sugars, while lacking adequate nutritional value (Marani et al., 2020; Sekgala et al., 2023).

The occupational environment of taxi drivers further exposes them to multiple health risk factors. Continuous exposure to traffic congestion, unpredictable income, long working hours, and passenger interactions can lead to significant psychological stress. Chronic stress has been linked to increased cortisol levels, which may contribute to insulin resistance and elevated blood glucose levels (Gianotti et al., 2021). In addition, irregular meal timing and disrupted sleep patterns, which are common among drivers, can negatively affect glucose metabolism and increase the likelihood of developing hyperglycemia and related metabolic disorders (Kerr & Booth, 2022).

Several studies conducted in different parts of Africa have reported high prevalence rates of hyperglycemia and undiagnosed diabetes among commercial drivers. For instance, research in Nigeria, Kenya, and South Africa has shown that a substantial proportion of drivers exhibit impaired fasting glucose or other metabolic abnormalities associated with sedentary occupations (Bashir et al., 2021; Mabetwa et al., 2022). These findings highlight the need for targeted occupational health interventions aimed at reducing the burden of metabolic diseases among transport workers.

Despite the growing recognition of occupational risk factors for hyperglycemia, research focusing on taxi drivers in Ghana remains limited. Existing studies have primarily examined metabolic syndrome, hypertension, and obesity among commercial drivers in major cities such as Kumasi, but few have specifically assessed hyperglycemia prevalence and associated risk factors within local transport communities (Appiah et al., 2020). Furthermore, community-specific data are particularly scarce for areas such as the Ledzokuku Municipality in the Greater Accra Region.

The Ledzokuku Municipality, particularly the Teshie Agblezaa area, represents a densely populated urban community with a vibrant transport sector where taxi drivers play an essential role in daily mobility and economic activity. However, many drivers in this area may have limited access to preventive healthcare services, routine health screening, and health education programs. Consequently, a significant number of drivers may be unaware of their glycemic status until symptoms become severe or complications arise.

Understanding the prevalence of hyperglycemia and its associated risk factors among taxi drivers in this locality is therefore essential for informing targeted public health interventions. Generating empirical data on occupational health risks can support the development of screening programs, workplace health education initiatives, and policy strategies aimed at reducing the burden of non-

Methodology

Study Design

A descriptive cross-sectional study design was employed to determine the prevalence of hyperglycemia and its associated risk factors among taxi drivers in the Ledzokuku Municipality of the Greater Accra Region, Ghana. Cross-sectional studies are commonly used in epidemiological research to estimate the prevalence of health conditions and assess associations between outcomes and potential risk factors at a single point in time (Setia, 2016).

In this study, fasting blood glucose levels were measured alongside sociodemographic, lifestyle, and occupational characteristics using a structured questionnaire. This approach allowed for the simultaneous assessment of glycemic status and potential risk factors such as dietary habits, physical activity, smoking, alcohol consumption, and work-related stress among taxi drivers. Although this design does not establish causal relationships, it provides important baseline data for identifying high-risk groups and informing targeted public health interventions.

Study Area

The study was conducted in the Ledzokuku Municipality in the Greater Accra Region of Ghana, specifically within the Teshie Agblezaa area. Ledzokuku is a densely populated urban municipality with a vibrant commercial transport system where taxi services play a significant role in daily mobility and economic activity. The municipality is characterized by rapid urbanization, increasing vehicular traffic, and a large informal workforce, including commercial taxi drivers.

Teshie Agblezaa serves as an important transport hub with several taxi ranks and organized driver unions, which facilitated access to study participants. The area is located near key community landmarks such as the LEKMA Hospital, O'Reilly Senior High School, and several markets and residential settlements. These characteristics make the municipality suitable for studying occupational health issues among transport workers. The sedentary nature of taxi driving, combined with long working hours, irregular eating patterns, and limited opportunities for physical activity, places drivers in this setting at increased risk of metabolic disorders such as hyperglycemia.

Study Population

The study population comprised active taxi drivers operating within the Teshie Agblezaa area of the Ledzokuku Municipality in the Greater Accra Region of Ghana. Participants included both union-affiliated and independent taxi drivers who were engaged in commercial driving activities within the study area during the data collection period.

The target population consisted of drivers who had been working in the area for a considerable period and were available at

designated taxi stations and transport hubs. This occupational group was selected because taxi drivers are exposed to several lifestyle and occupational factors, such as prolonged sitting, irregular eating patterns, and work-related stress, which may increase their risk of developing hyperglycemia and other metabolic disorders.

Inclusion Criteria

Participants were eligible for the study if they met the following criteria:

- Taxi drivers aged 25 years and above**.**
- Individuals who had been actively working as taxi drivers for at least one year in the study area.
- Drivers who provided informed consent to participate in the study.
- Participants who had fasted for at least 8 hours prior to blood glucose measurement.
- who were fasting for at least 8 hours before blood glucose testing.
- **Exclusion Criteria**

Participants were excluded from the study if they met any of the following conditions:

- Taxi drivers with a previous diagnosis of diabetes mellitus and currently receiving treatment.
- Drivers who were unwilling to participate or unable to provide informed consent.
- Individuals who were acutely ill at the time of data collection.
- Participants who did not meet the fasting requirement before blood glucose testing.

Sample Size Determination

Studying the entire target population was not feasible due to time and resource constraints (Majid, 2018). Therefore, the sample size for this study was calculated using Cochran's formula (1963), which is appropriate for estimating proportions in large populations:

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where:

- n = required sample size
- Z = standard normal deviation at 95% confidence level (1.96)
- P = estimated prevalence of hyperglycemia levels (if no prior study, assumed to be 50% or 0.5)
- d = margin of error (adjusted to 8.5% or 0.085 for this study)

Substituting values:

$$n = \frac{(1.96)^2(0.5)(0.5)}{(0.085)^2}$$

$$n = \frac{3.8416\ x\ 0.25}{0.007225}$$

$$n = \frac{0.9604}{0.007225} = 132.93 \sim 133\ participants$$

Sampling Technique

A simple random sampling technique was employed to select participants from a comprehensive list of eligible taxi drivers, obtained through local transport unions and associations. Each driver on the list was assigned a unique identification number, and a random number generator was used to select participants for inclusion in the study. This approach ensured that every individual in the population had an equal and independent chance of being selected, thereby enhancing the representativeness and generalizability of the results.

The method was selected for its methodological rigor and its ability to minimize sampling bias (Jabarov, 2023). Moreover, it facilitated the systematic collection of data on key occupational and lifestyle factors such as dietary habits, physical activity, alcohol consumption, smoking, work-related stress, and extended driving hours that may influence the prevalence of hyperglycemia among taxi drivers in the study area.

Data Analysis

Data were entered into Microsoft Excel and subsequently exported to Statistical Package for the Social Sciences (SPSS) version 27 for statistical analysis. Data cleaning was performed to check for completeness, consistency, and potential entry errors prior to analysis.

Descriptive statistics were used to summarize participants' demographic characteristics, awareness levels, lifestyle risk factors, and barriers to healthcare utilization. Frequencies and percentages were computed for categorical variables, while relevant measures of central tendency were used where appropriate.

Inferential statistical analysis was conducted to examine associations between hyperglycemia and selected independent variables, including sociodemographic characteristics, lifestyle behaviors, and occupational factors. The Chi-square (χ^2) test of independence was applied to determine statistically significant relationships between categorical variables. A p-value of less than 0.05 was considered statistically significant. Results were presented in the form of tables and figures to facilitate interpretation and comparison.

Ethical Considerations

Ethical approval for this study was obtained from the Research Review Committee of the Department of Medical Laboratory Science, Faculty of Health and Allied Science at Baldwin University College, as well as the Ethics and Research Committee. Additionally, further approvals will be sought from the Ghana Health Service and the Accra Metropolitan Assembly. Permission to conduct the study was also sought from the relevant local authorities and taxi union leaders within the study area before data collection commenced.

Participation in the study was voluntary**,** and all participants provided written informed consent prior to their inclusion in the study. Participants were informed about the purpose of the research, the procedures involved, and their right to withdraw from the study at any stage without any consequences.

Results

Demographic Characteristics

Table .1 presents the demographic characteristics of the 133 taxi drivers included in the study. The results indicate that the majority of participants were within the middle-age category, with 44% aged 40–49 years, followed by 26% aged 30–39 years, while only 6% were below 29 years and 6% were 60 years and above. This distribution suggests that taxi driving in the study area is largely dominated by individuals in their economically active years, which is consistent with findings from occupational health studies among commercial drivers in urban settings.

Regarding marital status, more than half of the respondents (55%) were married, while 26% were single, and smaller proportions were divorced (10%), widowed (8%), or cohabiting (2%). The predominance of married individuals may reflect the stable socioeconomic responsibilities associated with the occupation.

In terms of educational attainment, the majority of drivers (56%) had completed Senior High School (SHS), technical, or vocational education, while 16% had Junior High School education, and 13% had tertiary education. Only 7% reported having no formal education, indicating a relatively moderate level of literacy among the drivers, which may influence their awareness and understanding of health-related information.

Religious affiliation was predominantly Christian (67%), followed by Muslim (23%), with smaller proportions identifying as traditionalists (6%) or other religious groups (5%). This pattern reflects the general religious composition commonly observed in many urban communities within the Greater Accra Region.

With respect to occupational experience, a considerable proportion of participants had been driving for 6–10 years (36%) or more than 10 years (31%), suggesting that most drivers had substantial experience in the profession. Similarly, the majority reported working 6–8 hours (39%) or 9–12 hours (38%) per day, while fewer drivers worked less than 6 hours (17%) or more than 12 hours (7%). These findings highlight the prolonged working hours characteristic of the profession, which may contribute to sedentary behavior and increased risk of metabolic disorders such as hyperglycemia.

Table 1: Demographic Distribution of the Study Population

Variable	Frequency (n)	Percentage
Age		
<29	8	6
30-39	34	26
40-49	59	44
50-59	24	18
60 and above	8	6
Marital status		
Single	34	26
Married	73	55
Divorced	13	10
Widower	11	8
Cohabiting	2	2
Education		
No formal education	9	7
Primary	12	9
JHS	21	16

SHS/TECH/VOC	74	56
Tertiary	17	13
Religion		
Christian	89	67
Muslim	30	23
Traditionalist	8	6
Other	6	5
Driving experience		
<1 years	6	5
1-5 years	38	29
6-10 years	48	36
More than 10 years	41	31
Driving hours		
<6 hours	22	17
6-8 hours	52	39
9-12 hours	50	38
More than 12 hours	9	7

Prevalence of Hyperglycaemia among taxi drivers in Agblezaa-Teshie

The prevalence of hyperglycemia among taxi drivers in Agblezaa-Teshie is summarized in Table 2. Out of the 133 taxi drivers who participated in the study, 32 individuals were classified as hyperglycemic, representing an overall prevalence of 24.1%. The majority of participants (71.4%) had normal fasting blood glucose levels (normoglycemia), while 4.5% were classified as hypoglycemic. These findings indicate that nearly one in four taxi drivers had elevated blood glucose levels, suggesting a substantial burden of undiagnosed or poorly controlled hyperglycemia within this occupational group.

Age distribution revealed a strong pattern in the occurrence of hyperglycemia. All cases of hyperglycemia were observed among drivers aged 50–59 years (75%) and 60 years and above (25%), whereas no cases were recorded among participants younger than 40 years. This pattern reflects the well-established association between increasing age and impaired glucose metabolism, which is often attributed to progressive insulin resistance, reduced pancreatic β-cell function, and long-term exposure to lifestyle risk factors (Banday et al., 2020; Lovic et al., 2020). Similar trends have been reported in studies examining metabolic disorders among commercial drivers and other sedentary occupational groups (Appiah et al., 2020; Mabetwa et al., 2022).

Regarding marital status, married drivers accounted for the majority of hyperglycemic cases (65.63%), followed by single drivers (21.88%), while smaller proportions were observed among divorced and widowed participants (6.25% each). Although marital status itself may not directly influence glucose metabolism, previous studies suggest that social and lifestyle factors associated with family responsibilities, stress levels, and dietary habits may contribute to variations in metabolic risk among married individuals (Karimi et al., 2025).

In terms of educational attainment, hyperglycemia was most prevalent among drivers who had completed Senior High School, technical, or vocational education (46.88%), followed by those with tertiary education (15.63%), and individuals with no formal education (12.50%). While education can influence health literacy and health-seeking behavior, moderate educational attainment among informal workers does not necessarily translate into improved preventive health practices, particularly when occupational constraints limit access to health services (Lamptey et al., 2022).

Religious affiliation indicated that Christians constituted the majority of hyperglycemic participants (68.75%), followed by Muslims (28.13%). This distribution largely reflects the overall religious composition of the study population and does not necessarily indicate a direct relationship between religion and hyperglycemia risk.

Occupational characteristics also appeared to influence the prevalence of hyperglycemia. Drivers with 1–5 years of driving experience accounted for the highest proportion of hyperglycemic cases (43.75%), followed by those with more than 10 years of

experience (34.38%). In addition, hyperglycemia was more common among drivers who reported working 9–12 hours daily (40.63%), followed by those working 6–8 hours per day (31.25%). These findings support previous research indicating that prolonged sedentary work, irregular eating patterns, and occupational stress are significant contributors to metabolic disorders among professional drivers (Marani et al., 2020; Sekgala et al., 2023).

The results highlight a notable burden of hyperglycemia among taxi drivers in Agblezaa-Teshie, particularly among older drivers and those exposed to long working hours. The sedentary nature of taxi driving, combined with lifestyle factors such as limited physical activity, poor dietary habits, and occupational stress, may increase the risk of impaired glucose regulation in this population. These findings emphasize the need for targeted occupational health interventions, including routine glucose screening, health education, and workplace wellness programs aimed at reducing the burden of metabolic disorders among commercial drivers (Appiah et al., 2020; Goyal & Rakhra, 2024).

Table 2: Prevalence of Hyperglycaemia

Variable	**Glucose Level Status**		
	Hypoglycemia n (%)	**Normoglycemia n (%)**	**Hyperglycemia n (%)**
Age			
<29	2 (33.33%)	6 (6.32%)	0 (0.00%)
30-39	4 (66.67%)	30 (31.58%)	0 (0.00%)
40-49	0 (0.00%)	59 (62.11%)	0 (0.00%)
50-59	0 (0.00%)	0 (0.00%)	24 (75.00%)
60 and above	0 (0.00%)	0 (0.00%)	8 (25.00%)
Marital status			
Single	1 (16.67%)	26 (27.37%)	7 (21.88%)
Married	5 (83.33%)	47 (49.47%)	21(65.63%)
Divorced	0 (0.00%)	11 (11.58%)	2 (6.25%)
Widower	0 (0.00%)	9 (9.47%)	2 (6.25%)
Cohabiting	0 (0.00%)	2 (2.11%)	0 (0.00%)
Education			
No formal education	0 (0.00%)	5 (5.26%)	4 (12.50%)
Primary	1 (16.67%)	9 (9.47%)	2 (6.25%)
JHS	0 (0.00%)	15 (15.79%)	6 (18.75%)
SHS/TECH/VOC	4 (66.67%)	55 (57.89%)	15 (46.88%)
Tertiary	1(16.67%)	11(11.58%)	5 (15.63%)
Religion			
Christian	5 (83.33%)	62 (65.26%)	22 (68.75%)
Muslim	0 (0.00%)	21 (22.11%)	9 (28.13%)
Traditionalist	0 (0.00%)	8 (8.42%)	0 (0.00%)
Other	1 (16.67%)	4 (4.21%)	1 (3.13%)

Driving experience			
<1 years	1 (16.67%)	3(3.16%)	2 (6.25%)
1-5 years	3 (50.00%)	21(22.11%)	14 (43.75%)
6-10 years	0 (0.00%)	43(45.26%)	5 (15.63%)
More than 10 years	2 (33.33%)	28 (29.47%)	11(34.38%)
Driving hours			
<6 hours	1 (16.67%)	16 (16.84%)	5 (15.63%)
6-8 hours	4 (66.67%)	38 (40.00%)	10 (31.25%)
9-12 hours	1 (16.67%)	36 (37.89%)	13 (40.63%)
More than 12 hours	0 (0.00%)	5 (5.26%)	4 (12.50%)
TOTAL	**6 (4.5%)**	**95 (71.4%)**	**32 (24.1%)**

Total Prevalence of Hyperglycaemia among taxi drivers in Agblezaa-Teshie

The observed prevalence of 24.1% highlights a substantial burden of elevated blood glucose levels among commercial taxi drivers—a group characterized by prolonged sedentary behavior, irregular eating patterns, and limited access to routine healthcare services. These occupational and lifestyle factors have been widely associated with increased risk of metabolic disorders, including impaired glucose regulation and type 2 diabetes (Marani et al., 2020; Sekgala et al., 2023).

Comparative data from studies among professional drivers in sub-Saharan Africa demonstrates similar concerns. For example, research conducted among long-distance drivers in Nigeria and Kenya reported hyperglycemia and related metabolic abnormalities in 15–28% of participants, further underscoring the vulnerability of commercial drivers to non-communicable disease risk (Bashir et al., 2021; Mabetwa et al., 2022). The relatively high prevalence in the current study suggests that taxi drivers in urban Ghana may experience comparable metabolic health challenges.

The prevalence estimate aligns with broader epidemiological trends showing increasing rates of impaired glucose metabolism in urbanizing African settings. Studies indicate that urban populations often have higher prevalence of hyperglycemia and diabetes compared with rural counterparts, largely due to lifestyle shifts toward reduced physical activity, high-energy diets, and occupational stress (Tinajero & Malik, 2021; Rajagopalan et al., 2024). The transport sector, in particular, has been identified as a high-risk occupational environment for metabolic disease owing to work-related constraints that limit opportunities for healthy food choices and physical movement (Dyakovich, 2020; Kerr & Booth, 2022).

The findings from Agblezaa-Teshie therefore contribute to a growing body of evidence that commercial driving is associated with elevated metabolic risk, and they support calls for targeted health interventions such as routine glucose screening, workplace health education, and policies aimed at improving occupational health among transport workers (Appiah et al., 2020; Goyal & Rakhra, 2024).

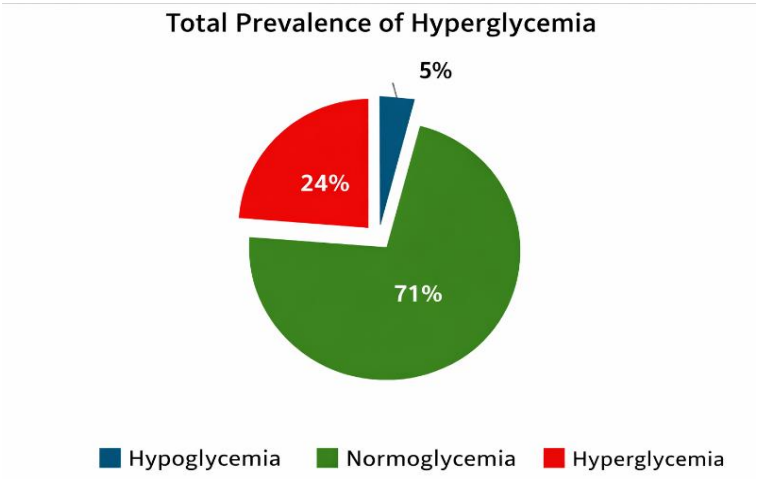

Figure 1: Total Prevalence Hyperglycemia among Taxi Drivers in Agblezaa-Teshie

Perception and Knowledge of Taxi Drivers Regarding Hyperglycemia

Table.3 summarizes the perception and knowledge of taxi drivers regarding hyperglycemia. The results indicate that 64.1% of participants demonstrated adequate knowledge and perception, while 35.9% exhibited misconceptions or lacked sufficient information about hyperglycemia. This suggests a notable gap in awareness, despite the general recognition of the condition's importance as a health issue.

A majority of drivers (73.7%) reported having heard of hyperglycemia, and correctly identified excessive sugar intake (73.7%), being overweight (73.7%), and physical inactivity (60.2%) as major risk factors. However, knowledge regarding symptoms of hyperglycemia was less consistent, with only 49.6% associating frequent urination with the condition, and 45.9% recognizing excessive thirst as a symptom. This pattern aligns with previous findings that show gaps in symptom recognition among other occupational groups, even when general awareness is high (Lule et al., 2024; Appiah et al., 2020).

In terms of preventive and management strategies, a significant proportion of drivers acknowledged that a healthy, low-sugar diet (75.9%) and regular physical activity (66.2%) are crucial in preventing and managing hyperglycemia. These findings reflect the growing recognition of lifestyle factors in the management of metabolic diseases, though actual engagement in such practices is often low among commercial drivers (Sekgala et al., 2023).

While drivers demonstrated reasonable understanding of dietary factors influencing hyperglycemia, the prevalence of sedentary behavior and poor dietary habits observed in the study suggests that knowledge does not always translate into behavior change. This gap between knowledge and practice has been widely reported in similar populations, where occupational constraints limit the ability to adopt health-promoting behaviors (Marani et al., 2020; Goyal & Rakhra, 2024).

The study's findings underline the importance of targeted health education tailored to the occupational context of taxi drivers. Such interventions should focus not only on educating drivers about symptoms and prevention strategies but also on addressing the barriers to behavior change, such as workplace conditions, time constraints, and access to healthy foods.

Table 3: Descriptive Summary of Taxi Drivers' Perception and Knowledge of Hyperglycemia

Statements on awareness and knowledge of hyperglycemia	**Agree n (%)**	**Disagree n (%)**
I have heard of the condition called hyperglycemia	98 (73.7%)	35 (26.3%)
I know hyperglycemia is a chronic disease	75 (56.4%)	58 (43.6%)
If not treated, hyperglycemia can lead to serious health problems	90 (67.7%)	43 (32.3%)
A family history of diabetes increases the risk of hyperglycemia	89 (66.9%)	44 (33.1%)
Eating too much sugar can raise the risk of hyperglycemia	98 (73.7%)	35 (26.3%)
Not exercising enough can contribute to hyperglycemia	80 (60.2%)	53 (39.8%)
Being overweight increases the chances of having hyperglycemia	98 (73.7%)	35 (26.3%)
Frequent urination can be a sign of hyperglycemia	66 (49.6%)	67 (50.4%)
Excessive thirst may be a symptom of hyperglycemia	61 (45.9%)	72 (54.1%)
Losing weight without trying can indicate hyperglycemia	91 (68.4%)	42 (31.6%)
A healthy diet low in sugar can help prevent hyperglycemia	101 (75.9%)	32 (24.1%)
Regular physical activity can help manage hyperglycemia	88 (66.2%)	45 (33.8%)
Early diagnosis and proper treatment can control hyperglycemia	73 (54.9%)	60 (45.1%)
Overall		
Response	**Frequency**	
Agree	1108 (64.1%)	
Disagree	621 (35.9%)	

Awareness and Knowledge of Hyperglycemia

Figure. 2 presents a summary of the overall responses concerning awareness and knowledge of hyperglycemia among taxi drivers. As shown, 64% of participants agreed with statements assessing their knowledge and awareness, while 36% disagreed.

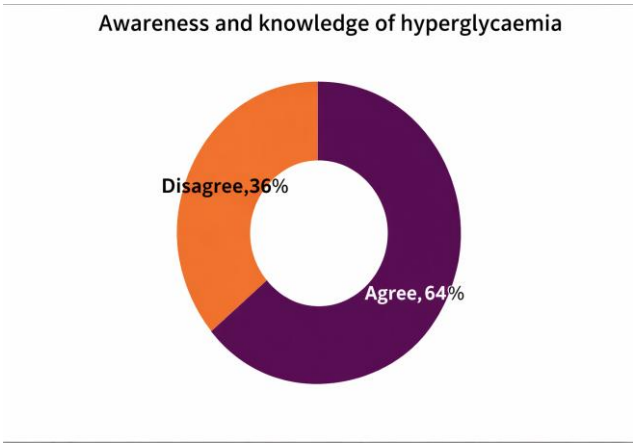

Figure 2: Awareness and Knowledge of Hyperglycemia

Chi-Square Analysis of Demographic Characteristics and Awareness and Knowledge of Hyperglycemia

A Chi-Square analysis was conducted to examine whether demographic characteristics were significantly associated with the awareness and knowledge of hyperglycemia among taxi drivers in Agblezaa-Teshie. The analysis aimed to assess how various factors such as age, marital status, education, and driving experience influenced the participants' understanding of hyperglycemia.

The analysis revealed no statistically significant associations between awareness/knowledge levels and age (χ^2 = 37.29, p = .239), marital status (χ^2 = 32.10, p = .512), education level (χ^2 = 42.48, p = .102), religion (χ^2 = 29.06, p = .218), place of residence (χ^2 = 87.53, p = .646), years of driving experience (χ^2 = 18.78, p = .764), or average daily driving hours (χ^2 = 21.84, p = .588). These findings suggest that demographic characteristics, such as marital status, education level, and years of driving experience, do not significantly influence taxi drivers' awareness and knowledge of hyperglycemia.

However, a significant association was observed between glucose level status and the awareness and knowledge of hyperglycemia (χ^2 = 43.75, p < .001). This result indicates that drivers with abnormal glucose readings, either hyperglycemia or hypoglycemia, were more likely to be aware of the condition, potentially due to prior medical advice or personal experience with the symptoms.

The lack of significant associations between most demographic variables and awareness may suggest that general knowledge about hyperglycemia is relatively consistent across different age groups, marital statuses, and education levels. However, the significant relationship between glucose level status and awareness highlights the influence of personal health experiences in shaping knowledge about the condition. Drivers with abnormal glucose levels are more likely to have sought medical attention or received health information, thus contributing to their higher levels of awareness.

These findings underscore the importance of targeted health education programs, especially for individuals with normal glucose levels who may be less informed about hyperglycemia and its risks. Moreover, personal experiences with health issues seem to be a major factor in shaping awareness, suggesting that early screening and health interventions could increase knowledge and prevention efforts among commercial drivers (Marani et al., 2020; Goyal & Rakhra, 2024). Furthermore, studies have emphasized that health literacy and previous health diagnoses are key drivers of increased awareness of chronic conditions such as diabetes (Lule et al., 2024; Appiah et al., 2020). Early screening and educational interventions may help mitigate the knowledge gaps identified in this study (Sekgala et al., 2023).

Table 4. Chi-Square Analysis of Demographic Characteristics and Awareness and Knowledge of Hyperglycemia

	X^2	*p value*
Age	37.29	.239
Marital Status	32.10	.512
Level of Education	42.48	.102
Religion	29.06	.218
Residences	87.53	.646
Glucose Level Status	43.75	**.000**
Years of Driving Experience	18.78	.764
Driving Hours	21.84	.588

Lifestyle Risk Factors Associated with Hyperglycemia

Table. 5 presents the distribution of lifestyle risk factors for hyperglycemia among taxi drivers in Agblezaa-Teshie. The data highlights several behaviors that contribute to the increased risk of hyperglycemia, with 55.8% of respondents acknowledging at least one lifestyle behavior associated with elevated blood glucose levels. These findings emphasize the need for a multi-faceted approach to prevent and manage hyperglycemia in this population.

Key Risk Factors

The most commonly reported lifestyle risk factors included:

- A significant 71.4% of drivers reported experiencing high levels of stress due to the nature of their work. This aligns with existing literature that suggests occupational stress, particularly among commercial drivers, contributes to insulin resistance and elevated blood glucose levels (Gianotti et al., 2021; Marani et al., 2020).
- 70.7% of participants reported spending their leisure time in sedentary activities, such as watching television or resting. Sedentary behavior is a well-established risk factor for the development of type 2 diabetes, as it contributes to insulin resistance and reduced glucose tolerance (Kerr & Booth, 2022; Goyal & Rakhra, 2024).
- The consumption of sugar-sweetened beverages was reported by 57.9% of participants, and 48.9% regularly consumed fried or processed snacks. These dietary patterns are associated with increased calorie intake and poor nutritional quality, both of which are significant contributors to the development of hyperglycemia and obesity (Rajagopalan et al., 2024; Lamptey et al., 2022).
- 69.9% of drivers reported insufficient daily consumption of fruits and vegetables, which are essential for maintaining healthy blood glucose levels due to their high fiber content and low glycemic index (Clemente-Suárez et al., 2023).
- Only 35.3% of participants engaged in at least 30 minutes of physical activity daily, far below the recommended level for the prevention of chronic diseases such as diabetes (Sekgala et al., 2023). The low rate of physical activity among taxi drivers is likely due to the sedentary nature of their work, which limits opportunities for exercise.
- A substantial proportion of drivers reported poor sleep quality—62.4% had less than 7 hours of sleep per night, and 63.9% experienced frequent sleep disturbances. Chronic sleep deprivation and disrupted sleep patterns have been linked to impaired glucose metabolism and insulin resistance (Kerr & Booth, 2022; Moradi et al., 2021).

Socio-Demographic and Lifestyle Correlations

In terms of socio-demographic characteristics, marital status was the only variable significantly associated with lifestyle-related risk factors for hyperglycemia ($\chi^2 = 48.41$, $p = .031$). This suggests that married drivers may experience additional stressors or dietary challenges due to family dynamics, social obligations, or financial pressures. This finding highlights the importance of considering social and family contexts when designing interventions aimed at reducing hyperglycemia risk.

The results indicate that long working hours, combined with poor dietary choices and physical inactivity, contribute significantly to the elevated risk of hyperglycemia in this occupational group. Previous studies have highlighted similar patterns in other transport workers, where sedentary work, stress, and unhealthy eating habits are major risk factors for metabolic disorders (Girotto et al., 2020; Akbar & Shi, 2024).

Table 5: Descriptive Summary of Taxi Drivers' Lifestyle Risk Factors Associated with Hyperglycemia

Statements on lifestyle risk factors associated with hyperglycemia	Agree n (%)	Disagree n (%)
Frequent consumption of sugar-sweetened beverages such as soda	77 (57.9%)	56 (42.1%)
Regular intake of fried foods and processed snacks	65 (48.9%)	68 (51.1%)
Daily fruit and vegetable intake below five servings	93 (69.9%)	40 (30.1%)
Infrequent use of healthy fats such as olive oil or avocado	68 (51.1%)	65 (48.9%)
Engagement in at least 30 minutes physical activity per day	47 (35.3%)	86 (64.7%)
Daily work involves sitting for long hours	70 (52.6%)	63 (47.4%)
Leisure time predominantly spent in sedentary activities	94 (70.7%)	39 (29.3%)
Sleep duration is typically less than seven hours per night	83 (62.4%)	50 (37.6%)
Frequent disturbances in sleep due to stress or environmental factors	85 (63.9%)	48 (36.1%)

Overwhelmed and stressed by work, finances, or family matters	95 (71.4%)	38 (28.6%)
Main coping mechanism for stress is as overeating/smoking/drinking	50 (37.6%)	83 (62.4%)
Regular use of tobacco/cigarettes	68 (51.1%)	65 (48.9%)
Alcohol consumption exceeds 2 drinks per day	52 (39.1%)	81 (60.9%)

Overall

Response	**Frequency**
Agree	947 (55.8%)
Disagree	782 (45.2%)

Lifestyle Risk Factors Associated with Hyperglycemia

Figure 4.3 presents a summary of the overall responses concerning awareness and knowledge of hyperglycemia among taxi drivers. As shown, 64% of participants agreed with statements assessing their knowledge and awareness, while 36% disagreed.

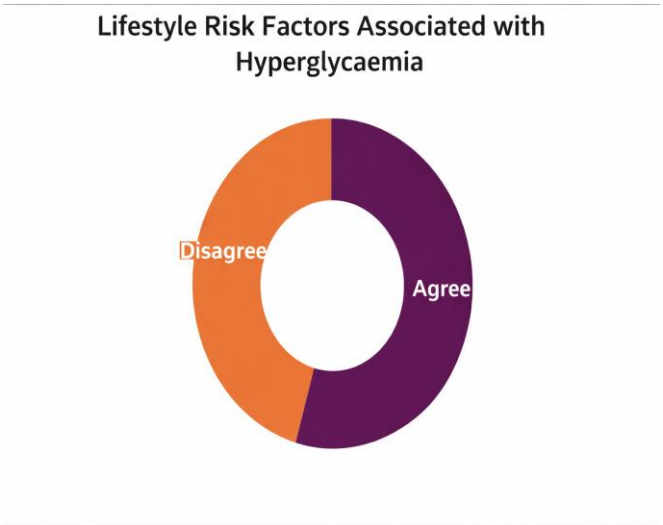

Figure 4. 3: Lifestyle Risk Factors Associated with Hyperglycemia

Chi-Square Analysis of Demographic Characteristics and Lifestyle Risk Factors Associated with Hyperglycemia

A Chi-square analysis was conducted to examine associations between selected demographic variables and lifestyle-related risk factors for hyperglycemia among taxi drivers (Table 6). The results showed that marital status was the only demographic variable significantly associated with lifestyle-related risk factors ($\chi^2 = 48.41$, $p = .031$). This finding suggests that relationship status may influence dietary habits, stress levels, and physical activity patterns, potentially due to differences in household responsibilities, eating patterns, and social support. No statistically significant associations were observed for age ($p = .184$), education level ($p = .162$), religion ($p = .068$), place of residence ($p = .321$), glucose level status ($p = .720$), years of driving experience ($p = .272$), or daily driving hours ($p = .805$).

Table 6: Chi-Square Analysis of Demographic Characteristics and Lifestyle Risk Factors Associated with Hyperglycemia

	X^2	***p value***
Age	39.00	.184
Marital Status	48.41	**.031**
Level of Education	39.79	.162
Religion	35.05	.068
Residences	77.01	.321
Glucose Level Status	12.34	.720
Years of Driving Experience	27.71	.272
Driving Hours	17.96	.805

Challenges Faced in the Utilization of Healthcare Resources Related to Hyperglycemia Prevention

Despite the availability of healthcare resources and programs aimed at preventing hyperglycemia, taxi drivers in Agblezaa-Teshie face significant barriers to effectively utilizing these services. The challenges identified in this study include limited access to healthcare facilities, financial constraints, and lack of health education, which hinder the uptake of preventive measures such as regular screening, early diagnosis, and lifestyle modification programs.

A major challenge faced by taxi drivers is the limited access to healthcare facilities, particularly in remote or underserved areas. Many drivers reported difficulty accessing routine health check-ups or screening programs due to the time constraints imposed by their demanding work schedules. With long driving hours and irregular rest periods, many drivers find it difficult to prioritize healthcare visits during working hours. This is consistent with findings from other studies, where transportation workers often report limited time and access to healthcare resources (Marani et al., 2020; Sekgala et al., 2023).

Financial limitations were also identified as a significant barrier. Health-related costs, including fees for consultations, medications, and diagnostic tests, were often cited as prohibitive for many drivers, especially those with low and unstable incomes. This is exacerbated by the lack of health insurance coverage for many in the informal sector, where the majority of taxi drivers are employed. Previous studies have shown that out-of-pocket costs are a major deterrent for seeking medical care in low-income populations (Girotto et al., 2020; Appiah et al., 2020). As a result, drivers are less likely to seek preventive care or regular screenings for hyperglycemia, which increases the risk of undiagnosed and untreated conditions.

Another significant challenge is the lack of health education and awareness regarding hyperglycemia prevention. While some taxi drivers reported having heard of hyperglycemia and diabetes, many lacked a deeper understanding of the condition's risk factors, symptoms, and long-term health consequences. This gap in knowledge is further compounded by limited exposure to health promotion programs tailored to the specific needs of taxi drivers. Drivers who are unaware of the importance of routine blood glucose monitoring or the potential consequences of untreated hyperglycemia may not take the necessary steps to manage their health, as observed in other similar studies (Lule et al., 2024; Goyal & Rakhra, 2024).

The working environment of taxi drivers also poses significant challenges to health prevention. The sedentary nature of the job, combined with irregular eating habits and high levels of stress, increases the likelihood of developing hyperglycemia and other related conditions. However, taxi drivers are often unable to access healthy food options or exercise facilities during their workday, which makes it difficult to adopt a healthy lifestyle. This has been noted in similar studies, where occupational stress and the lack of time for physical activity have been linked to increased risks of chronic diseases, including diabetes (Sekgala et al., 2023; Tinajero & Malik, 2021).

Table 7. Descriptive Summary of Challenges Faced by Taxi Drivers in Accessing Healthcare Resources for Hyperglycemia Prevention

Statements on challenges faced in accessing healthcare resources for hyperglycemia prevention	Agree n (%)	Disagree n (%)
Difficulty accessing affordable primary healthcare services	43 (32.3%)	90 (67.7%)
Long waiting times delays deter preventive care-seeking	96 (72.2%)	37 (27.8%)
Local healthcare facilities lack resources	80 (60.2%)	53 (39.8%)
High cost of blood sugar tests and diagnostic tools is a barrier	99 (74.4%)	34 (25.6%)
Inadequate health insurance coverage for preventive services	85 (63.9%)	48 (36.1%)
Out-of-pocket costs for medication and diet changes are unaffordable	80 (60.2%)	53 (39.8%)
Insufficient knowledge of prevention and early intervention	70 (52.6%)	63 (47.4%)
Inadequate communication from providers about prevention	64 (48.1%)	69 (51.9%)
Misinformation and cultural beliefs hinder	73 (54.9%)	60 (45.1%)
Stigma in the community discourages preventive care-seeking	52 (39.1%)	81 (60.9%)
Cultural or traditional dietary practices make healthy eating difficult	83 (62.4%)	50 (37.6%)
Lack of family or community support for lifestyle changes	78 (58.6%)	55 (41.4%)
Language barriers complicate understanding of prevention	58 (43.6%)	75 (56.4%)

Overall	
Response	**Frequency**
Agree	961 (55.6%)
Disagree	768 (44.4%)

The results presented in Table 7 reveal several structural, economic, informational, and socio-cultural barriers that hinder effective utilization of healthcare resources for hyperglycemia prevention. Most respondents agreed that high out-of-pocket costs for blood sugar tests (74.4%), long waiting times at healthcare facilities (72.2%), and inadequate health insurance coverage for preventive services (63.9%) were major obstacles. Additionally, a considerable proportion cited unaffordable medication and dietary costs (60.2%), under-resourced local health facilities (60.2%), and cultural dietary practices (62.4%) as significant barriers. Informational challenges were also evident, with over half of the participants pointing to misinformation and cultural beliefs (54.9%) and insufficient knowledge of early prevention (52.6%) as limiting factors. Meanwhile, social factors such as lack of family or community support (58.6%) and stigma (39.1%) were also reported. Language barriers and inadequate communication from healthcare providers were acknowledged by 43.6% and 48.1% of respondents, respectively.

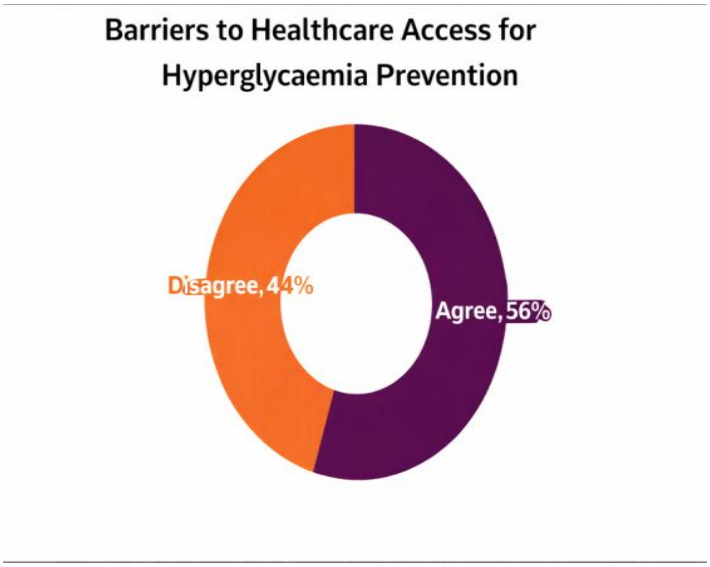

Figure 4: Barriers associated with glycaemia testing

Figure. 4 presents a summary of the overall responses concerning challenges faced in accessing healthcare resources for hyperglycemia prevention among taxi drivers. As shown, 56% of participants agreed with statements assessing their knowledge and awareness, while 44% disagreed.

Association between Demographic Characteristics and Challenges in Utilizing Healthcare Resources for Hyperglycemia Prevention

A Chi-Square analysis was conducted to examine the association between demographic characteristics and the challenges faced by taxi drivers in utilizing healthcare resources for hyperglycemia prevention. The analysis aimed to determine whether factors such as age, education level, marital status, years of driving experience, and average daily driving hours influenced the barriers to accessing healthcare.

A significant association was found between education level and perceived barriers to healthcare access ($\chi^2 = 40.58$, $p < .001$). Taxi drivers with lower levels of education were more likely to perceive greater barriers to accessing healthcare resources. This may be due to limited knowledge about healthcare services or the inability to navigate the healthcare system effectively. Similar findings have been noted in other studies, where lower educational attainment was linked to poor health literacy and limited healthcare utilization (Goyal & Rakhra, 2024; Lule et al., 2024).

A notable association was identified between years of driving experience and healthcare access challenges ($\chi^2 = 25.82$, $p = .012$). Drivers with more years of experience were more likely to report greater challenges in accessing healthcare. This could be attributed to entrenched habits and occupational fatigue, or the perception that health issues are inevitable or unchangeable with long-term driving. These results align with prior research indicating that long working hours and stressful job conditions can contribute to poor health behaviors and reduced healthcare utilization among transportation workers (Marani et al., 2020; Appiah et al., 2020).

The analysis showed no statistically significant associations between healthcare access and age ($\chi^2 = 30.50$, $p = .055$), marital status ($\chi^2 = 20.06$, $p = .789$), religion ($\chi^2 = 25.65$, $p = .113$), place of residence ($\chi^2 = 22.62$, $p = .481$), or average daily driving hours ($\chi^2 = 35.19$, $p = .478$). These findings suggest that demographic factors like age, marital status, and religious affiliation, as well as the number of hours spent driving, did not significantly affect taxi

drivers' ability to access healthcare resources for hyperglycemia prevention.

Table 8: Chi-Square Analysis of Demographic Characteristics and Challenges in Utilizing Healthcare Resources for Hyperglycemia Prevention

	X^2	*p value*
Age	19.37	.961
Marital Status	31.14	.510
Level of Education	32.06	.463
Religion	37.70	.134
Residences	76.54	.335
Glucose Level Status	7.12	.971
Years of Driving Experience	21.79	.591
Driving Hours	20.85	.648

Discussion

Socio-Demographic Characteristics

The socio-demographic profile of taxi drivers in Agblezaa-Teshie provides essential insights into the prevalence and risk factors associated with hyperglycemia. The study sample was predominantly middle-aged (40–49 years, 44%), with a substantial proportion married (55%) and having completed secondary, technical, or vocational education (56%). These findings align with previous studies in Ghana that reflect similar demographic patterns in urban occupational groups. The prevalence of Christian affiliation (67%) and urban residency is consistent with broader patterns seen in the Greater Accra Region, where Christianity dominates, and urbanization drives the prevalence of non-communicable diseases (NCDs) such as diabetes (Fonu et al., 2024).

Moderate educational attainment in the sample suggests that health literacy could be improving in this group, but access to health education remains a challenge. Despite a fair level of education, many drivers still face barriers to accessing healthcare, which has been observed in other populations with similar socio-economic profiles (Lamptey et al., 2022). The sedentary nature of the occupation, with most drivers having 6–10 years of experience and working 6–12 hours daily, underscores the role of occupational factors in exacerbating hyperglycemia risk. Previous studies have also linked extended working hours and irregular eating patterns among commercial drivers to metabolic health challenges, including hyperglycemia (Appiah et al., 2020; Sekgala et al., 2023).

The study observed a 24% prevalence of hyperglycemia among taxi drivers, which is consistent with findings from other studies in sub-Saharan Africa. For example, research among long-distance drivers in Nigeria and Kenya showed 15–28% prevalence of hyperglycemia and related metabolic abnormalities (Bashir et al., 2021; Mabetwa et al., 2022). This high prevalence in urban Ghana is alarming and highlights the growing burden of non-communicable diseases in rapidly urbanizing populations, where sedentary work, poor diet, and high stress are common (Rajagopalan et al., 2024; Tinajero & Malik, 2021).

The study also found a higher prevalence of hyperglycemia among older drivers (50–59 years), which is consistent with global trends linking age to the risk of type 2 diabetes (Qiu et al., 2023). This is due to factors like progressive insulin resistance and reduced pancreatic function. The married drivers represented the largest proportion of those with hyperglycemia (65.63%), suggesting that family dynamics, stress, and dietary habits might be influencing their health status (Karimi et al., 2025). Additionally, drivers with 1–5 years of experience and those working 6–12 hours daily had higher hyperglycemia rates, emphasizing the long working hours and stress associated with the occupation as contributing factors (Marani et al., 2020; Appiah et al., 2020).

The study found that while over 70% of participants demonstrated some awareness of hyperglycemia and its general risk factors (e.g., excessive sugar intake, physical inactivity), knowledge regarding specific clinical symptoms was significantly lower. Only 49.6% identified frequent urination, and 45.9% recognized excessive thirst as key symptoms of hyperglycemia. This knowledge gap mirrors findings from other studies, such as Lule et al. (2024), where urban workers in Ghana exhibited general awareness of diabetes but lacked detailed understanding of its symptoms.

The significant association between glucose level status and awareness ($\chi^2 = 43.75$, $p < .001$) suggests that personal health experiences, such as being diagnosed or treated for hyperglycemia, play a key role in shaping knowledge. Drivers with abnormal glucose levels were more likely to seek medical attention or receive health information, emphasizing the importance of early diagnosis and health education in improving awareness (Sakyi et al., 2023). These results highlight the need for targeted education focusing on symptom recognition and preventive behaviors, particularly for drivers without prior exposure to medical advice.

The prevalence of lifestyle risk factors was notably high, with low fruit and vegetable intake (69.9%), sedentary behavior (52.6%), inadequate sleep (62.4%), and high stress levels (71.4%) being the most commonly reported risk factors. These findings are

consistent with global evidence linking poor lifestyle choices to hyperglycemia and type 2 diabetes (Moradi et al., 2021; Salari et al., 2024). The occupational nature of taxi driving, including long hours of sitting, irregular eating habits, and limited opportunities for physical activity, further exacerbates the risk (Sekgala et al., 2023).

The association between marital status and lifestyle risk factors ($\chi^2 = 48.41$, $p = .031$) indicates that married drivers may experience additional dietary challenges or higher stress levels due to family responsibilities. This finding is in line with previous research that suggests social and relational contexts significantly influence health behaviors, including dietary habits and physical activity patterns (Karimi et al., 2025). The study also found that insufficient physical activity (35.3% of drivers) and substance use (51.1% tobacco, 39.1% alcohol) contributed significantly to the risk of hyperglycemia, reflecting patterns seen in other commercial drivers (Girotto et al., 2020).

Several barriers to healthcare utilization were identified, including high out-of-pocket costs (74.4%), long waiting times (72.2%), and inadequate insurance coverage (63.9%), which are consistent with broader healthcare access challenges in Ghana (Amon et al., 2024). Other barriers included cultural dietary practices (62.4%) and lack of health education (52.6%), which prevent drivers from adopting healthier lifestyles or seeking early medical intervention.

These findings underline the importance of addressing financial and logistical barriers to healthcare, particularly for informal sector workers like taxi drivers. Interventions should focus on improving access to affordable healthcare services, increasing health literacy, and promoting lifestyle modifications to reduce the burden of hyperglycemia and diabetes among this vulnerable group. Furthermore, community engagement and peer-support programs could play a key role in overcoming cultural and social barriers to care.

Conclusion

This study provides important insights into the prevalence, risk factors, awareness, and barriers related to hyperglycemia among taxi drivers in the Agblezaa-Teshie area of the Greater Accra Region. The findings indicate that 24.1% of taxi drivers in this urban setting are living with hyperglycemia, which is a significant public health concern given the increasing burden of non-communicable diseases (NCDs) in rapidly urbanizing populations. The high prevalence of hyperglycemia**,** particularly among older drivers and those with prolonged work hours**,** reflects the complex interplay between lifestyle and occupational factors such as sedentary behavior**,** poor dietary habits**,** and high stress levels that characterize the taxi driving profession. These factors align with global research highlighting the growing risk of metabolic disorders in informal sector workers (Rajagopalan et al., 2024; Sekgala et al., 2023).

The study also identifies significant gaps in health knowledge and awareness**,** with many drivers lacking understanding of key symptoms and the long-term implications of hyperglycemia. Despite recognizing general risk factors like excessive sugar intake and physical inactivity**,** knowledge about clinical symptoms was inadequate, suggesting a critical need for targeted health education programs**.** Notably, drivers with abnormal glucose levels were more likely to have increased awareness, underlining the role of personal health experiences in shaping knowledge (Sakyi et al., 2023). As such, early diagnosis and routine screening are essential to improving health literacy and empowering taxi drivers to take proactive measures to manage their health.

Another key finding is the substantial barriers to healthcare access, including financial constraints**,** lack of health insurance, and time limitations due to long work hours. These barriers prevent taxi drivers from utilizing available healthcare resources for hyperglycemia prevention and management. Addressing these challenges will require systemic improvements in healthcare delivery**,** such as affordable, accessible, and flexible services that cater to the specific needs of informal sector workers. Community-based interventions**,** including mobile health services and workplace wellness programs**,** could play a vital role in improving access to preventive healthcare and early intervention for hyperglycemia and other chronic conditions.

The study's findings also underscore the importance of integrating lifestyle modification interventions into public health strategies aimed at reducing the burden of hyperglycemia in high-risk populations such as taxi drivers. These interventions should focus on nutrition education**,** physical activity promotion, and stress management tailored to the unique circumstances and needs of the taxi-driving profession. Additionally, strengthening collaborations between local health authorities, employers, and community organizations will be crucial to fostering an environment that supports healthy behaviors and prevents chronic diseases in vulnerable groups.

In conclusion, this study provides valuable data on the health risks faced by taxi drivers in Agblezaa-Teshie, and it contributes to the broader discourse on hyperglycemia prevention and health promotion in urban, informal sector populations. There is an urgent need for targeted interventions that address the socio-economic**,** occupational, and educational barriers to effective hyperglycemia management. By addressing these challenges, it is possible to reduce the prevalence of hyperglycemia and its associated complications, thereby improving health outcomes for taxi drivers and contributing to the broader goal of reducing NCDs in Ghana and other similar settings.

Recommendations

Based on the findings of this study, several recommendations can be made to improve the prevention and management of hyperglycemia among taxi drivers in Agblezaa-Teshie, as well as in similar urban populations:

- Health literacy campaigns should be conducted to improve awareness of hyperglycemia and its risk factors, symptoms, and long-term health implications. Such programs should focus on symptom recognition, the importance of early diagnosis, and lifestyle modifications, especially addressing gaps in knowledge related to clinical symptoms such as frequent urination and excessive thirst.
- Mobile health clinics and community-based health services should be introduced to provide routine health screenings, including blood glucose testing, in areas

where taxi drivers frequent (e.g., taxi stations, rest stops). This would increase access to early detection and management, particularly for drivers who may face time and financial constraints in accessing traditional healthcare services.

- 3.Physical activity initiatives should be incorporated into drivers' daily routines. This could include encouraging breaks during long shifts for short walks or stretches to reduce sedentary behavior. Additionally, promoting active commuting (e.g., walking or cycling) where feasible can contribute to better health. Nutritional education should be promoted to reduce the intake of processed foods and sugary beverages among taxi drivers. Collaborations with local vendors to offer healthier meal options at affordable prices at common taxi stations could be explored.
- 4.Routine blood glucose screenings should be incorporated into the annual driver license renewal process, ensuring that drivers are regularly assessed for hyperglycemia and other risk factors. This would help detect early signs of hyperglycemia and initiate early intervention before complications arise.
- 5. Advocacy for policy reforms is crucial to ensure that informal sector workers like taxi drivers have access to affordable healthcare and preventive services. Policymakers should consider integrating informal workers into national health insurance schemes and offer subsidized care to promote universal health coverage. Policies should also support the promotion of active transport (e.g., walking, cycling) and improve the availability of healthy food options in urban areas, especially targeting high-risk occupations such as taxi driving.

Limitations

- The study employed a cross-sectional design, which limits the ability to establish causal relationships between lifestyle risk factors and hyperglycemia. While associations can be identified, the temporal nature of how risk factors contribute to hyperglycemia could not be determined. A longitudinal study would provide more insight into the causal pathways and the long-term impact of lifestyle behaviors on hyperglycemia.
- The study relied on self-reported data for lifestyle factors such as dietary habits, physical activity, and stress levels. This could have led to response bias, where participants may overestimate or underestimate their health behaviors. Objective measures such as food diaries or direct observations of physical activity would help to validate the self-reported data.
- The study was conducted in a specific urban area (Agblezaa-Teshie) and focused on taxi drivers. The findings may not be directly applicable to drivers in rural areas or other urban populations with different socioeconomic conditions or healthcare access. Further studies in diverse settings are needed to enhance the external validity of the results.
- Although the sample size of 133 taxi drivers is sufficient for initial analysis, it is relatively small compared to the broader population of commercial drivers in Ghana. A larger, more diverse sample would provide more robust results and allow for a deeper understanding of the variations in health risks across different driver subgroups, such as long-distance drivers versus local taxi drivers.
- While the study controlled for several key variables, other unmeasured confounders, such as genetic factors, family history of diabetes, or other underlying health conditions, may have influenced the prevalence of hyperglycemia. Without accounting for these potential confounders, the study's findings should be interpreted with caution.

Further research should consider a broader range of variables that could affect hyperglycemia risk in this population. These limitations should be considered when interpreting the findings, and future research could address these issues to provide a clearer understanding of the health challenges faced by taxi drivers and similar occupational groups.

Conflict of interest

Theres no conflict of interest

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