ALCOHOL AND OTHER PSYCHOACTIVE SUBSTANCE USE AMONG TANKER DRIVERS IN LAGOS, NIGERIA

Makanjuola A.B
Department of Behavioural Sciences,
University of Ilorin Teaching Hospital, Ilorin-Nigeria
Aina O.F
Department of Psychiatry, University of Lagos, Nigeria
Onigbogi L
Global Actions on Harmful Drinking, Lagos, Nigeria

Abstract

   Background: In Nigeria, petroleum tanker drivers (TDs) are often involved in road traffic accidents which are often associated with damage to properties and infrastructures, loss of body parts and death. There is therefore a need to explore ways of mitigating this menace.
Aims and Objectives: To determine the prevalence and factors associated with the use of alcohol and other psychoactive substances among TDs in Lagos, Nigeria
Method: A cross sectional weighted proportionate simple random sampling of TDs were selected for the study. Respondents who gave consent to partake in the study and satisfy the inclusion criteria were interviewed using the modified version of the WHO student drug survey questionnaire.
Findings: 550 respondents completed the interview and showed a relatively high level of information and knowledge concerning the presence, availability and use of alcohol, tobacco, caffeine and cannabis. Lifetime use prevalence of alcohol was 71.6%, tobacco 69.8% and caffeine 50.9% while the current use prevalence of alcohol was 57.6%. Predictive factors for current drug use were presence of multiple sex partners and previous involvement in road traffic accidents. The use of non-commercial alcohol, either alone or together with commercial alcohol, is quite prevalent.
Conclusion: Increased and sustained education programmes on alcohol and other drugs, in addition to other measures, should be targeted towards TDs in Nigeria.

Keywords: Alcohol and other drugs; tanker drivers; Nigeria

Introduction:

The association between psychoactive substance use and accidental injury or death has been acknowledged. In the UK for instance, alcohol accounts for 50,000 deaths per year and up to 500,000 hospital admissions annually (Humphis 1991). In the United States of America, about 10,000 deaths was attributed to use of alcohol by young people (New York Times 2013). The WHO has reported a link between drivers' hazardous use of alcohol and road traffic accidents in Nigeria (WHO, 2009). Approximately 50% of accidents, and its attendant consequences, on Nigerian roads are related to alcohol use (Welcome and Pereverzev, 2010). Many studies in Nigeria have also reported common use of alcohol (and other psychoactive substances) among commercial and long distance vehicle drivers (Makanjuola et al, 2007b, UNAIDS 2007). Omolase et al, 2011) found a prevalence of 32% of alcohol drinking prior to driving. The Global action on Harmful drinking reported the prevalence of current drinking by commercial drivers in Nigeria (from Port Harcourt and Ile-Ife) was 67.2%. Of those drivers, 47% were "heavy" users, 15.3% were "moderate" users and 37.7% were occasional or "mild" users. In addition, Gboyega, (2012) found that between 60% and 70% of commercial drivers engage in drinking and driving. Makanjuola et al, (2007) reported that driving was done in conjunction with the use of the following psychoactive drugs: alcohol (15.9%), tobacco (30.4%), cannabis (4.3%), caffeine (31.9%), sedatives (10.1%) and solvents (8.7%).

In spite of the foregoing, the use of psychoactive substance use and driving has continued unabated in Nigeria. The Federal Road Safety Corp and other civil organizations, have continued to put up campaigns against drunk-driving. The enforcement aspect against drunk-driving has, unfortunately, been unsuccessful as there is no legal basis for determining the legal limits of blood alcohol concentration (BAC) in the Nigerian Traffic laws (Welcome and Perez 2010).   While the consequences of vehicular accidents involving drunk drivers have been established, the implications of drunk driving with a fuel laden tanker are even greater. This will include fire which usually extends beyond the scene of accidents, loss of properties such as houses, cars of innocents passers-by and damage to roads due to sloughing off of heated or melted bitumen. The sloughed off portions of the road readily develops into pot hole which are known causes of serious accidents.

While the common sequelae of use of alcohol and psychoactive drugs among automobile drivers (such as road traffic accidents, loss of body parts and injuries) are recognized, there is a need to remain conscious of other fall outs that are equally damaging to the development of the society. These will include the known association between increased high risk sexual behaviour and psychoactive substance use (UNAIDS 2007, Donna et al 2010, Sunmola

2005); and disruption of social networks due to disturbed behavior and strained social and occupational relationships (Makanjuola et al 2007a, Laosebikan & Baiyewu 2009). Other consequences include hepatitis B, C, carcinoma of the lungs, liver cirrhosis and primary liver carcinoma, alcohol hallucinosis and dementia.

In Nigeria, it is not uncommon to find non-commercial alcohol being sold in or around the motor parks. They are sold as herbal concoctions against malaria or low back aches popularly referred to as *jedi-jedi*. Often the buyers are unaware of the components of such herbal drugs especially the alcohol content.

There have been several studies on prevalence, pattern and psychosocial correlates of alcohol and other psychoactive substance use among various groups and subgroups in Nigeria (Adelekan et al, 2001, Abiodun et al, 1994, Makanjuola et al, 2007b, Aina & Olorunshola, 2008, Rasheed, 2010, Sajo, 2013), including long distance vehicle drivers (Makanjuola et al 2007a). However, we are not aware of existing published studies on alcohol and other psychoactive substances among tanker drivers. This study is therefore aimed at one, determining the prevalence of alcohol and other psychoactive substance use among tanker drivers in Lagos and two, determine psychosocial factors that are associated with substance use among the respondents.

Method

The setting: Lagos State is a mega city with a population estimate of 17 million people (NPC, 2006). It is the most industrialized city in Nigeria and therefore has a high proportion of articulated vehicles and tankers coming in and out of Lagos Sea Ports and fuel depots, to and from other parts of the country. The total number of tanker drivers (registered or not), as estimated by the organized tanker drivers union is 6000.

Sample size determination: Using the Fisher's formula (Fisher et al, 1983) and allowing for a 10% attrition rate, a calculated sample size of 393 (rounded up to 400) was obtained. However, since the estimated population of TDs in Lagos is 6000, a proportionate sampling of 10% (Smart et al, 1980) of TDs will be 600. Apapa depot has the largest population of TDs compared with Ejigbo. Consequently, 300 TDs were sampled from Apapa while the remaining 250 were selected from Ejigbo.

Sampling Method: Using a simple random sampling method, a weighted proportionate sample of all tanker drivers who satisfy the inclusion criteria and consent to participate in the study were interviewed in each of the study sites.

Inclusion Criteria: All tanker drivers (having a designated route of 5 hours drive, with or without a stop- over) seen at the motor parks within the

study period who consented to be included in the study were eligible to participate. The respondents must have attained the minimum legal driving age of 18 years. In Nigeria, though there is no minimum legal drinking age, there are social restrictions against drinking by those aged less than 18 years.

Instrument for data collection: This consists of a modified, semi-structured self-report questionnaire based on the World Health Organization's guidelines for student substance use survey (Smart et al, 1980). This instrument have been previously used among students in Nigeria and found reliable and valid (Adelekan et al, 2001, Adelekan et al, 2000, Adelekan et al, 1989). The modified version of the questionnaire, has also been previously used by Makanjuola et al (2007b) among long distance vehicle drivers in Ilorin, Nigeria. The modified questionnaire consists of items that sought information on the respondents' socio-demographic characteristics, frequency of use of substances, types of substances used (alcohol e.g beer, palm wine; caffeine e.g *kola acuminata*; amphetamine; cocaine; opioids; solvents), respondents' frequency of involvement in road traffic accidents, attendance at health talks on drug abuse, and suggested methods of curbing substance use, among other items.

Pilot Study: A pilot test of the modified semi-structured questionnaire was conducted among 20 randomly selected non-tanker drivers in Mafoluku bus stop, Oshodi Lagos. The motor park for the pilot test were operated by non-tanker drivers (intra-city taxi cabs) and located at a reasonable distance away from the parks that were used for the main study. This was to avoid exchange of information between study participants. The pilot study was also aimed at identifying items in the questionnaire that may be ambiguous and also identify logistic issues that might constitute serious challenges to the main study.

Questionnaire Administration: Trained Research Assistants (RAs) explained the purpose of the study to randomly selected potential respondents. They were also assured of the confidentiality of their responses and that their names need not be disclosed throughout the period of data collection. Thereafter, the consent of each respondent was sought and obtained. Where a respondent refuses consent, he was politely thanked for his time and the next potential respondent randomly selected until a desired sample size was obtained. In order to ensure confidentiality, each questionnaire was assigned an identification number which indicated city of interview, location of park, serial number, date and time of interview, and the code number of the interviewer. At all times, respondents' names were not to be written on the questionnaire. A careful record of the following was also be kept: number of drivers invited to participate in the study, number of drivers who did not satisfy the inclusion criteria, number of drivers who refused to participate (those who refused before determining whether they are long

distance tanker driver or not, and those who refused after determining that they are long distance tanker driver).

Ethical Considerations: Ethics approval for the study was obtained from the Ethics Committee of the University of Lagos (ADM/DCST/HREC/1577).

Data Analysis: Data was entered by trained RAs and thereafter analyzed using the SPSS version 17 software. Frequency tables and means were generated and relevant cross tabulations done. Proportions were compared using chi-square test while means were compared using F statistics/ t-test.

Findings: Of the 600 respondents targeted, 37 did not meet the inclusion criteria, 8 refused out rightly to participate in the study while 5 did not complete the interview. The total number of completed interview was 550. The reasons given for refusal to participate was fear of the information being used against them while the non completion of interview were due to, according to the respondents, asking 'irritating' questions such as 'how many children do you have' and 'do you have sexual partners'.

Sociodemographic characteristics of respondents: In Lagos, 550 interviews were completed among 300 (54.5%) tanker drivers in Apapa and 250 (45.5%) from Ejigbo depots. All the tanker drivers were males, aged 20-63 years with a mean of 37.2±8 years. Three hundred and seventy six (68.4%) claimed they were very religious, 146 (26.5%) moderately religious, while 26 (4.7%) were not religious. Two hundred and twenty (40%) had primary education, 233 (42.4%) had secondary education, 33 (6%) had tertiary education, while 63 (11.5%) had no formal education. Their driving experience ranged from 1-38 years with a mean of 9.2± 6.1years. About half of them (47.3%) earned above N10,000 ($64.00) per week, while the remaining earned less than $64/week. For those who are married, almost all had a relatively stable relationship with their spouse. Two hundred and fifty nine (47.1%) had sex partners with the number ranging from 1-13. About 90% of the respondents had cordial relationship with their employers, while 517 (94%) claimed they had perceived occasional or no emotional problems.

Knowledge about alcohol and other psychoactive substances: A significant majority of the respondents have heard, seen or know someone who used alcohol, tobacco, cannabis and caffeine. The level of knowledge concerning other substances were relatively low with that of steroids being the least.

Peers introduced 294 (53.5%) of respondents to drug use. The reasons given for using drugs, in descending order, were; 'no specific reason' (26.7%), pleasure (26.5%), to be alert (24.7%), imitation of others (17.3%) and to relief tension (4.9%). Majority (78.9%) were aware of the consequences of alcohol and other psychoactive substance use. 480 (87.3%)

claimed that the use of alcohol and other psychoactive substances is a menace that is on the increase among drivers, while 60 (10.9%) said it is decreasing. The preferred method of addressing the issue of substance abuse were; referral to a doctor/hospital 58.4%, referral to a counselor 24.7%, frequent health campaigns (54%) and punitive measures by law enforcement agents (45.5%).

Though 56% have heard of anti drug campaigns, only 29.8% have actually attended one. One hundred and twenty (21.8%) respondents have had previous road traffic accident. Only 50 (9.1%) of this claimed it was due to influence of alcohol and other psychoactive substances. The drugs mentioned as being responsible were; alcohol 41 (82%) and cannabis 5 (10%). One hundred and ninety four (35.3%) respondents keep psychoactive drugs in their vehicles, while 242 (44%) use alcohol and other psychoactive drugs when they stop over. The drugs used at stop over include alcohol (56.6%), caffeine (34.3%), cannabis (8.7%) and cough syrup with codeine (0.4%).

Prevalence of use of alcohol and other psychoactive substances: The lifetime use prevalence of psychoactive substances was alcohol (71.6%), tobacco (69.8%), caffeine (50.9%), amphetamine (2.4%) and sedatives (6.9%). The current use prevalence for alcohol was 57.6%, tobacco 56.4%, caffeine 40.2%, sedatives 5.3% and amphetamine 0.9%. The daily current use pattern for tobacco was 45.5%, alcohol 43.3% and cannabis 16.5%, caffeine 10.2%. Eighty four (15.3%) claimed they will still use tobacco in future while 19.5% claimed they will use alcohol in future.

Vehicular accident rate and alcohol and other substance use: The rate of vehicular accidents among alcohol users was 24.9% while the rate in non-alcohol users was 17.6% (Pearson χ^2=5.5; p= 0.07). The accident rate among cannabis users was 25.2%. Also, 60.3% of current users of alcohol were cannabis users while 94.6% of current cannabis users were current users of alcohol (Pearson χ^2=178.2; p= 0.000).

Psychosocial factors associated with total current use of alcohol and other psychoactive substances

Logistic Regression analysis: Univariate binary/multinomial regression analysis of level of religiosity, age, level of education, income, driving experience, number of children, presence of sex partner, perceived level of physical wellness, perceived level of emotional wellness, having had previous road traffic accident, and having heard of antidrug abuse campaign was done using current use of alcohol, tobacco, cannabis and alcohol containing concoctions as dependent variables (Tables 1a, 1b and 1c).

Age, level of education, driving experience, number of children, presence of sex partners and having heard of anti drug campaign were found to have significant association with current use of alcohol. However,

multivariate regression analysis of all the significant factors showed that only education (p=0.002; OR=0.311; 95%CI=0.148-0.653), number of children (p=0.009; OR=1.116; 95%CI=1.027-1..214), presence of sex partners (p=0.000; OR=0.474; 95%CI=0.321-0.474) and previous accident (p=0.002; OR=0.449; 95%CI=0.272-0.741) were found to have predictive values. Univariate regression analysis showed that current tobacco use was predicted by age, level of education, driving experience, number of children, presence of sex partners, previous accident heard of anti drug campaign. On multivariate regression analysis, only having heard of anti drug campaign (p=0.006; OR=0.556; 95%CI= 0.366-0.844), level of education (p=0.005; OR=0.361; 95%CI= 0.177-0.739), presence of sex partners (p=0.000; OR=0.341; 95%CI= 0.232-0.500) and previous accident (p=0.001; (p=0.006; OR=0.448; 95%CI= 0.275-0.730) were found to have predictive values. For current cannabis use, age, level of education, driving experience, presence of sex partners, and having heard of anti drug campaigns were found significant. On multivariate regression analysis, only presence of sex partners (p=0.000; OR=0.407; 95%CI= 0.275-0.603) and driving experience (p=0.022; OR=1.060; 95%CI= 1.008-1.114). Current use of alcohol containing concoction was significantly associated with level of education, driving experience, presence of sex partners, previous accident, and having heard of anti drug campaign. Multivariate regression analysis of the significant factors showed that presence of sex partners (p=0.000; OR=0.444; 95%CI= 0.301-0.655), previous accident (p=0.000; OR=0.369; 95%CI= 0.229-0.596) and level of education (p=0.006; OR=0.341; 95%CI= 0.158-0.735) were found to have significant predictive values.

Among current users of both cannabis and alcohol, univariate regression analysis showed that age, level of education, driving experience, number of children, presence of sex partners, and having heard of anti drug campaign were significant. On multivariate analysis, only the presence of sex partners was found to have predictive value (p=0.000; OR=0.361; 95%CI= 0.242-0.540) while other factors were confounding variables. The presence of sex partners was found (after adjusting for confounding variables) to be significantly predictive for the use of alcohol, tobacco, cannabis, caffeine, amphetamines and alcohol containing concoctions.

Non commercial alcohol use among tanker drivers: About 44% of the respondents take concoctions. Also, 39% of them claim the concoction taken contain alcohol while 61% claim they do not know. Of the 241 who take alcohol containing concoctions, 61% of them still take commercial alcohol concurrently. The most commonly used non-commercial alcohol (concoctions) were *jedi (16.7%), paraga (16.5%), agbo iba (14.0%)* and *opa eyin (13.1%)*. It is noteworthy that the prevalence and amount of concoctions consumed was relatively low. The concoctions are usually made from roots

and barks of medicinal plant soaked in 125-250mls of commercial (43% alcohol volume) alcohol diluted with about 300mls of water. However, few concoctions were said to be diluted with non-alcohol beverages (which may undergo fermentation with time) or water only.

Discussion: The high response rate (98.5%) obtained was higher than 72.6% recorded in previous study among long distance vehicle drivers in Ilorin (Makanjuola et al, 2007b). This might be due to better collaboration between the researcher and the tanker drivers union officials. They assisted in identification and initial contact with the prospective respondents. The presence of the union officials assisted in reassuring the respondents that information obtained will not be used against their interest. Lagos is a megacity, it is therefore expected that the cost of living and level of social life will be relatively higher than most cities in Nigeria. This might be responsible for the significantly high prevalence of daily alcohol users (43.3%). It is worthy of note that the most commonly used psychoactive substances are tobacco, alcohol, caffeine and cannabis. This is similar to findings in previous studies in Nigeria (Makanjuola et al 2007, Adelekan et al 2000).

The mild stimulants used by respondents contain caffeine which is usually taken in form of coffee drink/tea or kola nut (*kola acuminata*). Most of the respondents (about 99%) use kola nut (a caffeine containing nut which is usually chewed). Another variant of kola nut that has mild stimulant effect is Orogbo (*garcinia cola*) but this was not mentioned by any respondent. The strong stimulants usually used contain amphetamine and are usually taken in form of *Kwaya* among the youth, drivers especially long distance vehicle drivers and labourers especially from the northern part of Nigeria. Cocaine, heroin, steroids, amphetamine were not found to be drugs that respondents have common knowledge and information on, neither were they being significantly currently or previously used.

The influence of peers in introducing respondents to alcohol and other psychoactive substances was most reported (53.5%). This was closely followed by self induced experimentation. This observation is in keeping with previous findings that have identified peer influence as one of the important predisposing factors to substance use and abuse (Makanjuola et al, 2007a, Sajo 2013). A significant proportion of the respondents have good knowledge about the types of psychoactive substances that are available, are aware of the consequences of its use or abuse, and reported that drug use among drivers constitute a problem which is also on the increase. However, it is worthy of note that only 30% of respondents in Lagos has ever attended a drug abuse campaign programme. This will suggest a need for more drug education programs for the drivers in Lagos and other locations in Nigeria.

This suggestion is even more pertinent when we consider the fact that the prevalence of current alcohol use is 57.6%.

Almost half of the respondents use psychoactive substances when they stop-over, with alcohol being the most commonly used substance by 56.6% of them. The usual stop-over points are motor parks located along the designated route of the tanker drivers. More efforts should therefore be made to increase education and regulation of substance use at the various motor parks or stop over points in Nigeria.

Over 75% of the world population is using herbal products with increasing trend globally. While they may have some beneficiary effects, they are not completely harmless. In Nigeria, though several studies have been done in the area of commercial alcohol use, not many have been reported concerning non-commercial alcohol use. However, few reports suggested that in Lagos, the use of herbal products is 66.8% with the two most commonly used herbal products being *agbo jedi* (35%) and a*gbo iba (27.5%)* (WHO, 2002; Oreagba et al, 2011). Currently in Nigeria, the use of local herbs is prevalent among many Nigerians including the elites. The local herbs are usually compounded using herbal plants parts such as roots and barks or leaves *of plants such as pawpaw (carica papaya), neem (azadirachta indica) tree or mango (mangifera sp) tree*. Some of the plants or animal extracts used vary from one community to another. Usually, commercial alcohols are used as the extracting solvent or as preservative. This method has been reported in previous studies in Europe in herbal medicinal products (European Medicines Agency, 2008). Sometimes, non-alcoholic beverages, which tend to undergo fermentation over time, are used. In our study, 40% of the respondents claimed the concoctions they take contain commercial alcohol. In addition to the alcohol containing concoctions, 61% of respondents still take additional commercial alcohol concomitantly. Such use of herbal products concomitantly with commercial alcohol has been reported to cause toxic reactions (European Medicines Agency, 2008). The rate of concomitant alcohol use (29.9%) reported among adolescents using herbal products by Yussuman et al (2006) is half the figure reported in our study. It has therefore become imperative to pay more attention to the increasing use of non-commercial alcohol in Nigeria as a constituent of local herbal preparations.

The presence or otherwise of sexual partners was found to be a predictive factor for all current alcohol, tobacco, cannabis, cannabis/alcohol and alcohol containing concoction use. This relationship was inverse across all the drugs. This might be because current alcohol users tend to socialize more (Beccaria et al, 2012), possibly go out more with peers and therefore are more likely to be exposed to other aspects of outdoor social life which most times includes friendship and relationship with the opposite sex.

Though it was noted that more current users of alcohol have not had previous accidents, the fact that a quarter of the TDs currently using alcohol (24.9%) had experienced road traffic accident should be a source of concern. The 25% found above could have accounted for significant damage to properties, environment, loss of body parts of the tanker drivers or other commuters or drivers or even death of other citizens. This will further underscore the timeliness of this study and a need to quickly institute programmes that will institute the culture of responsible drinking which will further reduce carnage on our roads.

It is also important to note that a significant proportion of current users of cannabis (57.3%) of current cannabis users had previous road traffic accident. There is therefore a need to increase education and enforcement policies on illicit drug use among TDs and their sales around motor parks.

Religiosity has been reported to have inverse relationship with substance use (Miller 1998, Brown 2006, Adelekan et al 2001, Makanjuola et al 2007a). However, there are also debates on the influence of religiosity and spirituality on substance abuse (Allen 2009). Allen (2009), found that religiosity only had significant inverse relationship with illicit drugs as compared with more permissible or social drugs such as alcohol. Our study supports this observation as alcohol and tobacco did not have a significant association with current alcohol use. For the illicit drug such as cannabis, there was no significant association between cannabis and level of religiosity (Pearson χ^2=4.7; p=0.20).

Our current finding of the relationship between religiosity and alcohol use in Nigeria, as opposed to previous findings in Nigeria, may be a reflection of a gradual divide between concept of spirituality and religiosity among Nigerians. This might not be unconnected with the explosion of religious sects that have come up in Nigeria as opposed to the orthodox doctrines (less/non permissive to alcohol) of churches and Islamic faiths that were previously in existence. Furthermore, this observation might be further supported by the 'disconnect' between religiosity and spirituality that is often seen in Nigeria especially when we consider the paradoxical and inverse relationship between the current numerical explosion in religious houses and the existing level of corruption. Since religiosity may not necessarily equate with spirituality, we suggest that future studies should test the relationship of alcohol use with both religiosity and spirituality. This will assist in determining to what extent previously used religious concepts in management of alcohol and substance abuse is still of relevance, based on evidence, in Nigeria.

In conclusion, there is a relatively high level of information and knowledge concerning the presence, availability and use of alcohol, tobacco, caffeine and cannabis among the respondents as opposed to that of cocaine,

heroin, steroid, solvents and amphetamine. A significant proportion of respondents were introduced to alcohol and other psychoactive substances by friends and colleagues. A significant proportion of the tanker drivers use psychoactive substances during stop over with the most commonly used drug being alcohol. The use of non-commercial alcohol is quite prevalent among the respondents both while at the motor parks and just before leaving home. The most predictive factors for current drug use were presence of multiple sex partners and previous involvement in road traffic accidents. Though some respondents know that the herbal concoctions they take contain alcohol, they still consume commercial alcohol in addition.

We suggest a need for more drug education on the use of alcohol and other drugs to be specifically targeted towards tanker drivers in Nigeria. This will further enhance responsible drinking which will in turn reduce hazardous use of alcohol and other psychoactive substances and their medical, psychosocial, environmental and legal sequelae. There is also a need to step up the process of enactment of law to determine legal alcohol drinking limit in Nigeria so that 'drinking under influence' and all its attendant consequences, can be addressed through education and enforcement of regulations guiding it.

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Table 1a: Univariate binary/multinomial logistic regression among TDs in Lagos

	Current alcohol use				current tobacco use				current cannabis use			
	p	b	OR	95% CI	p	b	OR	95% CI	p	b	OR	95% CI
Age	0.000	0.040	1.041	1.018-1.064	0.005	0.031	1.031	1.009-1.054	0.003	0.04	1.036	1.012-1.060
Level of religion	0.08	0.774	2.168	0.921-5.100	0.114	0.690	1.994	0.848-4.688	0.419	0.459	1.582	0.596-4.200
Education	0.000	1.42	3.31	1.4-7.9	0.000	1.42	3.500	1.449-8.453	0.000	1.42	3.946	1.960-7.943
Income	0.18	0.256	1.291	0.886-1.882	0.46	-1.43	0.867	0.596-1.261	0.946	-0.13	0.987	0.677-1.439
Driving experience	0.000	0.06	1.064	1.031-1.098	0.19	0.036	1.037	1.006-1.069	0.000	0.761	1.078	1.041-1.118
No children	0.000	0.13	1.143	1.085-1.205	0.001	0.086	1.089	1.037-1.144	0.000	0.11	1.117	1.054-1.182
Sex partners	0.000	-0.91	0.43	0.3-0.6	0.000	-1.134	0.322	0.226-0.458	0.000	-1.120	0.33	0.23-0.47
Emotional well	0.673	0.075	1.078	0.760-1.529	0.577	-0.099	0.905	0.639-1.284	0.357	0.168	1.183	10.827-1.691
Previos accident	0.041	-0.441	0.64	0.4-1.0	0.03	-0.461	0.63	0.4-1.0	0.139	-0.312	0.732	0.485-1.106
Heard campaign	0.012	-0.438	0.64	0.5-0.9	0.000	-0.768	0.46	0.3-0.7	0.022	-0.41	0.66	0.5-0.9

Multivariate regression analysis

Prev accident	0.002	Prev campaign	0.023	sex partners	0.000
Education	0.001	education	0.035	driving experience	0.022
No children	0.009	sex partners	0.000		
Sex partner	0.000	previous accident	0.002		

Table 1b Univariate binary/multinomial logistic regression among TDs in Lagos

	Current concoction use				current cannabis/alcohol use			
	p	b	OR	95% CI	p	b	OR	95% CI
Age	0.99	0.019	1.019	0.997-1.042	0.001	0.039	1.040	1.016-1.065
Level of religiosity	0.418	0.360	1.434	0.600-3.428	0.428	0.396	1.485	0.559-3.948
Education	0.001	1.120	3.07	1.6-7.8	0.000	-1.251	3.493	1.7-7.0
Income	0.770	0.056	1.057	0.729-1.534	0.826	0.043	1.043	0.714-1.525
Driving experience	0.001	0.056	1.058	1.02-1.09	0.000	0.076	1.079	1.040-1.119
No children	0.069	0.046	1.047	0.996-1.100	0.000	0.126	1.134	1.068-1.205
Sex partners	0.000	-0,876	0.416	0.3-0.6	0.000	-1.227	0.293	0.2-0.4
Emotional wellness	0.084	0.313	1.368	0.959-1.951	0.354	0.171	1.186	0.826-1.704
Previous accident	0.000	-0.737	0.478	0.3-0.7	0.171	-0.291	0.747	0.493-1.134
Heard campaign	0.014	-0.439	0.645	0.5-0.9	0.019	-0.430	0.650	0.5-0.9

Multivariate regression analysis

Current concoction use		current cannabis/alcohol use	
Sex partners	0.000	Sex partners	0.000
		Previous accident	0.000
		Education	0.009

Table 1c Regression analysis of previous accident against Lifetime use of substances among Ds in Lagos

Substance	p	b	OR	95% CI
Tobacco	0.014	0.607	1.834	1.130-2.978
Alcohol	0.049	0.488	1.629	1.001-2.649
Cannabis	0.013	0.520	1.682	1.116-2.535
Caffeine	0.519	0.134	1.143	0.762-1.714
Amphetamine	0.535	0.333	1.393	0.4487-3.993
Alcohol containing Concoction	0.000	-0.737	0.478	0.318-0.721

Multivariate regression of all significant variables shows that previous accident was dependent on Lifetime use of only alcohol containing concoctions (p=0.006).