Substance Use Among Long Distance Commercial Vehicle Drivers: Onset and the Influence of Education

Okpataku CI

Department of Psychiatry, Bingham University, Bingham University Teaching Hospital, Jos, Nigeria

Abstract

Background: There is a growing global concern about the risks of drugged-driving among long distance commercial vehicle drivers. Very little is known about the influence of extraneous factors on this pattern of behavior. Objective: To determine the onset of substance use and the relationship between long distance drivers’ level of formal education, knowledge of substance use risks, attendance at campaigns against substance use and their current wish on drugged-driving in the future. Materials & Methods: This was a study of all long distance commercial drivers travelling a distance of at least 500 kilometers from Kaduna city. Each consecutive 4th driver who was to load his vehicle for the day responded to a semi-structured proforma which sought information such as age, highest level of education, onset and type of substance used and attendance at campaigns against drug use, until at least the minimum sample size was attained. Data obtained was analysed using the SPSS version 16. P<0.05 was considered significant. Results: 274 drivers were interviewed. All were males, with about 76% of them being current substance users. The commonest substances used were stimulants, nicotine and alcohol. A statistically significant proportion of drivers who were aware of the risks associated with drugged-driving wished to continue drug use (p<0.007). Most drivers had been using substances before they commenced long distance driving. Conclusion: Knowledge of the risks of substance use among drivers may be a crucial factor to consider not only in the strategies against drugged-driving but also in the evaluation of their impact.

Keywords: Substance, Use, Drivers, Education

Introduction

The use of alcohol and other drugs is increasing in most parts of the world and there is a growing concern about this trend and its consequences1. The variation of psychoactive substance use with occupation is also an important occupational health problem. Some studies had investigated how drug use is influenced by different occupations2-4, as well as the occupational risks of drug use5. Vehicle drivers have been known and documented to use psychoactive substances while driving6-9. However,
drivers from whom these reports are generated were essentially involved in routine day-to-day driving activities as against those who engage in commercial driving as an occupation.

Long distance commercial driving is arguably the most common means of transport in Nigeria and indeed some other parts of the world where alternative means of transportation are not well developed. This means of transport is run by young and middle aged men, largely with partial or no formal education who resort to this as a means of earning a living. They have been reported to use and abuse psychoactive drugs. Although, reasons for the use of substances have been noted to include “to keep awake and reduce fatigue while driving” these substances are often used excessively even when it has been shown to be causally related to road traffic crashes and adverse health consequences for drivers.

Research done on the use of substances by drivers has been predicated on assumptions that substance use began after the commencement of driving as an occupation. In which case, it may be inferred that the driving job was the direct risk factor for the use of drugs. The onset of substance use in relation to driving is key to understanding some of the motivation surrounding this behavior. Furthermore, long distance drivers’ level of formal education and knowledge about the health and other consequences of drugged-driving are also crucial in designing, implementing and evaluating the impact of substance use control programme. This study explores the onset of substance use in drivers, the relationship between formal education and knowledge about substances and their influences on drugged-driving behavior.

Materials and Methods

The study was conducted in Kaduna. Kaduna is the capital city of the third most populous state in Nigeria. It occupies a very strategic position in terms of its historical role, contemporary political development and economic activities. Road transportation is a major means of human and goods movement within and outside the Kaduna metropolis. To efficiently undertake this task, the city is provided with multiple motor parks in various locations by the state government.

This was a cross-sectional descriptive study of licensed long distance vehicle drivers who travel a distance of at least 500km from Kaduna to other parts of the country and across the border and operate within the motor parks. All drivers designated for long journeys were invited to participate in the study.

Ethical clearance for the study was obtained from the Health Research Ethics Committee of the Ahmadu Bello University Teaching Hospital and Kaduna State Ministry of Health. In addition, a written informed consent of the respondents was sought before the interview. Permission was granted by the National Union of Road Transport Workers (NURTW) Kaduna to carry out the study.

The sample size required was calculated using the formula for calculating sample size in cross-sectional studies when the population is less than 10,000. An estimated minimum sample of 270 was therefore obtained. However, 274 drivers were recruited to give better power.

The entire drivers travelling route with a distance of at least 500kilometers from Kaduna were identified using their vehicle numbers and listed. There were a total of...
1153 drivers from 10 motor parks which gives a sampling interval of 4 (274/1153=.24, 1/.24=4.2). The number of drivers interviewed from each of the parks was determined by proportional allocation. After a randomly selected respondent, each consecutive 4th driver who was to load his vehicle for the day was interviewed. This process was repeated at the ten motor parks until the given sample size was attained. They completed a semi-structured proforma which sought information about basic demographic data, level of formal education, substance use and driving experience, knowledge of the risks associated with drugged-driving and participation at campaigns and seminars against drugged-driving. The interview was conducted in the Hausa language as this is the main language of communication of the study population.

The data obtained was analysed by means of descriptive statistics using the statistical package of social sciences (SPSS) version 16. A value of p<0.05 was considered significant.

**Results**

All the respondents were males. About 76% (208) of the respondents were using substances singly or in combination. The largest age group of respondents involved in substance use was 31-40 years. The mean ages of substance and non-substance users were 43.57±10.22 and 42.86±10.24 with no statistically significant difference between them t=0.491, p=.853. Majority (76.2%) of them had received formal education at least at primary school level (table 1).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Drug users</th>
<th>Non-drug users</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>208(76)</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>23(67.6)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>71(79.8)</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>56(76.7)</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>52(74.3)</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>61-70</td>
<td>6(75.0)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>43.57±10.22</td>
<td>42.86±10.24</td>
<td>t=0.491, p=.853</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>67(75.3)</td>
<td>22</td>
<td>χ²=.029, df=1, P=.865</td>
</tr>
<tr>
<td>Formal education</td>
<td>141(76.2)</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>

The commonly used substances were caffeinated substances and beverages, kolanuts, tobacco and alcohol. Other substances used included cannabis, opioids, anxiolytics and solvents. No report on the use of cocaine, heroin and amphetamine or other high profile narcotics. The proportion of subjects who used the various drugs currently is as presented below (figure1).
On the relationship between formal (at least primary school) education and knowledge of drug use risks (risk of road traffic accident and or risk to mental and physical health) and current wish on substance use, 131(63%) of substance users wished to continue drug use while 77(37%) of them desired to stop the use. Although a higher proportion of respondents without formal education desired to continue substance use, there was no statistically significant relationship between education and current wish on the use of drugs. Similarly, on the attendance at campaigns against drug abuse, a higher proportion of non-attendees wished to continue drug use. However, statistically, this fell marginally below the threshold for significance (p<0.057).

A significant proportion of drivers who had knowledge about the risks of drugged-driving currently wished to continue drug use (table 2).

Table 2. The relationship between education and knowledge of drug use risks and current wish on substance use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wish to continue</th>
<th>Do not wish to continue</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=208</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal education</td>
<td>82(63.1)</td>
<td>58(74.3)</td>
</tr>
<tr>
<td>No formal education</td>
<td>48(36.9)</td>
<td>20(25.6)</td>
</tr>
<tr>
<td>$\chi^2=3.314$</td>
<td>p&lt; 0.069</td>
<td></td>
</tr>
<tr>
<td>Knowledge of risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aware of risks</td>
<td>116(88.5)</td>
<td>57(74.0)</td>
</tr>
<tr>
<td>Not aware of risks</td>
<td>15(11.5)</td>
<td>20(26.0)</td>
</tr>
<tr>
<td>$\chi^2=7.309$</td>
<td>p&lt;0.007</td>
<td></td>
</tr>
<tr>
<td>Attendance at campaigns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. current substance use distribution of the drivers
against drug abuse

<table>
<thead>
<tr>
<th>Attended</th>
<th>65(49.6)</th>
<th>49(63.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never attended</td>
<td>66(50.4)</td>
<td>28(36.4)</td>
</tr>
</tbody>
</table>

χ²=3.634 p<0.057

Identification of the period of commencement of substance use showed that respondents began the use of drugs at different times in relation to when they started long distance driving (figure 2).

**Figure 2. Onset of psychoactive substance use in habitual users and in driving-related users**

![Graph showing onset of substance use](image)

**Discussion**

This study found all long distance drivers to be males. A similar report had been documented by studies done among long distance commercial vehicle drivers in Nigeria\textsuperscript{11,12}. Empirical evidence further shows that long distance commercial driving in Nigeria is essentially dominated by males, partly resulting from economic reasons. Those of the male sex 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 male’s job. In other parts of the world, females have been found and assessed for drug driving. They were however based on samples drawn from day to day intra-city vehicle drivers who drive on non-commercial basis and expectedly are part of this pattern of driving globally\textsuperscript{15-17}.

The mean age of the respondents in this study was close to the findings from other studies\textsuperscript{11,13}. Although, these studies were not done among long distance drivers, it is a reflection of some basic characteristics of this subpopulation. To be licensed to drive, one ought to meet some conditions which include a minimum age of 18 years; hence, very young people were not found among these drivers. In addition, drivers in their seventh decade were expected to retire from active commercial driving due to the effects of ageing which makes it difficult for the elderly to continue this energy-demanding
and competitive job. This leaves behind, drivers who are mostly in their third to fifth decade as the majority of those involved in this pattern of driving. Most of the drivers had received elementary education as the highest formal academic achievement. This is similar to the findings of another study done to estimate substance use among long distance commercial drivers in Nigeria\textsuperscript{10}, and possibly reflects pursuance of an alternative vocation in long distance commercial driving to formal education.

There appear to be a bidirectional relationship between education and substance use. Formal education, knowledge of psychoactive substances and their actual use are related in a rather intricate way. Higher level of educational attainment could drive awareness in an individual and make him more knowledgeable about the types of drugs available or there can be, the risks associated with their use as well as making a critical appraisal about the cost and benefit of substance use. Otherwise, substance use may limit educational attainment. In a study to examine the relationship between cannabis use in young people, it was found that increasing cannabis use was associated with increasing risks of leaving school without qualifications, failure to enter university and failure to obtain a university degree even after adjusting for cofounders\textsuperscript{18}. Illicit drug use have also been found to be associated with a reduction in number of years of school completed\textsuperscript{19}. Even in a veteran population with access to military educational benefits, a large scale study found that early alcohol use, alcohol dependence and daily nicotine use remained significantly associated with years of educational attainment\textsuperscript{20}. On the other hand, what determines whether an educated or uneducated person do not take or take substances, (including the type taken) may be complex. For instance, in the analysis of prospectively gathered data, individuals who had dropped out of high school were 6.34 times more likely to develop alcohol abuse or dependence than were individuals with a college degree\textsuperscript{21}. In the current study, an apparently equal proportion of drivers who had formal or no formal education were using at least one substance. This may be as a result of the overwhelming desire to prevent sleep and reduce fatigue which is crucial to their occupation; a need that arguably far outweighs other considerations that may be made due to education. Although it was not a statistically significant finding, a higher proportion of drivers without formal education wished to continue with drug-driving. This may be as a result of their relative ignorance about the consequences of this behavior. It will be of interest to see in further studies how education influences not only drug use but the choice of drug taken in a prospective manner.

Besides knowledge about the risks associated with the use of drugs, education and attendance at campaigns against the use of drugs were not significantly associated with their current wish on substance use. Ordinarily, more respondents in this study would have been expected to be willing to discontinue drug use. The Federal Road Safety Commission (FRSC) in Nigeria had been organizing health and safety talks where they educate and instruct drivers in the open motor park about the risks of drugged-driving. The talks are targeted at long distance commercial drivers, but drivers are not under any obligation to attend. Campaigns of this kind are held regularly and it is a major strategy used by the FRSC to control drugged-driving. Given that drivers had received some education on the risks and dangers of drug driving commonly hosted by the FRSC, this knowledge did not seem to significantly
impart their wish for a behavioral change on drug use as reported by them in this study. This data should be valuable to the FRSC for a change of or modification of their strategy.

Among commercial drivers in Nigeria, Adelekan and Osigbogun had earlier reported higher prevalence for the use of salicylates (80.3%), kolanuts (75.5%) and alcohol (72.9%)\textsuperscript{22}. A study also found that the most currently used substances by drivers were stimulants (31.9%) and tobacco (30.4%)\textsuperscript{10}. In Calabar, southern Nigeria, alcohol, tobacco and stimulants such as coffee and kolanuts were the most prevalent substance recorded by another study\textsuperscript{23}. These drivers were however not engaged in long distance driving. In south western Nigeria, long distance drivers were documented to mostly use alcohol (77.5%) and tobacco (60.5%)\textsuperscript{11}. This is at variance with what was found in the current study. It is likely the effect of religious permissiveness or prohibition on the use of some substances such as alcohol. Islam, the religion predominantly practiced by people of northern Nigeria prohibit the use of alcohol. Various forms of alcohol are abundant in southern Nigeria which is indigenous to most Christians who in some cases are introduced to alcohol ingestion at childhood. Alcohol is an important aspect of social events, pleasure and recreation. On the other hand, there is an abundance of various forms of caffeinated beverages and orthodox and locally produced stimulants. It may also mean that non-permissiveness of alcohol to Muslims may force them to go for drugs which will not smell readily. These preferences may be a reflection of the choices for drug as similarly obtained in the general population. Perhaps it could also be the result of shared ethnic group activity and cultural modeling in which case people use and identify with certain psychoactive substances on the basis of whether or not people of his ethno-religious background uses same. Empirical evidences point to this possibility as during this study drivers responded with elements of disdain and resentfulness when they were asked whether or not they used drugs such as alcohol, cannabis or stimulants depending on what ethno-religious group they belong.

This study shows that drivers do not use drugs necessarily to augment driving ability as often assumed. Many drivers had been in the habit of taking most substances including illicit ones long before they started the business of long distance driving. Hitherto, it would seem that every long distance driver who uses substances only does so because of driving activities. From the data available to the author, this current study is the only one so far that has reported this finding. In addition, drug use among long distance drivers may not necessarily imply a higher amount of use in this subpopulation in comparison to the general population but a modification of use from what is observed in the general population to ‘suit’ their job description. The higher prevalence for the use of stimulants after drivers began to travel over long distances in this study may reflect the desire to prevent sleep and or reduce fatigue. Up to 50% of drivers in one study decreased their total sleep time in the 24 hours before they were interviewed compared with their regular self-reported sleep time\textsuperscript{24}. Sleep is one of the most important reason adduced to drug use by drivers. Some studies have documented this finding among drivers\textsuperscript{12, 25, 26}. A recent study has indicated that the use of caffeinated substances such as tea, coffee, caffeine tablets and energy drinks was associated with a reduced risk of crashing for long distance commercial vehicle drivers in Australia\textsuperscript{27}. If further corroborated, this finding could potentially open a new discuss
and approach to the zero-tolerance-for-substance-use policy currently operational in some parts of the world. It was not objectively possible to qualitatively and quantitatively assess how long distance driving contributes to the risk of psychoactive substance use in the current study. Further research could explore this relationship.

Limitation

Findings in this study relied on self-report of psychoactive substance use which is liable to response and recall bias.

Conclusion

The use of stimulants and other psychoactive substances is common among long distance commercial vehicle drivers. In Nigeria and some other parts of the world, campaigns against the use of drugs by drivers has been of vital importance in controlling substance use. The value of these campaigns, influence of education as well as the knowledge about the substances and their associated risks could be significantly related to the outcomes of these campaigns and should be objectively tested. This ultimately should guide policy direction in the design and implementation of strategies against drugged-driving. Substance use may have been a stable pattern of behavior in an individual who eventually becomes a long distance commercial driver and the impact of driving occupation on future pattern of use requires further exploration.

Acknowledgement

Appreciation goes to the National Union of Road Transport Workers Kaduna state chapter, for their support and cooperation during the period of data collection.

References


8. Drummer OH, Gerostamoulous J, Batziris H, Chu M, Caplehorn J,


23. Aniebue PN, Okonkwo KOB. Prevalence of psychoactive substance use by taxi drivers in


**Corresponding Author**
Christopher Izehinosen Okpataku
Department of Psychiatry,
Bingham University,
Bingham University Teaching Hospital,
Jos, Nigeria
**Tel:** +2348069295928 / +2348188960428

**Email:** zehi29@yahoo.com