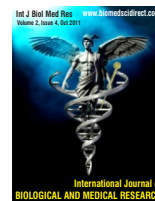




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Original Article

Driving under influence among long distance commercial drivers in Ilorin, Nigeria.

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ABSTRACT

Aims: Motor vehicle accident (MVA) is a significant cause of mortality and morbidity in our environment, and driving under the influence of central nervous system (CNS) active agents such as alcohol has been implicated in the occurrence of MVAs. This study was therefore aimed at investigating the use of CNS active drugs, specifically; alcohol, kola-nut and cigarette, while driving, among the long distance drivers in Ilorin, Nigeria. **Methods:** Consecutive and consenting commercial intercity vehicle drivers were interviewed face to face at the five major motor parks in the city of Ilorin, Nigeria. A structured questionnaire was used to collect information on bio-demographic data, driving history, history and cause of MVA in the previous 10 years and use of CNS active drugs such as alcohol, kola-nut and cigarette smoking. **Results:** Out of 405 listed drivers, 399 (98.5%) were interviewed. All were males. The mean age (sd) was 44.7 (10.1) years. One hundred and sixty-eight (42.1%) had no form of western education, while 149 (37.3%) had primary education. Mean (sd) duration of driving was 18.2 (6.6) years. Eighty-three drivers (20.8%) had been involved in MVAs over the previous 10 years. 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. Those engaged in eating kola-nut while driving were twice as likely to have been involved in MVAs in the previous 10 years (OR 1.95, 95% CI: 1.16, 3.31). **Conclusion:** Alcohol drinking, cigarette smoking, and kola-nut eating while driving is common among commercial intercity vehicle drivers in Ilorin, Nigeria. There is need to enforce existing laws, educate the drivers and the general public on the potential dangers of this habits, and conduct further research into road safety in Nigeria.

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1. Introduction

Long distance drivers are usually under more stress than their counterparts plying intra-city roads. In Nigeria, majority of them are self employed and owners of the vehicles they drive, while some drivers make daily or weekly monetary delivery to the owners of the vehicle they drive. They face the highway on top speeds on a daily basis, sometimes making more than one trip on their usual route. Night driving is also common. Consequently, in order to reduce or minimize this stress, some

drivers believe that the use of substances such as alcohol, cigarette, kola nut, marijuana, and other central nervous system (CNS) agents such as amphetamines will significantly improve their performance and keep sleep at bay for as long as possible. These substances are also frequently taken for social reasons. Ability of these substances to affect the CNS will impair driving performance, and a high possibility of contributing to the occurrence of motor vehicle accidents (MVAs). Worldwide, the number of people killed in MVAs each year is estimated at almost 1.2 million, while the number injured could be as high as 50 million. Causes of MVAs are varied and multi-factorial and it is likely that use of psychoactive substances is likely to play a major role. Studies in Nigeria and other countries have shown a high prevalence of use of psychoactive substances, among various categories of drivers. The use of these substances has been

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associated with the occurrence of MVAs. While the relationship between alcohol use and driving have been studied in different part of Nigeria, literature on the use of other stimulants such as kola-nut and cigarette smoking are sparse. This study was therefore aimed at investigating the use of CNS active drugs, specifically; alcohol, kola-nut and cigarette smoking while driving, among the long distance drivers in Ilorin, Nigeria, and to correlate it with their accident records.

2. Materials and methods

This cross sectional study was carried out in Ilorin, the capital of Kwara state, Nigeria. The participants were the commercial intercity vehicle drivers in the five major motor parks in the city. The study was cleared by the Ethical Committee of the University of Ilorin Teaching Hospital (UIH), and permission was also obtained from the transport unions (National Union of Road Transport Workers (NURTW) and Road Transport Employers Association of Nigeria (RTEAN) of each motor park. Informed consent was also obtained from each of the drivers.

Structured questionnaire was administered by face-to-face interview at the motor parks to obtain information about biodata as well as alcohol, cigarette smoking and kola-nut use. Details about self reported MVAs in the previos 10 years were also obtained.

The data collected on the questionnaire were checked manually for possible errors and then entered and analyzed on a microcomputer using the Statistical Package for Social Sciences (SPSS) 12.0.1 software package. Frequency counts were generated for variables and statistical tests of significance was performed with chi square test.

A p - value of <0.05 was accepted as indicative of statistical significance.

3. Results

Out of a total of 405 drivers, 399 consecutive and consenting drivers participated in the study (Response rate = 98.5%). All were males. Two hundred and ninety one (72.9%) drivers were 50 years and below, while 26 (6.5%) were over 60 years of age. The mean age (sd) was 44.7 (10.1) years.

3.1. Education and driving experience

One hundred and sixty-eight (42.1%) had no form of western education, while 149 (37.3%) had primary education. Sixty-eight (17.0%) and 14 (3.5%) had secondary and post secondary educations respectively. Two hundred and thirty-seven (59.4%) had been driving for more than 20 years, while 26 (6.5%) had 1- 5 years driving experience. Mean (sd) duration of driving was 18.2 (6.6)years, with 132 (33.3%) of the respondents driving 6 or more hours per day

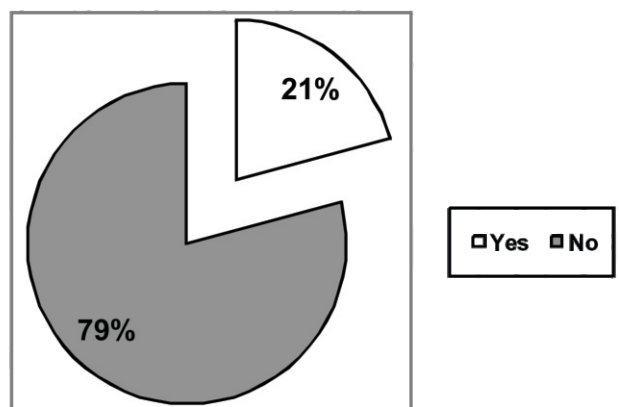
3.2. Type of vehicle

Two hundred and nine (52.4%) drive cars; 166 (41.6%) buses; 21 (5.3%) lorries and 3 (0.8%) were drivers of heavy duty trailers. Two hundred and twenty-eight (57.1%) were owners of the vehicle they drive, while 171 (42.9%) are hired drivers.

3.3. Involvement in MVAs in the previous 10 years

This is shown in Figure 1. Eighty-three drivers (20.8%) had been involved in MVAs over the previous 10 years. Seventeen (20.5%) of those who have had MVAs had been involved more than once. Forty-four (42.7%), 22 (21.4%), 17 (16.5%), and 12 (11.6%) incidents were said to have been due to faulty vehicles, driver error, bad road, and excessive speeding respectively. other causes include bad weather 4 (3.9%) and pedestrian fault 3 (2.9%).

Figure 1: Involvement in RTAs in the previous 10 years



3.4. Use of agents affecting the Central Nervous System (CNS)

Table 1. shows the use of agents affecting the CNS among the drivers interviewed. Ninety-nine (24.8%) drivers regularly take both alcohol and cigarette, while 58 (14.5%) of the respondents indulge in all the three. Forty-six drivers (11.5%) were involved in daily consumption of alcoholic drinks, and 50 (12.5%) smokers take more than six sticks per day. Eighty-five smokers do not smoke while driving, while 18 do so. Reasons given for the use of these agent were majorly to keep alert, and sometimes for social reasons. Types of alcohol consumed include; beer, gin, palm wine, and alcoholic herbs.

Table 1: Use of agents affecting the CNS.

Agents	Frequency	Percentage (%)
Alcohol	180	45.1
Cigarette	103	25.8
Kola nut	193	48.4

The associations between alcohol use, and smoking while driving with involvement in RTA were not statistically significant, (p> 0.05) however, the relationship between kola nut eating while driving and involvement in RTA was statistically significant. (p<0.05) Table 2.

Table 2: Relationship between Alcohol use, smoking, and kola nut eating while driving with Involvement in MVAs in the previous 10 years.

Involvement in RTA in the previous 10 years				
	Yes	No	Total	
Daily alcohol consumption				
Yes	27	19	46	
No	56	297	353	
Total	83	316	399	
$\chi^2 = 45.31786, p\text{-value} = 1.6751$				
Smoking while driving				
Yes	18	85	103	
No	65	231	296	
Total	83	316	399	
$\chi^2 = 0.932429, p\text{-value} = 0.3342$				
Kola-nut eating while				
Yes	51	142	193	
No	32	174	206	
Total	83	316	399	
OR 1.95 (95% CI 1.16, 3.31), p-value = 0.0073				

4. Discussion

4.1. Alcohol use

This study found that a significant proportion of commercial intercity vehicle drivers in Ilorin, Nigeria, were involved in regular consumption of alcohol. This is similar to findings in other parts of Nigeria. These drinks in the form of beer, gin, palm-wine, is often freely available during most social occasions, and personal observations have shown that is also available in some motor parks, where it is frequently prepared as a herbal concoction to cure a wide variety of ailments. Alcohol is a CNS depressant and is capable of causing impairment of mental and motor functions, both of which are critical to the performance of a driver. It affects judgment of speed, distance, and risk. It can also cause diplopia and blurring of vision. The final pathway of all these effects may be a road traffic accident (RTA), which is often very serious. Trading in alcohol near the vicinity of motor parks is banned, but this needs better vigilance and enforcement to limit the availability of alcohol near on-duty drivers.

An Australian study found that the risk of crash involvement is about two times greater at a Blood Alcohol Concentration (BAC) of 0.05g/dl than a BAC of zero, and legal limits of BAC has been set at 0.05g/dl in most countries. However, a survey of blood alcohol levels of drivers involved in RTA revealed that a high percentage of drivers in Nigeria are driving under the influence of alcohol. Similarly, from an investigation conducted in low-income countries, it emerged that alcohol was present in between 33% and 69% of fatally injured drivers, and in between 8% and 29% of drivers involved in crashes who were not fatally injured. Consequently, driving under the influence of alcohol is a punishable offence in most countries, Nigeria inclusive.

This study did not find a statistically significant relationship between self reported history of alcohol consumption and involvement in MVAs in the previous 10 years. This is contrast to findings by Falola who studied Nigerian Army drivers in southern Nigeria, and Di Bartolomeo et al who found that each single unit of acute alcohol consumption increases the risk of road traffic crashes (RTCs) more than two times (OR 2.25). The contrast findings might be due to the different methodologies employed as data in this study was collected by face to face interview (alcohol use and history of MVAs). This is a limitation in this study as it is not unlikely that some drivers might have under-reported their history of both alcohol use and MVAs. Also, none of the drivers involved in MVAs in the previous 10 years, declared driving under the influence of alcohol as a cause of MVA. Despite this, there is need to enforce anti-alcohol laws within the vicinity of motor parks and educate the drivers on the inherent dangers in drunk driving.

4.2. Kola-nut use

Kola-nut is widely consumed for traditional and social reasons in Nigeria, as well as for its stimulant effect, therefore it is not surprising that almost half (48.4%) of the drivers consumed it while driving. It contains caffeine, a CNS stimulant, capable of causing insomnia. This property is made use of by some drivers. The adverse effects of such sleep deprivation include fatigue, headaches, and poor mental and motor functions. Asogwa in his study among drivers involved in RTAs in Nigeria, hypothesised that extensive use of kola-nut, especially among long distance drivers might be a contributor to RTAs in Nigeria. This study found that those engaged in eating kola-nut while driving were twice as likely to have been involved in MVAs in the previous 10 years (OR 1.95, 95% CI; 1.16, 3.31). This might have been due to fatigue resulting from sleep deprivation. More research is needed to investigate this observation further, so that appropriate public health interventions can be undertaken.

4.3. Cigarette smoking while driving

About one quarter (25.8%) of the participants gave a history of smoking while driving. Apart from the deleterious effects of cigarette smoking on the general health of the smoker, it also has some effects as far as vision in driving is concerned. Smoke from the cigarette may cause an increase in glare from oncoming headlights at night and will cause veiling glare during the day. It can also be a source of distraction for the driver. Smoking has also been found to be associated with other risky driving habits such as drunk driving, and non-use of seat belt. These effects are likely to affect the overall performance of the driver.

In conclusion, alcohol drinking, cigarette smoking, and kola-nut eating while driving is common among intercity vehicle drivers in Ilorin, Nigeria. There is need to enforce existing laws, educate the drivers and the general public on the potential dangers of this habits, and conduct further research into road safety in Nigeria.

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