Original Research Article

Riding under the influence: unravelling substance abuse patterns among motorcyclists in South-Eastern Nigeria

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ABSTRACT

Background: Drug and substance abuse has been outlined as a worldwide problem that is wreaking havoc on both social and public health across many nations. It is a global problem that affects both developed and developing countries. The objective of this study was to assess substance abuse among Okada riders in Nnewi, Anambra State, Eastern Nigeria.
Methods: Drug and substance abuse has been outlined as a worldwide problem that is wreaking havoc on both social and public health across many nations. It is a global problem that affects both developed and developing countries. The objective of this study was to assess substance abuse among Okada riders in Nnewi, Anambra State, Eastern Nigeria.
Results: About 221 Okada riders were assessed. Majority of them were middle aged. The mean age of the respondents were 39.5±11.1 years, with a range of 19-65 years. About 100% of the respondents were aware of substance abuse. Overall 73.3% of the respondents abuse at least a substance, with alcohol recording the highest use with 93.8% prevalence. About 77.2% of the abusers have taken these drugs before driving, and 65.2% have been involved in an accident, however only 5.4% admitted it was as a result of substance used.
Conclusions: The prevalence of substances use among Okada riders in Nnewi was high. There was however a high awareness of the negative consequences of use of substance. Non-governmental organizations should target Okada riders for interpersonal communication interventions to help mitigate the use of substances.

Keywords: Drug abuse, Motorcyclists, Okada riders, Prevalence, Substance use pattern

INTRODUCTION

Drug and substance abuse has been outlined as a worldwide problem that is wreaking havoc on both social and public health across many nations.[1] Substance abuse is defined as the use of tobacco, alcohol, prescription drugs, or other substances in ways that are detrimental to the individual's overall health. It can be said to be a pattern of drug usage in which the consumers consume the drugs in quantities or in ways that is harmful to themselves or others.[2,3] Substances that can be abused includes alcohol, tobacco, solvents, marijuana or Indian hemp, caffeine (Kola), coffee, cannabis, cocaine,

methamphetamine, benzodiazepines, palm wine and alcoholic herbal mixture.[4] These substances when taken by a person can modify perception, mood, cognition and behaviour of the individual, and can be associated with serious consequences like injuries, illness, disability, and death as well as chronic depression, and psychosis.[5] This drugs can be taken in many ways including eating (cannabis), smoking (cannabis, cigarette, methamphetamine), drinking (alcohol), sniffing or nasal insufflations (tobacco, cocaine) as well injection into the skin or veins (cocaine).[6]

Okada riders constitute an important group of road users globally especially in many developing countries like Brazil where it is an appealing mode of transportation in most cities due to poor quality of transportation, as well as the fact that it facilitates commuting during periods of heavy traffic.[7,8] Motorcycles have grown in popularity because they are a cost-effective mode of transportation, a useful tool for many people; and an alternative to other modes of transportation for daily commuting in big cities.[9] It is becoming an increasingly popular mode of public transportation for middle and low income earners, owing primary to their convenience, affordability, ease of use, manoeuvrability, and ability to navigate poor road networks and traffic jams.[5] However the increased use can also be attributed to lower acquisition and maintenance costs when compared to automobiles.[7]

Nigeria is a third world country that has not made the best use of its resources to attain economic growth.[10,11] One of the repercussions is the country's poor infrastructure, which includes an extremely poor transport network and a poor metro system; generally, it is difficult and unreliable to get to place of work or business on time in Nigeria by using public transport vehicles.[12] Because of this the use of motorcycles for passenger transport gained acceptance and recognition in Nigeria, and this recognition increased after the early 1980s economic recession, due to lack of adequate and sustainable public transport system, combined with poor urban planning in most cities which created a transportation gap for motorcyclists to fill in to meet passengers' transport needs.[6] Commercial motorcyclists contribute significantly to social life and poverty reduction in the communities where they operate owing to the relatively low costs of purchase, operation and maintenance; this has continued to attract a large number of job seekers, helping to reduce the unemployment rate.[13] Because of current lack of jobs in Nigeria, commercial motorcycle operation is therefore widely accepted as a job alternative for the teaming youth, new graduates and middle aged young men as a means of livelihood.[14]

However, the use of motorcycles for alternative public transport system in Nigeria also came with a high rate in the number of road traffic accident involving motorcycles, with the riders as well as the passengers sustaining so many degrees of injuries ranging from blunt abdominal, head injury, chest injuries and limb injuries.[15] And road traffic accidents have been found to be relatively associated with substance abuse.[16] A previous study noted that those in greater risk of substance use are commercial motorcyclists compared to the general population, which they often used to enhance performance and relaxation, and suppress fatigue.[17] This study evaluated prevalence of substance use and common type of substances abused, self reported road traffic accidents and association between social demographic variables and substance abuse among motorcyclists in South-Eastern Nigeria.

METHODS

Study area

This study was carried out in Nnewi North Local Government Area (LGA) of Anambra State, South-Eastern Nigeria, of which Nnewi happens to be the only town in the whole LGA. Nnewi is the second largest city in Anambra state and is well-known for its thriving commercial activity. Because of its people's ingenuity in the fabrication and sale of auto spare parts, Nnewi has been dubbed the "Japan of Africa". Everyone has an obvious sense of urgency, which leads to the usual hustle and bustle of business life and makes the motorcycle a highly sought after mode of transportation.[18]

Study design

The study design was a cross-sectional descriptive study among okada riders in Nnewi.

Study period

This study was undertaken over a six-month period, from June 2022 through to January 2023.

Inclusion criteria

The study population comprised of Okada riders in Nnewi that have been in business for at least a year, and those who gave their consent to be used for the study were included.

Exclusion criteria

Okada riders who did not consent to be used for the study, Okada riders who were absent from meeting during the study period and other commercial road users were also excluded from the study.

Sample size determination

The minimum sample size was determined using Fishers Formula ($n=z^2pq/d^2$). Prevalence was adapted from a previous study done among motorcyclists in Markudi, a city in North Central, Nigeria.[5] The calculated minimum

sample size was 114. To improve the power of this work, 221 respondents were sampled.

Sampling technique

Multistage sampling technique was used for this study. In Nnewi local government area there are 4 Okada quarters, Namely; Uruagu, Nnewichi, Otolo and Umudim.

Stage 1: Selection of quarters was done using simple random sampling technique and the two (2) Okada quarters selected were Nnewichi and Umudim among the 4 quarters in Nnewi.

Stage 2 (selection of units among the two quarters.): There are 11 okada units in Nnewichi and 8 Okada units in Umudim. Modified cluster sampling techniques was used to select 3 Okada units in Nnewichi and 2 Okada units in Umudim using bottle rolling to pick each unit. All the Okada riders in each unit selected were used as sample frame. 121 Okada riders were sampled in Nnewichi while 100 Okada riders were sampled in Umudim.

Data collection methods

Data were collected through a semi-structured, interviewer-administered, anonymous questionnaire after seeking verbal informed consent following a proper orientation of the participants of the study. The questionnaire was developed with guidance from several works already done on the subject/related topics.[4,22] This Questionnaire was validated among 22 Okada riders in Awka, Anambra State, Nigeria; which has similar characteristics with the population studied. This lead to the restructuring of some questions and some ambiguous questions were made clearer. No scale nor scoring system was employed in this study.

Data analysis

Data collected were coded and analysed using statistical package for social sciences (SPSS), version 25.0. Categorical variables were analysed using percentages and proportions, and continuous variables were analysed using mean and standard deviation. The association between categorical variables were analysed using Chi-square test. Significance of p value <0.05 was considered statistically significant.

RESULTS

Table 1 shows the distribution of participants according to socio-demographic variables. There were 221 respondents aged 19 to 65 years with mean age of 39.5±11.1, majority of the participants 155 (70.1%) attained secondary school education, post secondary school education recorded 7(3.2%) while 59 (26.7%) respondents attained at least primary education. Among the respondents 142 (64.3%) were married and 67

(30.3%) were single. Among the respondents 96.8% were Christians and Igbos respectively; however 67.4% of the respondents have been in Okada business for more than 5 years. Majority of the respondents (70.1%) reported average income ranging from 8000-12000 naira weekly.

Table 1: Socio-demographics of the study population.

Variable		Frequency	Percentage
Age	19-25	24	10.9
	26-30	32	14.5
	31-35	39	17.6
	36-40	25	11.3
	Above 40	101	45.7
	Mean age±SD	39.4±11.1	
	Age range	19-65	
Marital status	Single	67	30.3
	Married	142	64.3
	Divorced/ Separated	8	3.6
	Widowed	4	1.8
Ethnicity	Igbo	214	96.8
	Hausa	7	3.2
Religion	Christian	214	96.8
	Muslim	7	3.2
Educational qualification	Primary	59	26.7
	Secondary	155	70.1
	Tertiary	7	3.2
Years in Okada business	1-5	72	32.6
	6 -10	51	23.1
	11-15	40	18.1
	16-20	37	16.7
	21 and above	21	9.5
Average weekly income (Naira)	3000-7000	41	18.6
	8000-12000	155	70.1
	Above 12000	25	11.3

Table 2 showed respondents' awareness of substance abuse; all the respondents 221 (100%) have heard of substance abuse. Majority (99.1%) believed that substance abuse have a negative impact in the society.

Table 2: Respondents' awareness of substance abuse.

Variables		Frequency	Percentage
Ever heard of substance abuse	Yes	221	100.0
	No	0	0.0
Taking of these drugs have negative impact	Yes	219	99.1
	No	2	0.9

Figure 1 below shows the awareness of the respondents on the common substance of abuse. Alcohol and Cannabis recorded the highest awareness among the respondents with 100% and 98.2% respectively while solution and cough syrup recorded the least awareness with 31.2% and 5.0 % respectively.
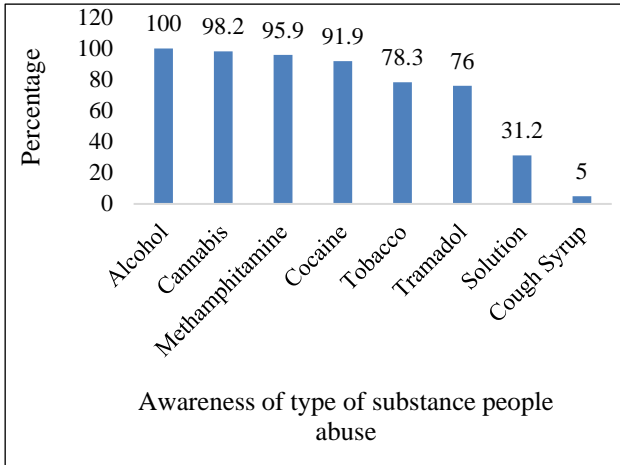

Figure 1: Awareness of type of substance people abuse.

Table 3 shows the prevalence of substance abuse among the participants were 162(73.3%). Among the respondents 76.5% have used at least one of these substances above 5 years, and 25.9% takes it at least once daily, while 32.1% takes it occasionally. Among the respondents that abuse substances, 25.9% have used at least one of these substances in the morning of the day of this research. The common reason proffered for taking these substances were for relaxation (46.6%), however about 7.2% believed people take it for pleasure.

Figure 2 shows common type of substances abused by the respondents; alcohol reported the highest prevalence with 93.3% followed by tobacco 26.5 %, while cannabis and tramadol reported 11.7% prevalence respectively, however cough syrup and methamphetamine recorded the least with prevalence of 2.5% and 1.2% respectively.

Table 4 recorded respondents' rate of self reported accidents among the respondents. Majority of the respondents' 216 (97.7%) believed that substance abuse can lead to road traffic accident. Among the respondents 22.8% have used these substances before driving, while 65.2% have had accident while driving, however only 5.4% attributed it to substance use.

Table 3: Prevalence of substance abuse among the respondents.

Variable		Frequency	Percentage
Do you take any of these drugs (n=221)	Yes	162	73.3
	No	59	26.7
Duration of intake in years (n=162)	0-5	38	23.5
	6-10	40	24.7
	11-15	34	20.9
	Above 15	50	30.9
How often do you take it (n=162)	Once daily	42	25.9
	Twice daily	18	11.1
	More than twice daily	1	0.6
	Once a week	28	17.3
	Twice a week	15	9.3
	More than twice a week	1	0.6
	Monthly	5	3.1
	Occasionally	52	32.1
When last taken (n=162)	Today	42	25.9
	Yesterday	44	27.2
	One week ago	64	39.5
	A month ago	12	7.4
Reasons for taking this drugs (n=221)	Relaxation	103	46.6
	Ease stress	52	23.5
	Focus on work	50	22.6
	Pleasure	16	7.2

Table 5 shows the association between socio-demographic variables of respondents and current substance use status. Among the respondents younger aged 19-35 years were more likely to use psychoactive substances compared to the older respondents of >35 year. This relationship was found statistically significant (X2 = 13.2, P<0.01).

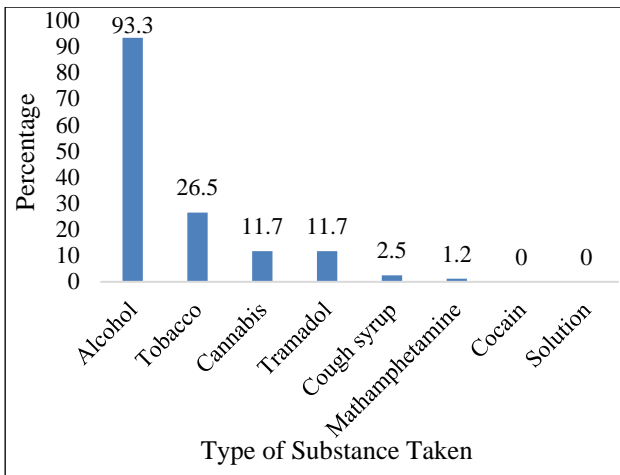**Figure 2: Type of substance taken by respondents.**

Table 4: Rate of self-reported road accidents among the respondents.

Variables		Frequency	Percentage
Can accident occur as a result of substance abuse?	Yes	216	97.7
	No	5	2.3
Taken before driving	Yes	37	22.8
	No	125	77.2
Ever involved in an accident	No	77	34.8
	Yes	144	65.2
Accident as a result of substance abuse	Yes	12	5.4
	No	209	94.6

Table 5: The Association between some socio-demographic variables with respondents' current substance abuse.

Variables		Respondents' current substance abuse		Chi-square	P value
		Yes	No		
Age(years)	19-25	24	0	13.2	0.010
	26-30	21	11		
	31-35	32	7		
	36-40	18	7		
	40 and above	68	33		
Educational status	Primary	40	19	15.8	<0.0001
	Secondary	122	33		
	Tertiary	1	6		
Marital status	Single	53	14	5.0	0.284
	Married	99	43		
	Divorced/separated	8	0		
Weekly income	3000 to 7000	30	11	2.6	0.267
	8000 to 12000	117	38		
	above 12000	15	1		

Among the correspondents the use of substance is less among the people with tertiary education 1 (14.2%) and higher than people with lower level of education, (78.7%) and (67.8%) for secondary and primary school graduates respectively. This relationship was found statistically significant (X2=15.8, p<0.0001).

Among the correspondents, substance abuse is more among unmarried and divorced/separated which recorded (79.1% and 100%) respectively, while married is 69.7%. this relationship was not statistically significant (X2=5.03, p=0.284).

Among the respondents average weekly income range between 8000-12000 were more likely to abuse substances however this relationship was not statistically significant (X2=2.6, p=0.267).

DISCUSSION

Socio-demographics

The aim of this study is to assess substance abuse among Okada riders in Nnewi, Anambra State South eastern Nigeria. The socio-demographic factors in this study showed that the age of majority of the respondents' ranges from 19-65 years with mean age of 39.5±11.1, the age range of respondents is line with what was reported in previous study by Adogu et al among commercial motorcyclists in an urban area of Nigeria.[19] Most of them were Igbos 214 (96.8%), and married 142 (64.3%) which is in agreement with a similar study done by Raji et al among commercial motorcyclist in Sokoto metropolis, Northwest Nigeria.[6] Majority of the respondents 155 (70.1%) had secondary school education which is in agreement with the study done among commercial motorcyclists in Makurdi metropolis by Bako et al and a

work done by Afolaranmi et al among commercial tricycle operators in Jos Plateau State, but differs with the study done by Gudaji et al among commercial motorcycle operators in Kano, Nigeria which had 40.1% of the respondents with secondary education.[5,20,21] The respondents' commercial motorcycling experience ranges from 1-25 years with an average weekly income ranges of 4000 to 17000 naira which is in line with a study done by Raji MO et al among commercial motorcyclists in Sokoto metropolis, Northwestern Nigeria.[6]

Awareness of substance use

There is high awareness of substance use among the respondents 221(100%), which was higher when compared with a study done in Ijero township, Ekiti state by Fasoro et al.[22] Majority of the respondents noted the highest awareness for alcohol 221 (100.0%), while cough syrup recorded the lowest awareness 11 (5.0%); this shows that the participants were aware of the use of substances and the type of substances abused most in their environment. 219 (99.1%) believed that taking of drugs other than medical use has negative impact, which is in agreement with the study by Ishaku et al among commercial motorcyclists in Makurdi metropolis which recorded 96.0% positive answer to the negativity of substance abuse.[5]

Prevalence of substance abuse among the respondents

From this study it was found out that 162 (73.3%) use at least one of these substances which is far higher when compared with a similar studies done among commercial motorcyclist in Kano by Gudaji et al, and a study done among commercial tricycles drivers in Jos by Afolaranmi TO, but lower in prevalence compared to a study done by Ishaku et al among commercial motorcyclists in Makurdi.[21,23,5] Among the respondent that use drugs, 152 (93.8%) of them use alcohol, this shows that alcohol is most used drug among the respondents followed by tobacco which recorded 43 (26.5) as the second most used drugs among the respondents. Tramadol and cannabis recorded 19 (11.7%) as the third most used drugs among the respondents. These shows that alcohol, tobacco, Tramadol and cannabis is most abused drugs by the participants in descending order which is collaborated by other studies done in the past among similar population in Makurdi by Ishaku et al, Ijero township by Fasoro et al and Ado-ekiti by Ogundipe et al which recorded that the 4 most used drugs as alcohol, tobacco, Tramadol and cannabis.[5,22,20] However, it contrasted with other studies done in the core northern part of Nigeria; Kaduna by Muazu et al among similar population and Katsina by Jamilu YR among Okada riders which recorded cannabis, solution, caffeine, coffee; and Kolanut, cigarette, snuff, petrol respectively as the common abused drugs among the similar population as in this study.[4,2] These differences may be attributed to religious and cultural differences among the population.[21]

Among the respondents 50 (22.6%) have used this drugs above 15 years in which 52 (23.5%) of the respondents takes this drugs occasionally, while 42 (19.0%) takes it once daily, 28 (12.7%) takes twice daily and about 28 (12.7%) takes it once a week. Among the participants 64 (29.0%) took one of these drugs within last week, 43 (19.5%) took one of the drugs the previous day; however 42 (19.0%) of the respondents have taken any of these drugs in the day of this research which is in line with a study done in Ado-ekiti by Ogundipe et al where 20% take alcohol in morning before work.[24] The common reason proffered for taking these substances were for relaxation, 103 (46.6%), which is in line with a study done in Makurdi by Ishaku et al though with a higher prevalence; however 50 (22.6%) believed people take it to help them focus on their jobs which is a similar reason in a study done in Sokoto metropolis by Raji et al while 16 (7.2%) believes it's just for pleasure though higher percentage was reported.[5,6] These may be because Okada riders work under harsh condition and spend longer time at work on bad road which contributes to their stress.[17]

Self-reported road accidents among the respondents

Most of the respondents, 216 (97.7%), believed that road traffic accidents can occur as a result of taking these drugs, which is in agreement with a similar study done in Makurdi by Ishaku et al among Okada Riders which reported that 96.0% of the respondents believed that the use of psychotic substance can result in road traffic accident[5]; the findings of this study is also in similarity with a study done among Okada riders in Kano by Raji et al which recorded that 92.1% of the respondents believed that substance use can lead to road traffic accident.[6] 37 (22.8%) respondents takes these substances before driving to work, which contrasts similar study done among Okada riders in Ijero township Ekiti state by Fasoro et al in which participants reported higher (40.4%) use of substance before driving.[22] This shows that the number of the respondents in this study who takes drugs before driving are less compared to previous works, however 144 (65.2%) of the respondents have involved in road traffic accident in this line of work nevertheless this agreed with a previous study by Fasoro et al among the same population in Ijero township Ekiti state which reported 65.1% road traffic accident among the respondents, and slightly higher than a similar study done by Ogundipe et al in Ado Ekiti which recorded 53.3% of the respondents have been involved in a road traffic accidents.[22] Nevertheless only 12 (5.4%) of the respondents in this study reported it as a result of substance use which contrasted a similar work by Fasoro et al which reported 23.9% road traffic accidents as a result of substance abuse.[22]

Socio-demographic variables with respondents' current substance abuse

Socio-demographic variables are intrinsic factors in the abuse of substances; the respondents aged 35 years and

below were more likely to abuse substances more than those above the age of 35, which is in agreement with a cross sectional study by Jade Vincent Quintero among adults who has history of substance use diagnosis in Western Carolina, where it was discovered that males and those of younger ages were particularly vulnerable to substance abuse; and also in line with a cross sectional research conducted by Gudaji MI and Habib ZG among commercial motorcycle operator in Kano Nigeria which noted that younger age groups (22-35 years) were found to be more likely to use psychoactive substances than those older than 35 years.[25,21] Those with lower level of education are more likely to abuse drugs, which is in agreement with a cross sectional research conducted by Gudaji MI and Habib ZG among commercial motorcycle operator in Kano Nigeria where participants with less education reported more substance use than those with more education.[21] Singles and divorced are more likely to abuse drugs, which is in line with a cross sectional study done among African Americans by Cranford et al where marital status was found to be significant predictors for African Americans, in which those who were divorced or separated had higher alcohol use and that people arrested for intoxication were less likely to be married and had higher rate of marital separation.[4] Also in a cross sectional study conducted by Sahraian et al among medical students in Shiraz recorded that those students who are married had lower rate of alcohol abuse than those who are not married, hence showing that marital status appeared to be related to substance abuse and potential development of substance related disorders.[26] From this study, it was shown that most of the okada riders are low income earners which shows the likelihood and their vulnerability to abuse substances; this is in agreement with a cross sectional study done among African American in the USA by Zapolski et al which shows that the highest rate of heavy drinking are found among African American men with low incomes ranging from $10,000-$15,000.[27]

This study has few limitations. This study could not access causality/association of road traffic accidents with substance abuse among this population. Hence, further study in this area among this population is recommended.

CONCLUSION

This study showed that the prevalence of substance abuse especially alcohol and tobacco is very high among okada riders in Nnewi. Despite good awareness of substance abuse and the consequences associated with it, the use was still relatively high. It also shows that high percentage of Okada riders have been involved in a road traffic accident though only a few of them believed it's as a result of substance abuse. Social demographic factors played a huge role in substance abuse as it shows that the young aged, single, divorced and separated are the most vulnerable to abuse substance.

Recommendations

This study showed that the use of substance among Okada riders is high. We therefore recommend that the government and non-governmental organizations get involved in creating awareness about the implication of using these substances to their health.

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