

**THE EFFECTS OF DRUG ABUSE ON THE PERFORMANCES OF COMMERCIAL
MOTOR-CYCLE AND BUS DRIVERS IN ZARIA URBAN CENTER, KADUNA STATE.**

SHUT VICTORIA DANIEL
National Tuberculosis & Leprosy Training Center
Saye, Zaria, Kaduna State
victorialoms@yahoo.com

&

BELLO ADUKE OLUFUNMILAYO
Department of Geography
Federal College of Education
P.M.B 1041, Zaria
fadukebello@gmail.com

&

ADEDOKUN OLUTOYIN MOSES
Department of Geography
Federal College of Education
toyinadedokun@gmail.com

&

MANASSEH SIMON LOMS
Department of Geography
Federal College of Education
P.M.B 1041, Zaria
simonloms@gmail.com

&

KOR DANIEL AKUHA
Department of Geography
Federal College of Education
P.M.B 1041, Zaria
danielakuha@gmail.com

ABSTRACT

This study examined the influence of drug abuse on the performance of commercial drivers of motor-cycle and buses in Zaria urban center. Questionnaire was used as instrument to collect the data accompanied with verbal interview where applicable. The instrument used was validated and tested for reliability. 250 sampled respondents were used with 150 as motor-cycle drivers and 100 as bus drivers respectively. Administration of the questionnaire was carried out at their various parks/terminals to ensure that only registered members/dwellers were interviewed not passer-byes. Both descriptive and inferential statistics were used for data analysis. Frequency counts, percentages and means were also used while the hypothesis was tested using analysis of variance (ANOVA). The responses on drug abuse and its influence on the performance of commercial drivers were positive and significant. Hence it was concluded that majority (68%) of the

respondents abused drugs such as Tobacco or Marijuana randomly. Frequent rates of accidents was linked to drug abused as the major cause, hence, it was recommended amongst others that Unions of commercial transport workers/owners, Federal/State Government, Communities, parents and owners of the machines/buses should monitor the activities of the drivers and apply strict measures to avoid access and intake of such drugs. It was also recommended that only medically certified persons by medical professionals should be allowed in driving commercial automobiles as applicable to political office seekers.

KEYWORDS: *Drug abuse, Effects, Performance, Commercial Motor-Cycle & Bus Drivers.*

INTRODUCTION

Drug Abuse has for long assumed a societal discussed because of its far-reaching negative implications on individual, families and the society at large. World Health Organization (WHO, 2002) defined drug abuse as “self-administration of a drug for non-medical reasons, in quantities and frequencies which may impair an individual’s ability to function effectively, and may result in social, physical, or emotional harm”. Alti-Muazu and Aliyu (2008) explained that, drugs have been of tremendous benefits to man, but it has been established also that the inappropriate used (Abuse) of same can do incalculable harm not only to individuals career but also to his/her destiny.

Commercial bus driving and motorcycle riding are the most complex psychomotor task undertaken by every person on a daily basis, most especially in Zaria urban center. Many drivers as Aliyu and Alti-Mu’azu attested that out of ignorance many believe that they operate these automobile safely and efficiently when under the influence of drugs. But contrary to Aliyu and Alti-Mu’azu’s belief, Sonderstrom, Dischinger, Kerns and Trallis (1995) earlier clarify that marijuana has been found to play a significant role in accidents across the United States. Porter, 1999; Joy, Watson and Benson (2000) and National Highway Traffic Safety Administration (NHTSA, 2000) revealed that drug abuse can damage short term memory, distort perceptions and impair judgment and complex motor skills while altering heart rate.

The use of motorcycles which compliment other means of public transport, became popular in Lagos in 1992. It was reported in Aliyu and Alti-Muazu (2008) that by 1995 an estimated 48,000 motorcycles were in use for public transportation in Lagos metropolis alone.

In Zaria like other urban area, there has been an increase in these commercial motorcycles; for example, Manasseh (2011) reported an increase of registered commercial motorcycles by 1495, which is 29% difference in contrast with Aliyu and Alti-Muazu (2008) who reported only 3621 registered motorcycles. There are few community based studies as claimed by Aliyu and Alti-Mu’azu (2008) that have investigated related problems in this part of the country and similar implications or consequences where established, hence the need for this research to be carried out in Zaria urban center so as to ascertain the effects of drug abuse on the performance of commercial drivers for appropriate prevention and cure.

Statement of the Study Problem

The operation of buses and motorcycles which has come to bridge the huge public transportation gap in most cities across Nigeria is not without the danger posed to drivers, and road users’ performances. This situation related to incessant abuse of drugs, claims of lives by these automobiles as reported by Manasseh (2011) and the yearly records from the Department of Health Information Management, Ahmadu Bello University Teaching Hospital Shika, Zaria, indicated that, a total number of road transport accidents victims from 2008-2010 has been on the increase from 1108-1735 (36.5%,) in 2010-2011 and further increased to 38% between 2018 to 2019. So also from Federal Road Services Corporation (RTC Report Book) Zaria Unit Command indicated that from June-July 2011 and similar cases between June-July, 2019, a total number of recorded accidents of commercial vehicles within Zaria environment was 176 with 603 victims. Out of this

number, of accident vehicles, commercial buses were 101 (57.4%) with 468 (77.6%) victims. Reflecting on these alarming cases of commercial automobile accidents and the constant loss of lives and properties, this study was born to answer the following research questions;

- I) Who are those involved in the activities of commercial driving in Zaria urban center?
- II) Do Zaria commercial motorcyclist and bus drivers partake in drug abuse?
- III) What types of drugs do they abuse?
- IV) Where do they source the drugs from?
- V) How frequent are the drugs abused?
- VI) Are there incidences of accidents involved as the drivers carry out their functions?
- VII) How frequent do these accidents happened?
- VIII) What are the resultant consequences of drug abuse on commercial drivers' performances in Zaria?
- IX) How can this menace of drug abuse be stopped?

To answer the above questions, a research hypothesis was postulated as follows:

H₀-Drug abuse is not the cause of commercial motor-cycle and bus drivers' accidents in Zaria urban center.

H₁-Drug abuse is the major cause of accidents by commercial drivers in Zaria urban center.

The Study Aim:

The aim of the study is to examine the effect/s of drug abuse and its impact on the performances of commercial motor-cyclists and bus drivers in Zaria Urban center, Kaduna State, Nigeria.

Study Objectives: This aim will be achieved through the following specific objectives: By

- Identifying the drivers involved in drug abuse in Zaria urban center.
- Analyzing the influences of drug abuse on commercial motorists' performances in Zaria urban center.
- Identifying the different types of drugs they abused and their sources.
- Uncovering the reasons for the abuse of these drugs and its resultant consequences.
- Proffering workable solutions to eradicating this un-wanton monster that is affecting the performance of commercial motorists in Zaria urban center.

The Significance of the Study:

Drug abuse which is the misuse of drug or its maltreatment by the users for the purpose it is not-intended for. Its investigations and subsequent proffering of solution will go a long way in reducing incessant rate of commercial automobile accidents, degradation of lives, and the disobedience to commuter's law and order. Furthermore, this research will be useful to drug law enforcement agencies, commercial motorists, bus drivers, hospitals, academics, road safety agencies and to related interest groups.

The Study Scope:

This study was restricted to commercial motorcyclists' and bus drivers, in order to establish the influence of drugs abuse on the driver's performances within Zaria urban center, Kaduna State. Data was gathered from only registered members of the specified automobiles at various parks and terminals.

The Study Area:

Zaria is located between latitudes 11°00"N & 11°12"N of the equator and between longitudes 7°36"E - 7°45"E of the GMT (Department of Geography, FCE, Zaria, 2020; see fig.1). Zaria Urban center where this study is conducted comprises of areas namely; Samaru, Sabon Gari, Tudun Wada, Wusasa and Zaria City with its surrounding villages such as Dambo, Dakachi, Dumbi, Wanka, Dutsen Abba (Tukur-Tukur) and Mujeru. Zaria which was established in the 17th century is one of the ancient historical cities of importance in Northern Nigeria based on its central and nodal location with institutional composition (Yakubu, 2008).

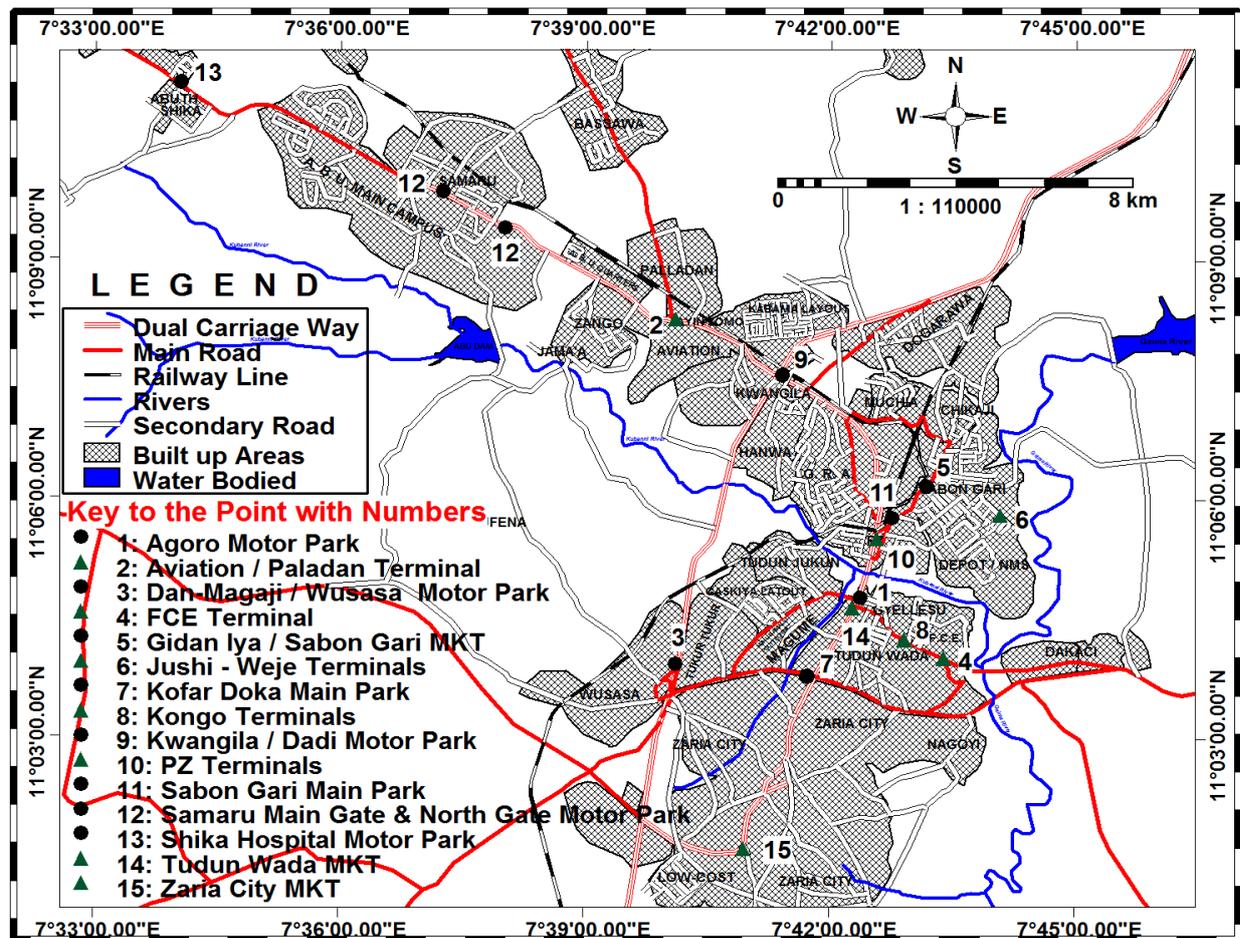


Fig. 1: Urban Zaria Showing the Location of some Motor Park & Terminals.
Source : Department of Geography, Federal College of Education, Zaria.

Based on the 2006 National census, Zaria population was reported to have 450, 830 person and projected to be about 600, 000 in 2010, a number expected to have been attained irrespective of the frequent accidents and other morbidity factors (FRSC Official Gazette, 2007). Zaria being a nodal city linked by different road network from South, East, West and far Northern Nigeria. Thus, transportation plays a vital role in controlling the socio-economic activities of the area. Like in other urban centers of Nigeria, buses and motor-cycle (Kabu-Kabu or express) has dominated the transport operation within the metropolis with youths forming the major operators (Aliyu and Alti-Muazu, 2008).

Apart from its nodal advantage, Zaria has among other industrial location such as the Sunseed Nigeria Company, Rigid pack Industry, Nigeria Metre Company, the Nigeria Tobacco Company and the people are involved in other economic activities such as tailoring, weaving, fishing, livestock rearing, production of food like Beans, Yam, Rice, Guinea Corn, Millet, Vegetables and Ginneries that attract transport activities.

Research Methodology:

Research Design: The research was designed to look into the effect/s of drugs abuse and its influence on commercial motor-cyclists and bus driver's performances in Zaria urban center.

The study is cross-sectional and descriptive in design over a period of two years from February 2018 to February, 2020.

At the time of this study, there were 3,921 registered commercial motorcyclists and 2951 bus drivers distributed among the thirty seven commercial motorcyclist’s terminals and fifteen bus parks who constitute the study population as received from the Executives of (NURTW/ NARTO) and this formed the primary sampling units, while the registered motorcyclists and bus drivers formed the secondary sampling units.

From ten major motorcyclist terminals and ten bus parks sampled; ten bus parks each were chosen at random for the study, minding the list of registered operators (drivers) for sample size selection.

Using Taro Yamani formula to determine the respondents’ population size as follows; $n = N / 1 + N (e)^2$

Where n = Sample size, N= Total Population size, e = Level of precision or sample of Error, which is $\pm 5\%$ or 0.05

Hence, $n = 6872 / 1 + 6872(0.05)^2 = 9.999 \approx 10 \times 25$ sampled terminals and parks = 250.

Thus, 250 respondents were randomly administered with questionnaire or interviewed.

A total of one hundred and fifty motorist and one hundred bus drivers were interviewed based on number of registered members of each association.

A multi-stage cluster sampling techniques was used to sample respondent of both the commercial motorcyclist and bus drivers registered with the central union after consent was obtained from the executive of National Union of Road Transport workers (NURTW) and National Union of Road Transport Owners (NARTO).

In each of the selected terminals (parks), a structured close ended questionnaire and interview was administered to collect data on the socio-demographic characteristics and types of substance (drugs) abused, reasons for abusing the substance (drugs), work duration, accident rates, crimes involves among others.

To validate the instrument used, the questionnaire was subjected to supervision by the researcher and then tested in one of the terminal each of both commercial motorist and bus drivers’ parks.

The set questions provided answers to the research goal and objectives as follows; Out of the twenty motorcyclist and bus drivers interviewed during the pilot survey, not less than 60% of them have had two or more accident rates as a result of substance abuse.

Though there were challenges of refusal to response and unwillingness to give reasons for their involvement, the final administration will take care of such constraints through varied options.

The statistical techniques (method) used for the study included frequency count and tables. Furthermore, the students T-test statistical technique analysed through the use of ANOVA determine the relationship between drug abuse and accidents among commercial drivers in Zaria urban center.

Result Presentation and Discussion:

This is both the interesting and most challenging aspect of the research where the data collected are analyzed as follows;

Table 1: -Analysis of Age Group and Gender of Respondents

S/No	Age group	Frequency	Percentage (%)	Sex (gender)	
				M	F
a.	15 – 20	25	10	25	-
b.	21 – 25	133	53.2	133	-
c.	26 – 30	51	20.4	51	-
d.	31 – 35	31	12.4	31	-
e.	36 – 40	7	2.8	7	-
f.	41+	3	1.2	3	-
	TOTAL	250	100%	250	NIL

Source: Field Survey 2021.

From Table 1 above, out of 250 commercial motorist and bus drivers interviewed, 53.2% with a mean of 25.4 ± 3.9 years were of the age 21-25 years through random sampling using multi-stage techniques. This finding concurred with Aliyu and Alti-Mu’azu (2008) work on the prevalence of psychoactive substance use among commercial motorist and its health/ social consequences in Zaria where 53-73-6% fall within the age of 21 – 30 years. All of the respondents are males.

Fischer, Unger and Keechi (2012) in their work on age related aspects of addiction emphasized that substance use, abuse and addiction are not limited to specific age group, but it is estimated that the number of people age 50 years and above are in need of substance related addiction treatment, which increase slightly from 2002 to 2012 by 13.0-13.2%, and by 300% in the united states in 2020.

Table 2: Drugs Abused By Commercial Drivers in the Study Area.

S/No	What they take	Frequency	Percentage (%)
a.	Tobacco	89	35.6
b.	Marijuana	41	16.4
c.	Alcohol	32	12.8
d.	Cola nut	30	12
e.	Tramol	10	4
f.	Zakami (Hausa)	17	6.8
g.	Valium	5	2
h.	Rafenol/Paracetamol	3	1.2
i.	Ibumol	12	4.8
j.	Tutolin	1	0.4
k.	Gutter	2	0.8
l.	Benelin	1	0.4
m.	Grind human shit	1	0.4
n.	Yar-kamaru	2	0.8
o.	Chnics/Niger tea	2	0.8
p.	Snuff	2	0.8
q.	Others specify	-	-
	TOTAL	250	100%

Source: Field Survey 2021.

From Table 2 above, out of more than sixteen drugs enlisted none is said not to be used in the area, but the most common and highest abuse is tobacco (35.6%), followed by Marijuana, alcohol, Kolanut, Zakami and Ibumol, with Tutolin and grinded human shit as the least.

Aliyu and Alti-Mu'azu (2008) ascertain a similar predicament using a cross-sectional and descriptive design within 12 month and the most used drugs were marijuana, (Indian hemp), solution and caffeine (Kolanut) with the percentage of 25.8%, 24.5% and 16% respectively

Table 3: - Source(s) of the abused drugs.

S/No	Source	Frequency	Percentage (%)
a.	Friends	47	18.8
b.	Beer parlor	39	15.6
c.	Homes	25	10
d.	Provision stores	12	4.8
e.	Doctors	2	0.8
f.	Parent medicine stores	24	9.6
g.	Hawkers	98	39.2
h.	Others	02	0.8
	TOTAL	250	100%

Source: Field Survey 2021.

The drugs according to the report shown in Table 3 indicate that, there are different sources to which victims get substances but the most accessible sources is through hawkers (39.2%), that is, those that move from door to door selling. Friends (peer group), beer parlor are also viable outlets with 18.8- 15.6% influence but, Doctors to drug sources has less or negligible influence (0.8%) to drug sourcing for commercial automobile

drivers in Zaria urban center. Antwi, Adeje, Asare and Twene (2003) confirm that access rates of drug abuse by students in Ghana to be more from schools and within the communities than other sources.

Table 4: Reason(s) for the drug abuse by commercial drivers in Zaria urban center.

S/No	Reason(s)	Frequency	Percentage (%)
a.	To overcome fear	182	72.8
b.	To get high feelings	14	5.6
c.	To gain acceptance by friends	34	13.6
d.	Copying from parent	5	2
e.	Occupational tradition	13	5.2
f.	Others	2	0.8
TOTAL		250	100%

Source: Field Survey 2021.

The synthesis made in Table 4 shows that, the major reason for the intake is to overcome fear, but in Antwi *etal* (2003) study in Ghana established that it was based on social peer pressure (35.5%). Flashing at the sources in table 3, it is easier for the victims to obtain from parks because most bus parks and motorcycle points are where hawks find it vulnerable to display (sale) there goods in the study area to peer groups. Antwi *etal* states that drug abusers used statement such as; it makes one brilliant, Happier, Stronger, work for long hours, brave, increase confidence and bust appetite to lieu their prey into drug abuse, while Shehu and Idris (2008) said it is through friends influence at parties, schools and relatives.

Table 5: Respondent consent for ever had accident.

S/No	Consent	Frequency	Percentage (%)
a.	Yes	223	89.2
b.	No	27	10.8
TOTAL		250	100%

Source: Field Survey 2021.

Though there was no accurate instrument to know who has or has not ever had an accident, but through interview, 89.2% of the respondent admitted ever had accident. Out of the 223 (89.2%) that have ever had accident more than once as indicated in Table 5, which indicates the rate of injuries/ fatality already experience from casualty/ injuries report in Table 7 and the major causes in Table 8, indicates that drug and alcohol have claimed many damages to both lives and properties in the study area.

Table 6: Number of Times Drug Abusers and Non- Abusers had Accident.

S/No	No. of times	Abusers		Non Abusers	
		Frequency	%	Frequency	%
a.	None	2	0.90	15	55.56

b.	Once	62	27.80	7	25.93
c.	Twice	136	60.98	4	14.81
d.	Three times	23	10.32	1	3.70
	TOTAL	223	100%	27	100%

Source: Field Survey 2021.

Table 7: Respondent View on Casualty/Injury.

S/No	Consent	Frequency	Percentage (%)
a.	Yes	247	98.8
b.	No	3	1.2
	TOTAL	250	100%

Source: Field Survey 2021.

Table 8: - Major Cause(s) of the Accident.

S/No	Cause	Frequency	Percentage (%)
a.	Mechanical	20	8.97
b.	Medical	3	1.35
c.	Drug	137	61.43
d.	Alcohol	58	26.01
e.	2 nd party	3	1.34
f.	Others	2	0.90
	TOTAL	223	100%

Source: Field Survey 2021.

Table 9: - Major effect(s) of drugs on drivers.

S/No	Effect(s)	Frequency	Percentage (%)
a.	Increase sleepiness	48	19.2
b.	Decrease concentration	56	22.4
c.	It leads to accidents	98	39.2
d.	Cause high blood pressure	10	4
e.	Result to chronic fatigue/emotional disorders.	38	15.2
	TOTAL	250	100%

Source: Field Survey 2021.

The major effect of drugs abuse on commercial drivers as shown in Table 9 indicates that drug abuse leads to decrease in concentration and thus causing accidents. Smith; Keyl, Schneider and Dambacher (2001) reported that alcohol as an abused substance has been found to be a major factor in an estimated 70% of motorcycle drivers who are killed in an accident and are thought to have been drinking prior to the accident. Jackson, Usher and Louise; Mugo (2005) also warn that drug abuse is accompanied with medical issues such as lungs disease, stroke, cancer, mental disorder, risk of suicides, loss of Job and dentations of workers' productivity.

Table 10: Common offences committed by drug abused Commercial Drivers in Zaria.

S/No	Offence(s)	Frequency	Percentage (%)
a.	Disobedience to traffic laws.	80	32

b.	Wrong overtaking.	32	12.8
c.	Refusal to wear helmet/sit belt.	40	16
d.	Harassment of passengers	21	8.4
e.	Wrong parking.	9	3.6
f.	Wrong parking	9	3.6
g.	Thuggery	3	1.2
h.	Sexual harassment	4	1.6
i.	Theft (bad snatching)	10	4
j.	Kidnapping/Insurgency	36	14.4
k.	Others specify	5	2
	TOTAL	250	100%

Source: Field Survey 2021.

From the data gathered in Table 10 shows that, disobedience to traffic laws is the major (32%) offence committed by the commercial drivers such as refusal to wear helmet, seat belts. U.S. Department of Justice (1994) fact about drugs related crime includes violation of laws, prohibiting the possession, use, distribution or manufacturing drugs, motivation of user use for money gain, lack of participation in legitimate economy and exposure to situation that encourage crime.

Table 11: - Suggestions to Combat Drug Abused among Commercial Drivers in Zaria Urban Center.

S/No	Suggested Ways	Frequency	Percentage (%)
A	Through Drugs Testing of Drivers.	38	15.2
B	Drug-Safety/Educational updates of Drivers.	58	23.2
C	Drug Abuse Reduction Strategies by Stake holders	41	16.4
D	Wellness Programs & Strategies applicable to Victims.	6	2.4
E	The use of Local Authorities	108	43.2
F	Direct legislation	40	16
	TOTAL	250	100%

Source: Field Survey 2021.

From varied suggestions made in Table 16; 43.2% suggested the use of local Authorities be employed in commercial driving activities to combat drug abuse in Zaria urban center. Other relevant suggestions include drug-safety sensitization and educational updates of commercial Transporters, employment of drug abuse reduction strategies and direct legislation to eradicate their excesses. Aliyu and Alti-Mu'azu (2008) earlier suggested above all the needs for public awareness campaign on road safety education and health consequences of psychoactive substances used (drugs abuse) among commercial drivers.

TESTING OF HYPOTHESIS

Table 12: Accident frequency of drug abusers and the non-abusers

S/No.	Respondents	Accident Frequency				TOTAL
		None	Once	Twice	≤Three Times	

1.	Abusers	2	62	136	23	223
2.	Non-Abusers	15	7	4	1	27
	TOTAL	17	69	140	24	250

SOURCE: Field Survey; 2021

An expected frequency of the observed incidences of drug abuse in Zaria is;

$$l_{ij} = \frac{(RIT)(CIT)}{Gt} = \frac{(RowTotal)(ColumnTotal)}{GrandTotal}$$

Hence; $l_i = \frac{(223 \times 17)}{250} = 15.16$

Therefore $\chi^2 = \frac{\sum(O - E)^2}{E}$ i.e.ξof $\frac{(Observed - Expected)^2}{Expected}$, $\chi^2=115.56$

- The Critical value at (Alpha) value of 0.05 is = 7.82 which is far less than the calculated value of $\chi^2=115.56$;

Hence the Null (Ho) Hypothesis is hereby rejected and the alternative hypothesis accepted. This means that, there is a significant relationship between drug abuse and frequency of accident/casualties.

Thus, drug abuse must be checked and eradicated by all stakeholders among commercial bus and motor – cycle drivers in Zaria urban center in other to protect/prevent these negative occurrences.

CONCLUSION

The central objective of this study was to examine the level of drugs abuse and its consequences on commercial driver’s performances in Zaria urban centers in order to reduce accident rates among commercial drivers of motor-cycles & buses.

The result shows that drugs are been abused by these drivers in a random rate, with Tobacco (35.6%) and Marijuana (16.4%) taken the lead. 39.2% as the majority, sourced their drugs from hawkers and 18.8% from friends with farming as their parent main occupation. Though excuses were given for the abuse of these drugs as to overcome fear feelings (72.8%) and to gain acceptability by friends among others. This was not without its implication(s) as it results in frequent accidents, as 60.98% of the abusers had not less than twice accident rates and 98.8% confirm that the accidents were accompanied with casualties or injuries. Hence, suggestions to combat drug abuse by these commercial drivers include; the employment of drug safety sensitization strategies and the use of local authorities and legislatives to combat drug abuse among others.

RECOMMENDATIONS

The following recommendations were made to avert future occurrences;

- a) The Kaduna state government should make sure that Knowledge is provided to the drivers by professional licensing officers on how to use drugs to maintain health safety with rules or laws relating to legal & illegal drugs use.
- b) Consequences on the misuse of drugs must be spelt- out to these drivers on regular bases by Road safety professionals, medical and law enforcement agencies with punishment where applicable.
- c) The Federal and state government and Road Traffic Unions should provide appropriate health services and how the drivers can access them easily.
- d) Government should ensure that only medically sound commercial drivers’ are permitted to drive.
- e) Government, local authorities and other stake-holders must monitor the activities of commercial drivers of all automobiles as it is applicable to JAMB, WAEC and insecurity in the country since it has to do with lives and properties.

REFERENCE

- Achieve of the National Drug Intelligence Centre US. Department of Justice (2009); *National Drug Threat Assessment Summary*.
- Ahmadu Bello University Teaching Hospital (ABUTH 2011); Total Number of Road Traffic Accident from 2008-2010, *Department of Health information management*, Shika Zaria.
- Aliyu, A. A and Alti-Mu'azu, M (2008); Prevalence of Psychoactive Substances Use among Commercial Motorcyclists and its Health and Social Consequence in Zaria, Nigeria. *Ann Affirmed*, 7 (2); 67-71.
- Antwi, J. D; Adeje S; Asare, J.B and Twene, R (2003); *A Research Report on National survey on prevalence and Social Consequence of substance (Drug) Use among second cycle and out of school youth in Ghana*, 31-34.
- Fischer, G, Unger, A, and Koechi, B (2012), *Age Related aspect of Addiction*, in *journal of U.S Department of Health and Human service (H H S), Gerontology: 58 (6) published online 2012, 540-544*.
- Jackson D; Usher K;, O'Brien Louise (2005). Adolescent drug abuse: Helping families survive; *International Journal of Mental Health Nursing*, <https://doi.org/10.1111/j.1440-979.2005.00383.x>
- Joy, J.E.; Watson, S.J. & Benson, J.A (2000): Marijuana and Medicine: Assessing the Science Base Washington, D.C.: National Academic Press.
- Keyl,C; Schneider,A; Dambacher,M (2001):Time delay of vagally mediated cardiac baroreflex response varies with autonomic cardiovascular control, *Journal of Applied Physiology* 91(1):283-9, DOI: 10.1152/jappl.2001.91.1.283, July 200
- Manasseh, S.L. (2011): *Adolescence Drug Abusers: A Hindrance to Sustainable Development* in Zaria Urban center, Kaduna State. A Paper presented at the National Conference of the school of secondary Education Arts and Social Sciences, Federal College of Education Zaria.
- Mugo, W. (2005). Step up war on drug abuse. UN tells <http://www.eastandard.net/archives/news>.
- National Highway Traffic Safety Administration (2000). *Marijuana and alcohol Severely impede driving performance*. *Annals of Emergency Medicine*; 35:398-399.
- National Highway Traffic Safety Administration (2000). *Marijuana, alcohol and Actual driving performance*. *Dot HS.35*; 808, 939.
- Porter, J.M. (1999). An Outpatient Marijuana abstinence program for Court-referred Clients. Arlington, V.A; NAADAC.Professional Newsletter.
- Road Transport commission (RTC) *Report Book* (2011). Federal Road Safety Cooperation (FRSC) R.S13, Zaria Unit Command 18/ 10/2011
- Shehu, A. U and Idris, S. H (2008). Marijuana Smoking among Secondary School Students in Zaria, Nigeria: Factors Responsible and Effects on Academic Performance Department of Community Medicine, in *Annals of African Medicine Vol. 7, No.4; 2008: 175 – 179, Ahmadu Bello University, Zaria*.
- Sonderstrom, C.A.; Dischinger, P.C; Kerns, T.I and Trillis, A.L (1995). *Marijuana and Drug use among automobile and motorcycle drivers treated at a trauma center*. *Accident Analysis*, 25:131-135.
- U.S Department of Justice (1994).*Drug and Crime Data*; fact sheet; Drug related Crime from Office of Justice Programme Bureau of Justice Statistics, 1-5.
- World Health Organization. (2002). *World health report 2002. Reducing risks, promoting healthy life overview*. Geneva:
- Yakubu, S (2008). “*Effect of Municipal Solid Waste application on Solid Properties and Crop Qualities in Zaria Urban Area, Northern Nigeria*” A post-graduate Ph.D. seminar paper presented at the University of Abuja, Abuja.