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Research

Life style, health seeking behaviour and nutritional status of commercial vehicle drivers in Port Harcourt, Nigeria

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Background

Health seeking behaviour, lifestyle characteristics and the working conditions of commercial vehicle drivers often foster unhealthy habits and increase their vulnerability to health inequalities, including overweight, obesity, cardiovascular and metabolic disorders.

Objective

The objective of this study was to examine the life style, dietary habit, health seeking behaviour and nutritional status of commercial vehicle drivers in Port Harcourt, Nigeria.

Methods

This descriptive and cross-sectional study adopted a simple random sampling technique to recruit 202 commercial vehicle drivers in Port Harcourt, Nigeria. A semi-structured interviewer-administered questionnaire was used to obtain information on demographics, life style and health care characteristics of the commercial vehicle drivers. The anthropometric indices (weight and Height) of the drivers were obtained and their body mass index (BMI) was determined using WHO classification. Data were analysed using descriptive and inferential statistics, and level of significance was set at p= 0.05.

Results

Mean age of the drivers was 43 ± 5.2 years and majority (86%) of them have completed secondary education. The majority (59%) consume soft drinks at least once per week and 85% eat at least one meal outside their home daily, while 16% and 49% patronize herbal medicine/concoction and visit the pharmacy or chemist store to purchase drugs respectively as first point of care when sick. The prevalence of overweight and obesity among the commercial drivers was 20% and 33% respectively. There was a statistically significant relationship between elevated BMI and respondent's age ($p<0.05$), level of education ($P=0.05$), physical inactivity ($P<0.01$) and frequency of alcohol consumption ($P<0.05$).

Conclusions

This study confirms high prevalence of overweight and obesity among the commercial vehicle drivers and its associated factors of poor nutritional habits, health and life style characteristics. Therefore, a comprehensive nutritional programme including behavioural change and communication that is context-specific targeted at commercial drivers should be implemented.

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INTRODUCTION

Driving is a demanding activity requiring continuous perception, interpretation, decision and action (Merat, 2019). Thus, safety on the roads depends partly on the host driver's mental state which can be influenced by visual acuity, physical fitness, or any diseases. Safety also depends on the condition of the vehicle (this includes the tyres, brakes system, seat belt, head lamps, wiper etc.) and the environment, i.e. weather, the roads and road signs, other drivers and pedestrians etc (WHO, 2015).

Commercial drivers (truck, bus and taxi drivers) render services that are vital to the economy of every country as human, farm produce and manufactured goods etc, within the country (Benstowe, 2007). And in a country like Nigeria, other forms of transportation like rail, water, and air are either limited or very expensive, hence pressure to move people and goods falls on the commercial drivers (Olagunju, 2015).

But, the occupational nature of driving predisposes drivers to long sedentary periods of working hours (up to 14 hours per day), excessive noise, prolonged sitting and unhealthy lifestyles (Adepoju and Akinbode, 2019). Hence, Commercial drivers have been reported to be at risk of negative health outcomes (Kay and McLaughlin, 2014; Thiese et al., 2015; Pritchard et al., 2023). They are at higher risk of adverse health outcomes such as psychological and psychiatric disorders, musculoskeletal disorders, as well as impairments resulting from disrupted biological cycles and other respiratory morbidities, cardiovascular disease, risk-laden substance use, overweight and obesity (Apostolopoulos et al., 2010; Kay and McLaughlin, 2014; Thiese et al., 2015; Singaravel et al., 2017).

In addition, unhealthy lifestyles such as poor dietary intake, tobacco use, smoking, alcohol consumption and physical inactivity are very common among commercial drivers which tend to cluster and present major modifiable contributors to the burden of chronic disease (Yach et al., 2005). In addition, WHO has reported a link between drivers' substance use, including hazardous use of alcohol, and road traffic accidents in Nigeria (WHO, 2009). Alcoholic beverage consumption and cigarette smoking which is common among many commercial drivers have been found to interfere with nutrient intake, utilization and bioavailability with resultant changing body weight, basal metabolic rate and abnormal body mass index (BMI) (Mustapha et al., 2012) which has become a major global public health problem and rising at a faster rate in urban areas of low- and middle-income countries (Vandevijvere et al., 2015; Asiki et al., 2018).

The burden of overweight and obesity (BMI of 25 kg/m2 or greater) has continued to rise, claiming about 2.8 million lives globally (FDRE-MOH, 2016). WHO reported that overweight and obese persons nearly tripled between 1975 and 2016 (WHO, 2018) and it is associated with variety of non-communicable diseases, particularly cardiovascular diseases and stroke (Ng et al., 2017). In 2016, more than 1.9 billion adults aged 18 years or more were overweight, with 650 million obese (WHO, 2018) and 62% of the world's obese population resided in developing countries, Nigeria inclusive (Ford et al., 2017).

As a developing nation undergoing socio-economic and epidemiological changes, Nigeria also bears burden of non-communicable diseases (NCD). It was estimated that about 57 million Nigerians are hypertensive with many who remain undiagnosed. Additionally, 22% of all deaths was attributable to non-communicable diseases and 9.2% of this was cardiovascular deaths (Erhiano et al., 2015). Erhiano et al. (2015) in a study of hypertension among commercial bus drivers in Sokoto, Nigeria added that BMI of above 25kg/m^2 was identified as one of the factors associated with hypertension. This rise of non-communicable disease in middle- and low-income countries that were initially prevalent in high income countries is attributed to globalization and industrialization. The working conditions of commercial drivers create a favourable environment for the development of obesity and associated NCDs such as hypertension. These include sedentary lifestyle, lack of time that favour healthy living, poor diets, consumption of highly refined food rich in fat and sugar (energy dense food), low physical activity, irregular sleeping habits, poor access to health care and health seeking behaviour, and increased exposure to stress (Go et al., 2014).

Occupational epidemiological studies conducted in the past decades have provided a large body of evidence that prevalence of overweight and obesity and associated factors of cardiovascular disease are more common among commercial vehicle drivers compared to other occupational groups (Tobin et al., 2013; Garbarino et al., 2018; Hege et al., 2018). However, in Nigeria, there is a dearth of information on the lifestyle, food consumption habits of these commercial vehicle drivers and their association with their nutritional status. Consequently, this study was carried out to assess the life style, health seeking behaviour and nutritional status of commercial vehicle drivers in Port Harcourt, Nigeria.

METHODS

This descriptive and cross-sectional study was conducted in Port Harcourt City. A pre-tested, interviewer-administered questionnaire was used to collect information on socio-demographic characteristics, life style, and health seeking behaviour of drivers.

The study population universe consisted of 367 commercial vehicle drivers registered at the following seven motor parks: Rumuokoro Park, Choba Park, Waterlines Park, Mile 3 Park, Mile 1 Park, Abali Park and Lagos Park, all located in Obio/Akpor and Port Harcourt Local Government Areas of Rivers State, Nigeria. The vehicles in the parks included salon cars and 18-sitter buses. Drivers that were 18 years and above, who understood the purpose of the study and willing to participate were recruited in the study; they were from different backgrounds, levels of experience and ethnic groups.

SAMPLE SIZE AND SAMPLING PROCEDURE

The minimum sample size for a given population was determined using

$$n = \frac{N}{1+Ne^2}$$ (Yaro Yamen formula)

Where, n= minimum sample size, N = Number of the study population which is 367, e =desired precision/error which is 5% (0.05). This gave a sample size of 191. To cater for

potential ~10% attrition or non-responses and incomplete responses, 210 commercial vehicle drivers were included in the study. All the seven motor parks were visited and the drivers were systematically selected using a sampling interval which was generated by dividing the total number of registered drivers in a park by the number required in that park (30 drivers from each park).

PHYSICAL EXAMINATION OF THE DRIVERS

The height of the drivers was taken using a stadiometer with the backs of their heads, their bottoms and heels in contact with the tall block of the stadiometer and both hands hanging loosely on both sides with their eyes looking straight ahead. Their weight was taken in light clothes using a bathroom scale (Camry P/1211/CRI) calibrated with a standard weight while wearing light clothing and without footwear. BMI (weight(kg)/height $(m)^2$) was determined and classified according to the WHO classification as underweight (BMI< 18.5), normal weight (BMI = 18.5 – 24.9), overweight (BMI = 25.0 – 29.9) and obese (BMI ⩾ 30).

DATA PROCESSING AND ANALYSIS

Data were cross-checked for accuracy and cleaned. Statistical Package for the Social Sciences (SPSS) version 20.0 was employed for the analysis. The input data were summarised using descriptive statistics. Inferential statistics (Fisher's Exact Test) were used to determine statistical relationships between variables. Level of statistical significance was set at P= 0.05 and 95% confidence interval.

INFORMED CONSENT

After explaining the purpose of the research to the drivers, written informed consent was obtained from leaders of the association of the transport workers' union and from each driver before the survey. The respondents were ensured of the confidentiality of the information obtained

RESULTS

After the administration of the survey tools, 202 questionnaires were completed. No female commercial drivers among the respondents were encountered and interviewed in this study. Socio-demographic characteristics of the respondents are shown in Table 1. The mean age of the drivers was 43.3±5.2 years, the youngest was 19 and oldest was 67. Most were married (64%). A majority (86%) claimed to have completed their secondary education and 9.9% attained tertiary level of education.

As indicated in Table 2, 20% of the drivers consume snacks daily, 14% once per week and 28% don't take snacks. Similarly, only about a quarter (26%) said they don't take carbonated soft drinks. However, nearly all take alcoholic beverages. A majority (85%) eat at least one meal per day outside their home.

Table 3 shows that some (45%) have illness they manage including chest pain (15%), fever or body pain (12%) and high blood pressure (17%). The respondents revealed that when they are sick 34% of them go to the hospital for medical attention, 16% use herbal medicine like local herbs and about half (49%) use medicine from chemist or pharmacy. More than half (52%) engage in physical exercise. However, only 9.9% exercise always, 7.9% do so often, 25% do so sometimes and 21% rarely engage in physical exercise; 36% do not engage in any physical exercise.

Table 1. Socio-demographic characteristics of the respondents (N=202)

Variable	Frequency	Percentage
Age (years)		
Less than 21	14	6.9
21 - 30	44	21.8
31 - 40	52	25.7
41- 50	66	32.7
51 and above	26	12.9
Marital Status		
Single	62	30.7
Married	129	63.9
Separated/Divorce	5	2.5
Widow/Widower	6	3.0
Educational Status		
Primary Education	8	4.0
Secondary Education	174	86.1
Tertiary Education	20	9.9
Religion		
Christian	178	88.1
Islam	15	7.4
Traditional	5	2.5
No Religion	4	2.0
	202	**100**

Table 2. Life style and dietary habits of commercial vehicle drivers in Port Harcourt (N=202)

Variable	Frequency	Percentage
Do You eat snacks*		
No	56	27.7
Yes	146	72.3
Frequency of snacks consumption		
once per week	29	14.4
2-3 Times per week	44	21.8
4-5 times per week	32	15.8
Everyday	41	20.3
None	56	27.7
Frequency of Vitamin/Mineral Supplement use		
Once Per Month	6	3.0
once per week	20	9.9
2-3 Times per week	14	6.9
Everyday	30	14.9
None	132	65.3
Frequency of carbonated soft drinks consumption		
2-3 times Per Month	21	10.4
once per month	10	5.0
once per week	28	13.9
2-3 Times per week	43	21.3
4-5 times per week	22	10.9
Everyday	26	12.9
None/never	52	25.7
Frequency of alcoholic beverages consumption		
Everyday	36	17.8
4-5 times per week	54	26.7
1-3 Times per week	56	27.7
once per month	34	16.8
Never	22	10.9
Frequency of eating (not snacks) at least one meal outside home		
Daily	172	85.1
Rarely	26	12.9
Don't eat Outside	4	2.0
Total	**202**	**100**

*Food eaten between regular meals

Table 3: Health Care characteristics of the Respondents (N=202)

Variable	Frequency	Percentage
Are you managing some illness?		
Yes	91	45.0
No	74	36.6
Don't know	37	18.3
Type of illness you have at present		
Chest Pain	31	15.3
Fever/Body pain	25	12.4
High Blood Pressure	35	17.3
No Illness	74	55.036.6
Don't know	37	18.3
Where do you go for treatment?		
Hospital	68	33.7
Traditional Medicine	33	16.3
Chemist/Pharmacy store	99	49.0
None	2	1.0
Engaged in any physical exercise?		
No	97	48.0
Yes	105	52.0
Frequency of engaging in physical exercise		
Always	20	9.9
Often	16	7.9
Sometimes	51	25.2
Rarely	42	20.8
None	73	36.1
Total	**202**	**100**

The nutritional status of the respondents using BMI indices shows that the prevalence of underweight, normal weight, overweight and obesity were 1.0%, 46%, 20% and 33% respectively. The mean BMI was 28.7 ± 5.7 kg/m^2, lowest was 18.2 kg/m^2 and maximum was 44.3 kg/m^2. Six (3.0%) of the drivers had a BMI of more than 40kg/m^2, an indication of morbid obesity.

Table 4: Nutritional status of the respondents (N=202)

Variables	Frequency	Percentage
Underweight (< 18.50 kg/m^2)	2	1.0
Normal Range (18.50 - 24.99 kg/m^2)	92	45.5
Overweight (25.0 - 29.99 kg/m^2)	41	20.3
Obese (30.0 kg/m^2 and above)	67	33.2
Total	**202**	**100**

The Fisher's Exact Test for associations between nutritional status of the drivers and some selected variables in Table 5 shows that the BMI of the respondents increases with age (P=0.008). Similarly, overweight and obesity was predominant among respondents who do not engage in any physical exercise or their frequency of exercising is low (P=0.000). The relationship between nutritional status and alcohol consumption was not statistically significant (P=0.285). However, there was a significant relationship (P=0.009) between frequency of alcohol consumption and BMI. There was also a statistically significant relationship (P=0.030) between respondents' level of education and their BMI.

Table 5. Nutritional status of respondents and some selected characteristics

Variable	Under-weight	Normal weight	Over-weight	Obese	Total	P-value
Age of respondents						
Less than 21	0 (0.0)	5 (35.7)	8 (57.1)	1 (7.1)	14	
21 - 30	0 (0.0)	29 (65.9)	10 (22.7)	5 (11.4)	44	
31 - 40	2 (3.8)	20 (38.5)	10 (19.2)	20 (38.5)	52	**0.008**
41- 50	0 (0.0)	25 (37.9)	11 (16.7)	30 (45.5)	66	
51 and above	0 (0.0)	13 (50.0)	2 (7.7)	11 (42.3)	26	
Level of Education						
Primary	0 (0.0)	3 (37.5	1 (12.5)	4 (50.0)	8	
Secondary	0 (0.0)	78 (44.8)	36 (20.7)	60 (34.5)	174	
Tertiary	2 (10.0)	11 (55.0)	4 (20.0)	3 (15.0)	20	**0.030**
Physical activity freq.						
Always	1 (5.0)	16 (80.0)	2 (10.0)	1 (5.0)	20	
Often	0 (0.0)	9 (56.2)	5 (31.2)	2 (12.5)	16	**0.000**
Sometimes	0 (0.0)	27 (52.9)	17 (33.3)	7 (13.7)	51	
Rarely	0 (0.0)	17 (40.5)	12 (28.6)	13 (31.0)	42	
None	1 (1.4)	23 (31.5)	5 (6.8)	44 (60.3)	73	
Alcohol consumption						
No	1 (4.5)	8 (36.4)	5 (22.7)	8 (36.4)	22	
Yes	1(0.6)	84 (46.7)	36 (20.0)	59 (32.8)	180	**0.285**
Frequency of alcohol consumption						
Everyday	0 (0.0)	16 (44.4)	4 (11.1)	1 (44.4)	36	
4-5 times per week	0 (0.0)	18 (33.3)	10 (18.5)	26 (48.1)	54	
2-3 Times per week	0 (0.0)	28 (50.0)	17 (30.4)	11 (19.6)	56	**0.009**
once per week	0 (0.0)	20 (58.8)	5 (14.7)	9 (26.5)	34	
None	2 (9.1)	10 (45.5)	5 (22.7)	5 (22.7)	22	
Total	**2**	**92**	**41**	**67**	**202**	

DISCUSSION

Previous studies have reported that commercial vehicle drivers are at a high risk of developing overweight or obesity and its associated risk factors of non-communicable disease due to the sedentary nature of their job, their life style and health characteristics (Sieber et al., 2014; Pritchard et al., 2023). The present study presents further evidence in this regard on commercial vehicle drivers in Port Harcourt, Nigeria. Most of these drivers were 50 years or less. Tobin et al. (2013) similarly reported that 81.2% of inter-city drivers surveyed in Edo State, Nigeria were less than 44 years old.

A majority of drivers in our sample ate snacks, which may be high in energy dense; 20% did so daily. Soft drink consumption was relatively higher among the drivers as well and 85% ate their main meal outside their home daily. Some studies (Erhiano et al., 2015; Bschaden et al., 2019) have reported that the job of professional commercial drivers encourages patronage of fast-food vendors/restaurants where they would be exposed to high energy dense foods and this alone and or in combination with lack of physical activities could lead to elevated body mass index. Amole et al. (2011) added that consumption of high-energy diets is one of the major contributing factors to the development of obesity.

The use of alcoholic beverages among our respondents was high. In a related study, Amadi et al. (2019) reported a 71.0% alcohol use among professional male long haul drivers in Lagos, Nigeria. Olusegun and Ikeoluwapo (2016) reported that among the commercial drivers in Jabi Park Abuja, Nigeria studied, 34.3% drank alcohol daily while 40% drank it twice a week and 72.2% of alcohol users reported taking 1 to 3 bottles of beer per day in the last 3 months. The high use of alcoholic beverages among drivers in Nigeria may have been encouraged by the fact that alcoholic beverages can be purchased by anyone and anywhere, even in motor parks, especially in small or pet bottles and sachets, as no statutory agency monitors its distribution. In the present study, those who drank alcohol at least four times per week were more obese than those who do not or sparingly drink alcohol. This is similar to previous reports in the literature (Swinburn et al., 2004; Tobin et al., 2013; Adepoju and Akinbode, 2019).

The health seeking behaviour of the respondents also calls for attention, as about half (49.0%) of the drivers prefer going to the pharmacist or chemist store to purchase drugs which may sometimes indicate self-medication. These may likely be connected to the drivers' tight schedules, erratic shift-work hours, particularly during the nighttime, long working hours, traffic congestion, and giving priority to care for their families.

Previous studies that have assessed BMI among different populations revealed that negative association between moderate-to-vigorous physical exercise and fat mass accumulation was observed, while physical inactivity and sedentary behaviour were positively associated with fat mass accumulation (Myers et al., 2017; Beaulieu et al., 2017). In the present study addition, 21% and 36% said that they rarely or never engaged in physical exercise respectively. This result is slightly higher than what was reported by Olusegun and Ikeoluwapo (2016) in Jabi Park Abuja, Nigeria, in which 51.3% of the drivers were physically inactive respondents. Turner and Reed (2011), in a study among truck drivers in the US, reported that most of the drivers in their study had not exercised at all in the previous week. The prevalence of overweight and obesity in their sample was 20.3% and 33.2% respectively. This is similar to study conducted by Yosef et al. (2020) among long distance drivers in Ethiopia, in which prevalence of overweight and obesity reported was 56.5%; 39.1% overweight and 10.8% obesity was reported by Pourabdian et al. (2020) among commercial drivers in Iran and 26.8% overweight and 9.1% obesity by Adepoju and Akinbode (2019) among commercial drivers in Ibadan municipality, Nigeria.

This study revealed that there was a significant positive relationship (p=0.000) between BMI and age. This finding is consistent with reports in the literature (Bakari et al., 2007; Toryila et al., 2009; Lemke et al., 2015; Pourabdian et al., 2020). There was also a statistically significant inverse relationship (P=0.001) between respondents' level of education and their BMI.

CONCLUSIONS AND RECOMMENDATIONS

We found high prevalence of overweight and obesity among commercial drivers in the urban city of Port Harcourt. Among others, respondents' age, level of education, physical inactivity, poor food choices and frequency of alcohol consumption were identified to have statistically significant relationships with elevated BMI. Therefore, efforts must be geared towards averting the problem of energy-imbalance by researching the development of an evidence-based nutritional intervention programme and implementing it. This could include behaviour change communication that is context-specific, targeted at commercial drivers. Health education programs should be designed for awareness creation on the importance of avoiding sedentary lifestyle and consuming healthy foods or drinks.

Even though this study was limited to two large and well populated local government areas of Port Harcourt, Rivers State, Nigeria, the findings compare well to the broader communities in many parts of Nigeria and Sub-Saharan Africa. Further cross-sectional and comparative research work with a larger sample frame is needed not only in giving fresh look into the subject but to also identified risk factors of overweight and obesity among the studied population.

AUTHOR CONTRIBUTIONS

Conceptualization: **OZA** and **CRN**. Writing – original draft: **OZA**, and **GCO**. Investigation: **OZA** and **GCO**. Data curation: **GCO** and **CRN.**

CONFLICT OF INTEREST

The authors declare to have no conflict of interest with respect to the research, authorship, and/or publication of this work.

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