



# Use of cigarette and marijuana among long distance commercial drivers in Akure, Ondo State, Nigeria

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## ABSTRACT

**Objective:** Motorized automobile accident or simply auto accident is a substantial cause of ailments, as well as death in our neighborhood and driving under the influence of various agents affecting the central nervous system (CNS) such as cigarette and marijuana have been associated with the occurrence of auto accidents as most users believe these agents will help control probable sleep while driving and as well enhance their driving. This study is therefore designed to examine the use of cigarette and marijuana among long distance commercial drivers in the course of driving in Akure, Ondo State, Nigeria. **Materials and Methods:** An open-ended structured questionnaire was administered consecutively to 405 consenting male long distance commercial drivers by interviewer in each of the selected parks in Akure. The cross-sectional survey questionnaire comprised sections on socio-demographic data, driving experience, ocular history, auto-accident history, as well as information, about the use of cigarette and marijuana. **Results:** The mean age (standard deviation [SD]) was 38.4 (9.5) years, while the mean (SD) driving duration was 8.1 (5.8) years, and mean (SD) distance covered 285.3 (197.4) km. Totally, 144 respondents (35.6%) had primary school leaving certificate, while 103 respondents (25.4%) had secondary school leaving certificate with 22 respondents (5.4%) having no form of western education. Totally, 205 respondents (50.6%) trained at a registered driving school with mean (SD) training period of 2.4 (3.8) months. Totally, 155 drivers (38.3%) had been involved in auto accident in the past 5 years. The prevalence of cigarette/snuff and marijuana use shortly before or while driving was 11.9% and 2.2%, respectively. **Conclusion:** Use of cigarette, snuff, and marijuana is very rampant among long distance commercial drivers in Akure, Nigeria. Thus, more education on the possible risks/hazards of these conducts is required for these drivers alongside the entire populace so as ascertain safer roads in the country.

**KEY WORDS:** Forensic sciences, forensic toxicology, auto-accident, cigarette, snuff, marijuana

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## INTRODUCTION

Driving is the controlled operation and movement of a vehicle such as a car, carriage, truck, or bus. In general, drivers are subject to the laws of the jurisdiction in which they are driving [1]. Long distance drivers travel between many cities and/or regions of a country. Mostly, long distance drivers in Nigeria, drive under more pressure than those plying their trade within the various towns and cities. Although, the majority of these drivers mostly deliver certain agreed amount of money to the owner every day or every week, a sizeable number of these drivers own the vehicles themselves [2]. Due to the nature of their job, mainly involving multiple trips with little or no time of rest, quite a number of these drivers believe that augmenting or enhancing their strength with the use of certain substances such as cigarette, snuff, marijuana, among others, will help relieve them of the stress, increasing their performance, ensuring sleep is either delayed or halted as long as probable. Meanwhile, the majority of these substances affect their central nervous system in the long run, impairing their driving abilities and subsequently

leaving them and their passengers at a tremendous risk of auto-accident, mainly as a result of the use of these substances [3-6]. This study is therefore designed to examine the use of cigarette, snuff, and marijuana among long distance commercial drivers in the course of driving in Akure, Ondo State, Nigeria.

## MATERIALS AND METHODS

### Study Site/Subject Selection/Study Design

The cross-sectional survey study was conducted at various main long distance commercial motor parks in Akure Town, Ondo State, Nigeria. Locations were selected based on availability of the targeted population. Participation was voluntary, and informed consent was obtained by participants' signing the consent form attached to the questionnaire. Names of participants were not included in the information requested. A structured questionnaire was administered consecutively to 405 consenting long distance commercial drivers by interviewer in each of the selected parks. Simple random sampling was used to select randomly the required number of participants

till the required number of willing participants is recruited. The questionnaire contained sections including socio-demographic data, driving experience, ocular history, auto-accident history, as well as information about the use of cigarette/snuff and marijuana, and their effects on driving. 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 were generated for all variables, and statistical tests of significance were performed with the chi-square test. Significance was fixed at  $P < 0.05$  and highly significant if  $P < 0.01$ .

### Sample Size

Sample size calculation was determined using 95% response rate, 0.05 precision and prevalence rate. A 2011 study on driving under influence among long distance commercial drivers in Ilorin, Nigeria, revealed that the prevalence of daily alcohol consumption, cigarette smoking while driving, and eating kola-nut while driving were 11.5%, 25.8%, and 48.4%, respectively. It is on this premise that our sample size was calculated, using the highest percentage [7]. The formula for sample size, when population is more than 1000, is:  $n = Z^2PQ/d^2$  [8,9].

$$n = Z^2PQ/d^2$$

Where:

$n$  = minimum sample size,

$Z$  = standard normal deviation at 95% confidence interval which is 1.96,

$d$  = degree of precision (taken as 0.05),

$P$  = proportion of the target population or prevalence (estimated at 48.4% which is  $48.4/100 = 0.484$ ),

$Q$  = alternate proportion ( $1-P$ ) which is  $1-0.484 = 0.516$

$$n = \frac{(1.96)^2(0.484)(0.516)}{(0.05)^2} = 384$$

## RESULTS

### Socio-demographic Data

A total of 405 consenting male long distance commercial drivers participated in the study. Totally, 242 (59.8%) of the drivers were 40 years and below while 120 (29.6%) were between 41 and 50 years and 43 (10.6%) being more than 50 years of age. The mean age (standard deviation [SD]) was 38.4 (9.5) years. Totally, 317 (78.3%) driver are married, with eighty-one (20.0%) being single, while others are either divorced or widowed.

### Driving Experience and Educational Status

A total of 130 (32.1%) drivers had 1 - 5 years driving experience, while 240 (59.3%) drivers had 6 - 20 years driving experience, with the mean (SD) driving duration being 8.1 (5.8) years. The mean (SD) distance covered by the drivers was 285.3 (197.4) km. Totally, 205 (50.6%) drivers had ever trained at a registered driving school with a mean (SD) training period of 2.4 (3.8) months. Fifty-seven (14.1%) drivers were travelling

between Akure and Lagos while 47 (11.6%) drivers travel between Akure and Abuja with Akure to Ibadan being travelled by thirty (7.4%) of the drivers, making these three routes the most commonly travelled routes. Totally, 144 (35.6%) drivers had primary school leaving certificate while 103 (25.4%) drivers had secondary school leaving certificate, 86 (21.2%) drivers having NCE/OND/HND, which are national certificate in education, ordinary national diploma and higher national diploma respectively and 22 (5.4%) drivers having no form of western education.

### Ocular History

Only 15 (3.7%) drivers reported they currently have eye defect, with the majority of them clinically diagnosed of short-sightedness, where close objects are seen clearly, but distant objects appear blurred. Only 9 (2.2%) drivers wear eye glasses prescribed by eye physician to aid driving.

### Type of Vehicle and Involvement in Auto Accident

A total of 264 (65.2%) drive bus, 69 (17.0%) drive cars, and 66 (16.3%) drive lorry. A massive 232 (57.3%) had ever previously been involved in auto accident while 155 (38.3%) had been involved in auto accident in the past 5 years, with 66 (16.3%) of them involved just once while 46 (11.4%) had been involved twice. Totally, 37 (9.1%), 29 (7.2%), 28 (6.9%), 17 (4.2%), and 8 (2.0%) auto accidents were said to have been due to bad road, faulty vehicle, driver error, bad weather, and excessive speed, respectively.

### Use of Cigarette/Snuff and Marijuana

Totally, 176 (43.5%) of the drivers smoke a cigarette or use snuff habitually while only 48 (11.9%) use snuff or smoke cigarette shortly before or during driving. 26 (6.4%) of the drivers use the snuff or cigarette on a daily basis, mainly taking unquantifiable but reported the small quantity of snuff and at least a stick of cigarette. The main reasons given for the use of snuff or smoking cigarette include use for refreshment/recreation, keeping their body system at alert and occasionally for just social purposes.

Totally, 35 (8.6%) of the drivers use marijuana habitually while only 9 (2.2%) use marijuana shortly before or during driving. The main reasons given for the use of marijuana include use for fun/refreshment/recreation, for body activeness, and occasionally for just social purposes.

## DISCUSSION

This study found that substantial 59.3% of the drivers had 6 - 20 years driving experience, while 32.1% drivers had 1 - 5 years driving experience, showing that majority of the drivers are greatly experienced in driving. 35.6% drivers had primary school leaving certificate while one hundred and three 25.4% drivers had secondary school leaving certificate, with 21.2% drivers having NCE/OND/HND, which are national certificate in education, ordinary national diploma and higher

national diploma, respectively and 5.4% drivers having no form of western education. About 3.7% drivers reported that they currently have eye defect, with the majority of them clinically diagnosed of short-sightedness but only 2.2% drivers wear eye glasses prescribed by eye physician to aid driving, which means that only a few drivers having problems with their eyes and this could be as a result of fact that a vast majority of drivers (59.8%) are 40 years of age or below, with the mean age of the entire participants being 38.4 years. A massive 38.3% had been involved in an auto accident in the past 5 years, with the majority reported to have been involved just once. The bad road was said to be the most common causes of the auto accidents. These findings are slightly in contrast to that reported by a 2011 study, on driving under influence among long distance commercial drivers in Ilorin, Nigeria, which reported that 42.1% of those interviewed had no form of western education while 37.3% had primary education. About 20.8% had been involved in motor vehicle accidents over the previous 10 years [7]. Furthermore, another 2012 study on psycho-spatial predictors of hazardous drinking among motor drivers in Ibadan, Nigeria, reported that 19.5% of the commercial drivers are having less than high school of education, while only 6.2% of the private drivers reported a similar level of education and concluded that psychological, environmental, and demographic variables are important in understanding hazardous drinking among drivers and should be incorporated into intervention for reducing drivers' hazardous drinking [10].

This study also found that 43.5% of the drivers smoke cigarette or use snuff habitually, while only 11.9% of them use snuff or smoke cigarette shortly before or during driving, with 6.4% of the drivers using the snuff or smoking the cigarette on daily basis, mainly taking unquantifiable but reported small quantity of snuff and at least a stick of cigarette. The main reasons given for the use of snuff or smoking cigarette include use for refreshment/recreation, keeping their body system at alert and occasionally for just social purposes. The finding in this study slightly varies from that reported by a 2011 study on driving under influence among long distance commercial drivers in Ilorin, Nigeria, which reported the prevalence of cigarette smoking while driving to be 25.8% and concluded that there is a need to enforce existing laws, educate the drivers and the general public on the potential dangers of this habit, and conduct further research into road safety in Nigeria [7]. Smoking generally has been discouraged by Nigeria's federal ministry of health through various inscriptions on cigarette packs including caption such as "Nigeria's ministry of health warns that smokers are liable to die young." Smoking cigarette/use of snuff has been found to be associated with risky driving behaviors, with the relationship between the use of snuff/cigarette smoke shortly before/during driving and involvement in auto-accident in the past 5 years was found to be significant.

This study also found that 8.6% of the drivers use marijuana habitually while only 2.2% use marijuana shortly before or during driving. The main reasons given for the use of marijuana include use for fun/refreshment/recreation, for body activeness, and occasionally for just social purposes. This shows that only a few of the drivers use marijuana. This

**Table 1: Relationship between use of cigarette/snuff and marijuana eating shortly before/during driving with involvement in auto accident in the past 5 years**

Use of snuff/cigarette smoke/marijuana shortly before/during driving	Involvement in auto accident in the past 5 years		
	No	Yes	Total
Use of snuff/cigarette smoke shortly before/during driving			
No	234	123	357
Yes	16	32	48
Total	250	155	405
$\chi^2=41.579, P=0.039$			
Use of marijuana shortly before/during driving			
No	243	153	396
Yes	7	2	9
Total	250	155	405
$\chi^2=37.002, P=0.002$			

The relationship between the use of snuff/cigarette smoking and use of marijuana shortly before or during driving with involvement in an auto accident in the past 5 years were statistically significant at  $P < 0.05$

finding varies from a 2014 study on psychoactive substance use among tanker drivers in Lagos, Nigeria reported a lifetime use prevalence of tobacco to be 69.8% and concluded that increased and sustained education programs on drugs, in addition to other measures, should be targeted toward tanker drivers in Nigeria [11].

Our findings are also similar to a 2004 Canadian study that compared crash rates in cannabis users, which found a 2.61% rate, suggesting that the decision to drive while intoxicated may predict poor judgment and unsafe driving habits [12]. It is also 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 [13], 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 which reported alcohol detected to be 30% and 35%, respectively [14,15]. Use of marijuana has been found to be associated with risky driving behaviors, with the relationship between the use of marijuana shortly before/during driving and involvement in auto-accident in the past 5 years found to be significant.

**CONCLUSION**

The use of the cigarette, snuff, and marijuana is very rampant among long distance commercial drivers in Akure, Nigeria. Thus, more education on the possible risks/hazards of these conducts is required for these drivers alongside the entire populace so as ascertain safer roads in the country.

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