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Prevalence of substance abuse amongst commercial vehicle drivers in Bariga and Gbagada motor parks of Lagos State, Nigeria.

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ABSTRACT

Substance abuse by vehicle drivers is a global problem that increases the incident of road traffic accidents and misconduct. The aim of the study is to identify the types of substance(s) abused by some commercial drivers in Bariga and Gbagada motor parks in Lagos metropolis and the reasons. Generic Multi-Drug Urine Dip Card Test Kit was used to test for the presence of ten psychoactive drugs and questionnaires were used to ascertain their sociodemographic. All the participants were male and 98.9% are Nigerians, 70.8% were married and 78.4% have secondary school education. Results showed that 75.1% of the participants consumed alcohol, 5.7% had taken other stimulants in recent times, 51 participants tested positive to at least one psychoactive drug, 47% of the participants revealed that they took respective substances to be energized whereas 35.1% took the substances for pleasure. There was a significant difference ($P \leq 0.05$) between accident history and religion, excessive alcohol intake and driving, reasons why people abuse substances, marital status and psychoactive substance abuse ($P \leq 0.05$). Reasons for substance abuse were significantly ($P \leq 0.01$) different compared to and alcohol intake, alcohol intake frequency, and accident history. These findings may contribute to the increase in misconducts, sundry crimes and accidents on the roads.

Keywords: Substance abuse, alcohol, psychoactive drugs, prevalence, road transport workers, accident.

BACKGROUND

Road transportation is by far the commonest means of transportation in Nigeria compared to others means like railway and air transportation. According to Umar (2008), the number of registered vehicles in Nigeria rose between the years 1988-2004 from 600,000 to 6,000,000. This number would have been drastically increased based on the occurrence of road traffic especially in metropolitan cities of Nigeria. Despite the change of quality of lives associated with owning a vehicle, its possession has made many families bereaved of their breadwinners or loved ones due to unprecedented rate of road traffic accidents (RTAs) (Umar, 2008). A single substance abuse experience can have impulsive effect notably on naïve individuals, and this could pose serious consequences such as accident or addiction. According to the WHO (2010), about 185 million people worldwide struggle with drug or substance abuse, and drug abuse-related deaths accounted for 0.4% of total deaths worldwide Schottenfeld *et al* (2011) reported marijuana could put young adult at risk for an aggressive form of testicular cancer while Bell *et al* (2014) reported the correlation between marijuana and acute myeloid leukemia.Wisner *et al* (2013) also showed that Dextromethorphan (DXM) in similar pattern with Phencyclidine (PCP) and ketamine could increase the risk of serious central nervous system and cardiovascular effects such as respiratory distress, seizures, and increased heart rate from the antihistamines found in cough medicines. Investigations by Uzun *et al*., (2010) have shown increased risk of falling in elderly persons taking benzodiazepines. Other Substance abuse, including alcohol and prescription drugs, can induce symptoms which resemble mental illness (Di Forti *et al.,* 2014) and also increase the risk of infectious diseases such as HIV (Parikh *et al.,* 2012). Psychoactive substance use is increasing globally, and there is a growing worry about this inclination and its adverse effects (Jamison *et al.,* 2006). The use of these substances by vehicle drivers is a common trend in most part of the world particularly in developing or under developed countries. A major reason claimed among road transport worker is to alleviate fatigue and stress and to be awake and alert while driving over several hours. Labat *et al*., (2008) reported that this substance use impairs the skills essential for driving and it has been associated with the cause of road traffic accidents which are often fatal leading to injuries and death. More attention has been drawn in recent years to substance use and driving as a result of road traffic accidents causally related to substance use (Beirness and Beasley, 2010) Substance use may be found as a regular pattern of behaviour among many drivers which may occur in and out of the driving periods (Okpataku, 2016). Previous studies had reported the prevalence and the factors influencing substance abuse among road transport workers (Drummer *et al*., 2004; Keller *et al*., 2009; Senna *et al*., 2010; Bello, *et al*., 2011; Yunusa, *et al*., 2017).

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Several literatures have also reported the adverse effects of substance abuse.

Conducting an easy-step urine drug testing and questionnaire survey among the transport workers was a simple way of identifying the overwhelming majority of substance abusers. It was vital to examine the knowledge of road transport workers towards substance abuse and the adverse effects of substance abuse. Therefore, this study was aimed at determining the prevalence of substance abuse among road transport workers in Bariga and Gbagada Motor Parks of Lagos State, Nigeria. Lagos State is the most populated state in Nigeria. To the best of my knowledge, no study has been carried out at Bariga and Gbagada Parks, Lagos State, Nigeria on substance abuse. The influence of substance abuse on road accidents was also determined.

MATERIALS AND METHODS

Study Design

This study was conducted over a 4-month period (August 2017 to November, 2017) in Bariga and Gbagada New-garage motor parks of Lagos State, Nigeria. Ethical clearance for the study was obtained from the Health Research Ethics Committee of the University of Lagos Teaching Hospital (LUTH). In addition, a written informed consent of the respondents was sought before the interview. Permission was also requested and obtained from the National Union of Road Transport Workers (NURTW), Lagos State before the study was conducted.

Sample and Data Collection

Urine sample from each volunteered participant was collected using sterile sample bottles. The urine samples were tested using 10 Panel Generic Multi Drug Urine Dip Card Test Kit. The kit tested for the presence of ten psychoactive drugs (methamphetamine (METH), cocaine (COC), oxycodone (OXY), morphine (MOP), amphetamine (AMP), methadone (MTD) and barbiturates (BAR), marijuana (THC), Benzodiazepines (BZO) and phencyclidine (PCP)). The tip of the kit was dipped into the urine sample and allowed to wait for minimum of 10 seconds. The kit had a positive and negative panel for each drug. Each sample that tested positive to a particular drug would indicate a red line while negative showed two lines.

Each driver in the various motor parks was interviewed until the desired sample size was attained. They responded to a sociodemographics and a semi-structured *pro forma*, which sought information on the type of substance commonly used, reasons for their use, usage frequency, related accident history, and medical history.

Data Analysis

The data collected through the questionnaire were statistically analyzed using Statistically Package for the Social Sciences (SPSS) for Windows version 20.0 software. Frequency counts and percentage were generated for all variables, and statistical tests of significance were performed with correlation and regression analysis. Significance was fixed at $P < 0.05$ and highly significant if $P < 0.01$

RESULTS

A total of 185 participants responded to the administered questionnaire and they volunteered their urine for the multi-drug test (psychoactive drugs test). The sociodemographic status of the participants is represented in Table 1. Most of the participants were above 40 years old which account for 57% of the participants. Only four (4) participants were within age range 16-25 years. All the participants were male and 98.9 % are Nigerians. 131 (70.8%) participants were married, thirty-four (18.4%) were single while twenty (10.8%) are separated.

Most of the participants are Yoruba (84.3%), 12.4% are Igbo while 0.5% are Hausa. Only 2.7% of the participants responded to category of "others" as their tribe. There was a close margin between the participants' religion of which 49.2% were Christians while 50.2% practiced Islam. On report of the participants' level of education, 78.4% discontinued their education after secondary school level while 13% proceeded to tertiary institutions, 7.6% attained primary level only while 1.1% had no basic education. The status on the information relating to participants' vehicle and driving is represented in Table 2. Among the participants, 44.3% of them used buses for their commercial activities, 31% used cars, and 18.9% used tricycles while only 5.4% of the participants used motorcycles. The driving experience report showed that 22.2% had above 20 years while only 13% had between 16-20 years of experience in driving. 31.9% had between 6 and 10 years of experience and this account for the highest in the group. Most of the vehicles were self-owned which represented 53% of the participants, 32.9% responded to have rented the vehicles while 15.1% of the vehicles were hired-purchased. On their history of accident, 10.8% reported to have previously had accident twice while 9.7% responded to have had accident more than twice. Majority (69.2%) of the participants reported not to have been previously involved in any form of accident while only 3.8% have had accident once in their history of driving.

The Participants status on different substance consumption is presented in Figure 1. Alcohol consumption was reported by 75.1% of the participants while 24.9% reported not to be alcohol consumer

Table 1: Sociodemographic status of the participants

Variables		Number of Participants	Percentage (%)
Age Range (years)	16 – 25	4	2.2
	26 - 35	45	24.3
	36 - 40	30	16.2
	Above 40	106	57.3
Gender	Male	185	100
	Female	0	0
Marital Status	Single	34	18.4
	Married	131	70.8
	Separated	20	10.8
Nationality	Nigerian	183	98.9
	Non-Nigeria	2	1.1
Tribe	Yoruba	156	84.3
	Igbo	23	12.4
	Hausa	1	0.5
	Others	5	2.7
Religion	Christianity	91	49.2
	Islam	94	50.8
Education	Tertiary	24	13
	Secondary	145	78.4
	Primary	14	7.6
	None	2	1.1

Table 2: Status on participants' information relating to vehicle and driving.

Variables		**Number of Participants**	**Percentage (%)**
Type of Vehicle	Car	58	31.4
	Bus	82	44.3
	Tricycle	35	18.9
	Motorcycle	10	5.4
Driving Experience	1 - 5years	30	16.2
	6 - 10years	59	31.9
	11 - 15years	31	16.8
	16 - 20years	24	13
	Above 20years	41	22.2
Ownership	Self-owned	98	53
	Hired purchased	28	15.1
	Rented	59	31.9
Accident History	Once	7	3.8
	Twice	20	10.8
	Thrice	12	6.5
	More	18	9.7
	Nil	128	69.2

Out of the alcohol consumers, 48.6% responded to drinking them occasionally, 27% consume it on a daily basis while 24% reported to drinking them on a weekly basis. Only 2.2% reported to drink and drive

while 97.8% responded not to drink before driving. Of the participants, 44.3% was reported not to consume other stimulants while 55.7% had taken other stimulants in recent times. Only 3.8% had abused prescription drugs in recently while 96.8% of the participants reported to have never abused prescription drugs. 7.6% of participants who responded to have abused psychoactive substances reported to have been previously involved in at least one illegal activity while 92.4% of them had no record of being involved in carrying out illegal activities.

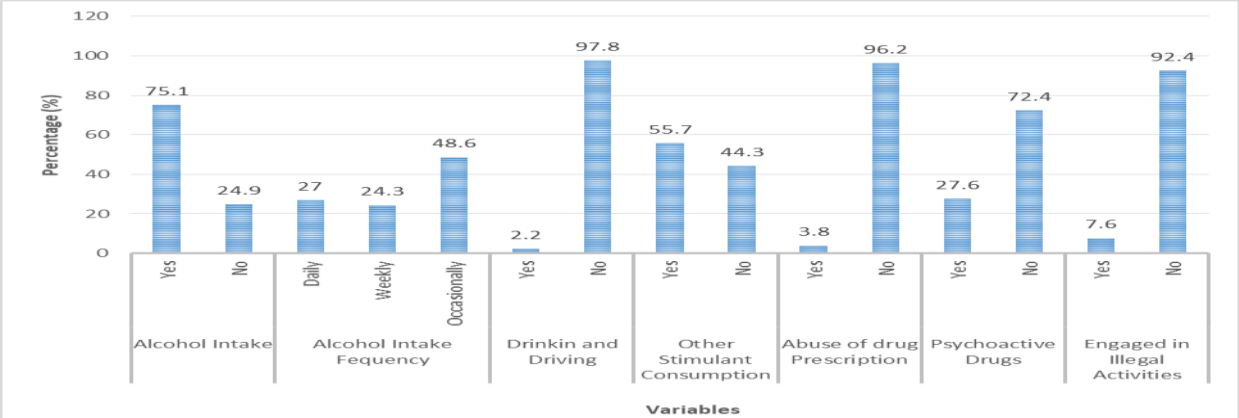

Figure 1: Participants Status on Substance Consumptions

Using the 10 Panel Generic Multi Drug Urine Dip Card Test Kit to test for the presence of psychoactive drugs in the participants' urine samples, two individuals tested positive to phencyclidine (PCP) and benzodiazepines (BZO) respectively while 47 participants tested positive to marijuana (THC). No participant tested positive to methamphetamine (METH), cocaine (COC), oxycodone (OXY), morphine (MOP), amphetamine (AMP), methadone (MTD) and barbiturates (BAR) (Figure 2). In total, 51 (24.6%) participants tested positive to at least one psychoactive drug while 134 (76.4%) tested negative to all the drugs as shown in figure 2

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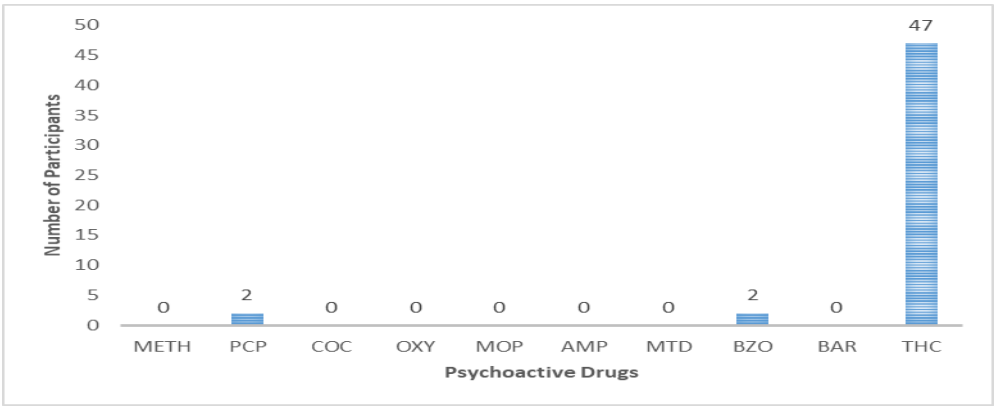

Figure 2: Some of the participants who tested positive to some of the psychoactive drugs.

Legend: METH – Methamphetamine AMP – Amphetamine
PCP – Phencyclidine MTD – Methadone
COC – Cocaine BZO – Benzodiazepines
OXY – Oxycodone BAR – Barbiturates
MOP – Morphine THC – Marijuana

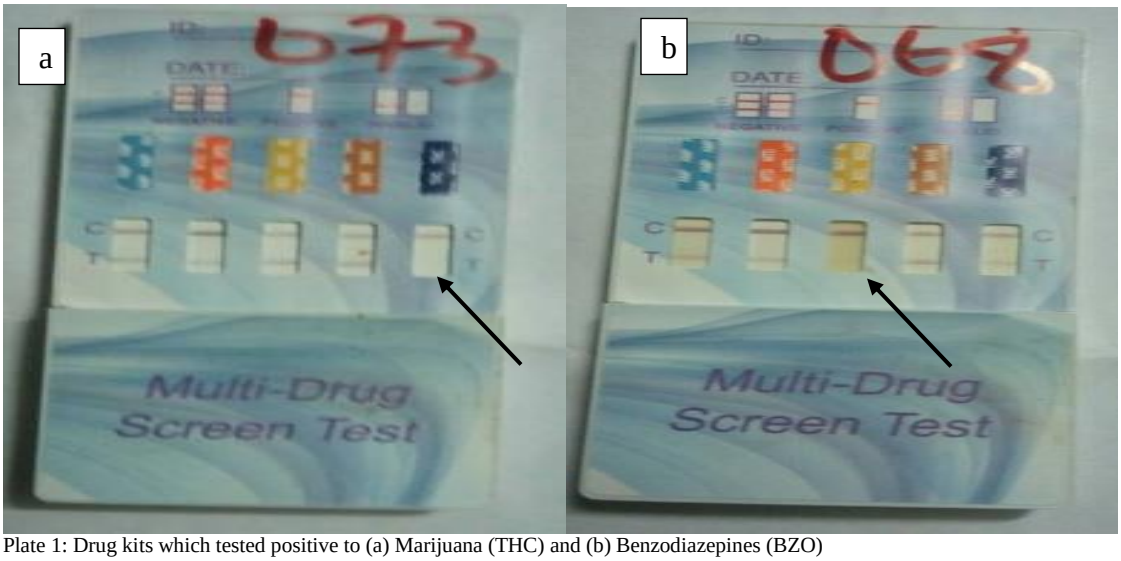

Plate 1: Drug kits which tested positive to (a) Marijuana (THC) and (b) Benzodiazepines (BZO)

About half (47%) of the participants reported to taking respective substances to gain more energy which account for the highest in the group while only 1.1% used them to enhance sleep. 35.1% took the substances just for pleasure, 6.5% reportedly used them to enhance clear thinking, 3.2% used them to increase sex drive, and 2.7% used them to alleviate distress and due to peer influence. Only 1.6% used them because of family issues. This report is represented in Figure 3.

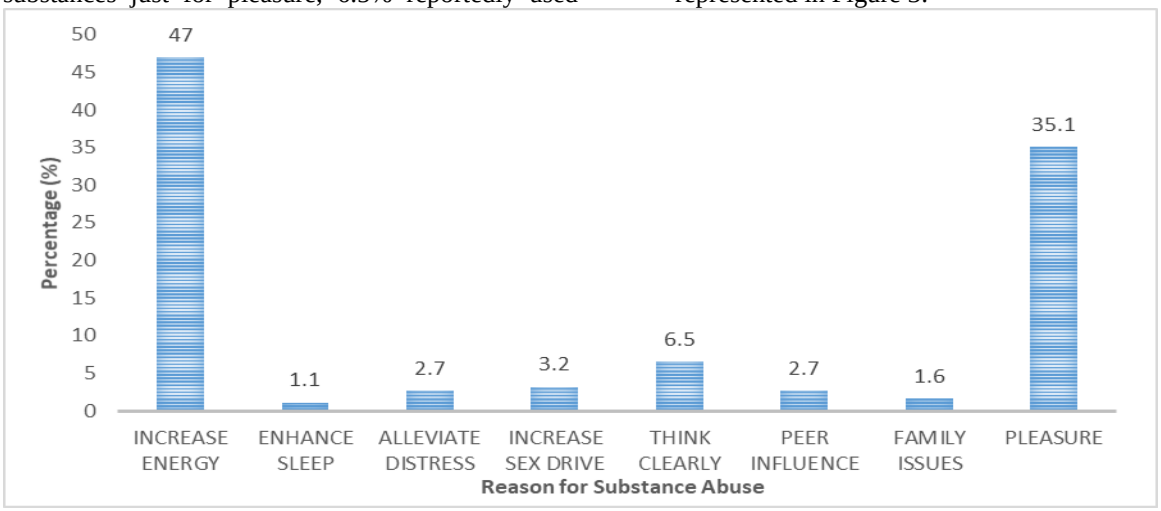

Figure 3: Participant's reasons for taking psychoactive substances

Correlation between Accident History, Reasons for Substance use and other variables are shown In Table 3. There is no significant association between the age of participants and accident history ($P \geq 0.05$), but there is a strong significance between their ages and reasons for substance abuse ($P \leq 0.01$). Statistical difference was revealed between reasons for substance abuse, marital status and psychoactive substance abuse ($P \leq 0.05$) while there is a strong significance between alcohol intake, alcohol intake frequency and accident history ($P \leq 0.01$). Meanwhile, there is no statistical difference between reasons for using the substances and nationality, religion, tribe, type of education, drinking and driving, other stimulant consumption, abuse of prescription drugs and engagement in illegal activities ($P \geq 0.05$).

There is statistical difference between accident history and religion, alcohol intake, drinking and driving, and reasons for substance abuse ($P \leq 0.05$), but no significant difference for marital status, nationality, tribe, type of education, alcohol intake frequency, other stimulants consumption, abuse of
prescription drugs, psychoactive substance and engagement in illegal activities ($P \geq 0.05$).

Table 3: Correlation between Accident History, Reasons for Substance abuse and other variables

Variables	Accident History		Reasons for Substance abuse	
	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)
Age of Participants	0.106	0.153	0.209**	0.004
Gender	.b	.	.b	.
Marital Status	0.093	0.208	0.184*	0.012
Nationality	0.061	0.408	0.127	0.085
Religion	0.163*	0.027	0.052	0.484
Tribe	-0.138	0.062	-0.097	0.19
Type of education	0.016	0.827	0.07	0.342
Alcohol Intake	0.170*	0.021	0.222**	0.002
Alcohol Intake Frequency	0.065	0.382	0.212**	0.004
Drinking and Driving	0.161*	0.029	0.098	0.183
Other Stimulant Consumption	0.123	0.094	0.091	0.219
Abuse of Drug prescription	0.026	0.73	0.069	0.35
Psychoactive Substance	-0.079	0.285	-0.167*	0.023
Engaged in Illegal Activities	0.003	0.97	-0.067	0.368
Accident History	1	-	0.247**	0.001
Reason for Taking Substances	0.247**	0.001	1	-

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). b. Cannot be computed because at least one of the variables is constant. Sig- significant level

DISCUSSION

This study revealed the prevalence of substance abuse among drivers of commercial vehicles in Bariga and Gbagada motor parks of Lagos Metropolis. A similar study carried out by Abiona *et al* (2006), among drivers of commercial vehicles also showed a high prevalence (67.3%) of psychoactive substance use among them, although our study showed a higher prevalence. Aniebu and Okonkwo (2008), in a similar study among taxi drivers in Enugu, Nigeria reported a very high prevalence (85.4%) of psychoactive substance use, the commonest of which was alcohol, reportedly used by virtually all drivers that used other drugs. Drivers are a special group that deserves serious attention with regards to alcohol control. The role of substance abuse in road accidents and other health and social consequences emphasize the strategic position occupied by drivers of commercial vehicles in substance control.

In this study, all participants were males. A similar report had been documented by other studies conducted among commercial vehicle drivers in Nigeria (Makanjuola, *et al*., 2007; Lasebikan and Baiyewu, 2009). Empirical evidence by Okpataku (2016), further shows that long distance commercial driving in Nigeria is essentially dominated by males, partly resulting from economic reasons. Most men engage in income generating activities such as commercial driving for the benefit of themselves and their families. This is more likely in this part of the country where commercial driving has evolved and is perceived as a man's job. Our results shows that majority of the participants were above 40 years old. They were found to constitute a significant higher proportion of current users of alcohol, which was similarly documented in the studies carried out by Makanjuola, *et al*., (2007) and UNODC (2011). To be licensed to drive, one ought to meet some conditions which include a minimum age of 18 years (Okpataku, 2016). The driver needs to gain some experience on driving and acquire the necessary resources such as a suitable vehicle before engaging in commercial driving. This may partly account for why young people in their second decade of life were largely not found among drivers in this study. In addition, drivers in their seventh decade were expected to retire from active commercial driving due to the effects of aging which makes it difficult for the elderly to continue this energy-demanding and competitive job. This leaves drivers who are mostly in their third to fifth decade being the majority of those involved in this pattern of driving.Most of the subjects were married and had no post-secondary

school education. This finding is similar to studies done in other parts of this country (Lasebikan and Baiyewu, 2009; Araoye, 200). Commercial driving in Nigeria is done as a means of earning a living, and marriage is often accompanied by increased financial obligations which could partly account for this finding. The unmarried drivers were more likely to have been younger than their married counterparts, and young people have been found globally to abuse substances more (UNODC, 2011). Marriage confers dignity and attracts some respect in the culture of the study population. It is possible that the older drivers most of whom were married refrained from cannabis use due to cultural perceptions of their marital status or because older people are not likely to experiment with such substances compared to younger people. But this is difficult to determine as this study was cross-sectional. Although, there is no correlation between levels of education and history of accident, it has been suggested by Adekoya *et al* (2011) that transport worker with low level of education tends to drive under the influence of alcohol. Since this study found a correlation between alcohol intake and reckless driving, low level of education could have indirect effect on road accidents.

There was a significant statistical difference between use of psychoactive drugs and reasons for substance use. This validates the findings of Alti and Aliyu (2008) where keeping awake, and suppression of fatigue were the identified factors influencing psychoactive substance use. Also, there is a strong statistical significance between accident history and reasons for substances abuse. Since majority of the participants responded to use of the substance to be more energized, this study suggests the hyperactivity effect of the substances relates to their accident history. It is related to the 2008 European Transport Safety Council report on drink-driving in commercial transport which stated that, the majority of road transport deaths are due to harmful and hazardous agents and at least 20% of all road deaths in Europe are alcohol related (ETSC, 2008), as well as, the 2009 Austrian and 2010 Switzerland overview of the studies in drivers suspected of driving under the influence of drugs and alcohol (Keller, *et al*., 2009; Senna *et al*., 2010). The result of this study also revealed that an overwhelming majority of the respondents engage in other substance consumption. Findings based on the type of substances use showed that the commercial drivers abused substances such as energy drinks, alcohol, coffee, kola-nut but this report showed no correlation between consumption of these stimulants and road accidents.

CONCLUSION

This study has demonstrated that a substantial fraction of commercial drivers operating in major motor parks in Bariga and Gbagada of Lagos State use psychoactive substances as diagnosed by the drug kit. From the observation during data collection, the drivers consumed various psychoactive substances throughout the day. Different alcoholic beverages are openly sold at the motor-parks while illicit substances like marijuana are readily available and sold to known customers on demand. All these may explain the cause of frequent fights, violent conducts, various crimes, and accident which are common occurrences in Nigerian motor-parks. Limitation to this study was that some respondents were usually in a hurry and busy trying to get their bookings at the various motor parks. This might have affected their responses to the questions asked.

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