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Patterns of Substance Use in a Sample of Commercial Motorcycle Riders in Nsukka Local Government Area, Enugu State

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Abstract

The study investigated patterns of substance use in a sample of commercial motorcycle riders in Nsukka Local Government Area (LGA), Enugu State. A cross-sectional survey was conducted between January and April, 2023 at various designated units of the commercial motorcycle riders in Nsukka LGA. A total number of 600 commercial motorcycle riders participated. Data collection was done using self-developed Patterns of Substance Use Questionnaire (PSUQ), in which part of it was adapted from Drug Use Screening Inventory (revised DUSI-R). Descriptive statistics of frequency, percentage, and chi-square statistics were used for analyses. The findings revealed that commercial motorcycle riders mostly used over the counter medications (69.3%), prescription pain killers (61.5%), alcohol (45.5%), and caffeine (41.0%) in the home, followed by workplaces and public places. Commercial motorcycle riders mostly used over the counter medications (83.2%), prescription pain killers (67.4%), alcohol (48.3%), smoking tobacco (47.2%), caffeine (46.2%), cannabis (35.1%), and heroine/morphines/opiates (21.4%) daily other than weekly. Education level ($p = .007 < 0.05$) and marital status ($p = .036 < 0.05$) were significantly associated with the patterns of substance use among commercial motorcycle riders. However, Enugu State government should strengthen existing laws and policies on substance abuse by enforcing a ban on the sale of substances with psychoactive properties to any individual that convey passengers from one place to another in the course of operation, irrespective of the setting (home, workplaces, public places) or period (daily, weekly) the substances may be requested.

Keywords: Pattern, Substance use, Commercial motorcycle riders, Alcohol, Illicit drugs

Introduction

Substance use is an important contributor to the global burden of disease with attendant physical, social, and psychological effects among various groups including commercial motorcycle riders. Riding under the influence of substances is a major public health concern that has a relevant impact on the operators' health and safety, increasing the risk of injuries and traffic accidents, potentially affecting the general public health as well. World Health Organization (WHO, 2018) reported that substance use is among the leading cause of death globally, and more than 275 million people use illicit drugs, accounting for 5.6 per cent of the global population, and 31 million drug users have an addiction.

The global use of substances is high. Substance use appears to cross all lines of race, culture, education, and socio-economic status, leaving no groups untouched by its devastating effects. National Survey on Drug Use and Health (2020) disclosed that the use of substances among adults was high as at 2016 through 2019; specifying that alcohol and other illicit substances use was high among young adults; with 57.1 per cent in 2016, 56.3 per cent in 2017, 55.1 per cent in 2018, and 54.3 per cent in 2019. National Survey on Drug Use and Health (2020) further revealed that the mortality statistics show that illicit substances claim about 200,000 lives a year and about 500 million a year for tobacco. About 269 million

people used drugs worldwide in 2018, which is 30 per cent more than the report in 2009, while over 35 million people suffered from drug use disorders in 2020 (United Nations Office on Drugs and Crime, 2020).

Nigeria's report on substance use appears to be high. Nearly 14.4 per cent of the adult population in Nigeria (about 14.3 million people) aged between 15 and 64 years reported a considerable level of use of substances - a rate much higher than the 2016 global annual prevalence of 5.6 per cent among adult population (National Bureau of Statistics [NBS], 2018). In addition, it showed that the highest level of drug use was recorded among people aged 25-39 years, with Cannabis being the most widely used drug followed by opiods. According to Ojo (2019), the 2018 report by United Nations Office on Drugs and Crime in collaboration with the National Bureau of Statistics and Centre for Research and Information on Substance Abuse (CRISA), and funded by the European Union, revealed that Nigeria has 10.6 million users of Cannabis; 4.6 million users of pharmaceutical opioids, 238,000 amphetamine users, and one out of every five users of drugs is already dependent.

The rate of substance use in Enugu State is becoming worrisome and unprecedented. Unaogu, Onu, Iteke, Tukur, and Oka (2017) indicated that the primary substances of abuse were Cannabis (81.4%) and alcohol (16.5%), while cocaine and other stimulants were rarely used in Enugu State (1.2%). Dibia, Nwagu, and Odo (2020) affirmed that the most commonly used and abused substances among rural communities in Enugu State was alcohol, cigarette, and Cannabis.

Facts from different literature has shown that the use of substances such as stimulants, depressants, hallucinogens, cannabis, narcotic analgesics, inhalants, and dissociative anaesthetics, can manifest in different patterns.

Pattern is the forms in which something may happen or occur. Spivak and Shannon (2015) described pattern as the various forms something may take place. Pattern refers to a repeated manner in which commercial motorcycle riders make use of different substances as it relates to spatial, temporal, and demographic variations. Also, Global Burden of Disease (GBD, 2021) differentiated pattern into three main forms of variations, namely: spatial, temporal, and demographic patterns. Spatial pattern refers to the use of substances according to locations, such as: at home, at workplace, and at public places (street, garage, parks, beer parlour and joints) within Nsukka Local Government Area in particular. Temporal pattern refers to the use of substances among commercial motorcycle riders according to time, such as daily and weekly. While, demographic pattern refers to pattern of substance use among commercial motorcycle riders, which can be attributed to personal factors, such as age, level of education, and marital status.

Commercial motorcycle riders need to maintain full cognitive alertness and safe operating practices while riding at all times. Information regarding patterns of substance use is essential in preventing health compromising behaviours among substance users particularly motorcycle riders. The Federal Road Safety Corps and other civil organizations have continued to put up campaigns against substance use before or while driving cars or riding motorcycles. Most commercial motorcycle riders believe that the use of substances, such as alcohol, cigarette, kola nut, marijuana, and other central nervous system stimulants will significantly improve their operation and keep sleep at bay for as long as possible. Commercial motorcycle riders choose substances as a form of performance-enhancing drug, to increase productivity, to keep awake while riding and to augment their strength with substances as an adjustment strategy to stressful jobs, overcome depression, and overcome daily problems and for pleasure. Substance use poses a significant threat to the health, social and economic fabric of families, communities, and nations.

There is virtually no prior study concerning commercial motorcycle riders with respect to patterns of substance use in Nsukka Local Government Area, Enugu State. Based

on these facts, the study investigated the patterns of substance use in a sample of commercial motorcycle riders in Nsukka Local Government Area, Enugu State. Specifically, the study determined the substances commonly used by commercial motorcycle riders in Nsukka Local Government Area, Enugu State; the spatial pattern of substance use among commercial motorcycle riders in Nsukka Local Government Area, Enugu State; the temporal pattern of substance use among commercial motorcycle riders in Nsukka Local Government Area, Enugu State; the demographic (age, education level, and marital status) pattern of substance use among commercial motorcycle riders in Nsukka Local Government Area, Enugu State; and hypothesized that there is no significant association between the patterns of substance use and (age, education level, and marital status) among commercial motorcycle riders in Nsukka Local Government Area, Enugu State.

The study findings would inspire Enugu State government to strengthen existing laws and policies on substance abuse by enforcing a ban on the sale of alcohol, tobacco products, and over the counter medications with psychoactive properties to any individual that convey passengers from one place to another in the course of operation, irrespective of the setting (home, workplaces, public places) or period (daily, weekly) the substances may be requested.

Materials and Methods

Study design and setting

A cross-sectional survey was conducted between January and April, 2023 at various designated units of the commercial motorcycle riders in Nsukka Local Government Area, Enugu State. Nsukka LGA shares boundaries with Igboeze South LGA on the North, Kogi State on the North West and West, Udenu LGA on the North East, Isi-Uzo LGA on the East, and Igbo-Etiti LGA on the South. The area was chosen for the study because the use of commercial motorcycle was widely adopted as the fastest means of transportation, and the use of substances while riding tends to be ‘high’ among commercial motorcycle riders in Nsukka, because the commercial motorcycle riders are often seen consuming substances at various places and time leading to reckless riding and the resultant frequent road traffic accident. Most of daily media reports in the area, border on cases of road traffic accidents caused by reckless riding by commercial motorcycle riders, associated with their alarming rate of substance use.

Participants

The study participants consisted of commercial motorcycle riders in the study area. Only commercial motorcycle riders in different units, who had time and expressed their consent in responding to the questionnaires were included in the study population.

Sampling procedures

A sample size of 600 commercial motorcycle riders was used for the study. The sample size was determined using Cohen, Manion, and Morrison (2011), which stipulated that when a population size is 2,500 and above at 95 per cent confidence level (5% interval), the sample size should be 333 or above. The simple random sampling and convenience sampling techniques were employed to draw the sample size for the study. The simple random sampling technique of balloting without replacement was used to select 20 out of 31 registered commercial motorcycle units in Nsukka LGA, Enugu State. This was to ensure good representation of the units and participants. The convenience sampling technique was used to select 30 commercial motorcycle riders from each of the 20 drawn registered units, hence 600 commercial motorcycle riders were drawn for the study. Convenience in the sense that commercial motorcycle riders in different units, who had time and expressed their consent in responding to the questionnaires, were used.

Measures

Data collection was done using a validated self-structured Patterns of Substance Use Questionnaire (PSUQ). The PSUQ consists of two parts: Part I consists of three socio-demographic (age, education level, and marital status). Age was measured as a continuous variable (18-30 years, 31-43 years, and 44+ years). Education level was categorized into four groups (no formal education, primary education, secondary education, and tertiary education). Marital status was grouped into four categories (single, married, and divorced, widowed/separated). Part II consists of 26 questions with non-dichotomous response options covering on spatial and temporal patterns of substance use.

Face and content validity of the questionnaire was evaluated by a professional board of five experts in public health education, and measurement and evaluation, as well was tested for internal consistency. The instrument yielded internal consistency (reliability) indices of 0.880 and 0.877 for spatial and temporal patterns sections respectively using Cronbach's alpha method.

Data collection procedure

This research was developed in accordance with the Ethical Principles of the World Medical Association Declaration of Helsinki for medical research involving human subjects (World Medical Association, 2013), and the research was approved by the Research Ethics Committee of the Faculty of Education, University of Nigeria, Nsukka (UNN/FE/REC22/36).

After obtaining permission from the chairmen of the various unit of commercial motorcycle riders Association in Nsukka Local Government Area, for data collection. The researchers explained the objectives of research to the participants and they were reassured that their responses are confidential and no personal identifiers will be disclosed. The questionnaire was administered with the aid of well-trained interviewers. A total number of 600 questionnaires were filled out in the process. 577 copies were returned which gave a return rate of 96.2 per cent, and 23 copies were not returned. Out of the returned copies, 16 were not duly filled out. Only 561 questionnaires duly filled out were used for analyses.

Data analysis

The sorted data were coded into IBM Statistical Package for Social Sciences (SPSS) version 25, and analysed using frequency, percentage, and pearson chi-square statistics.

The criterion for deciding patterns (spatial & temporal) of substance use was based on a percentage score of 20 per cent or above (Aliyu et al., 2011; Ishaku et al., 2020). Hence, a percentage score of 20 per cent or above was interpreted as a reported pattern in a particular variation. The hypotheses were tested using pearson chi-square statistics at .05 level of significance.

Results

Table 1: Spatial Pattern of Substance Use Among Commercial Motorcycle Riders (n=561)

S/n	Substances Used	Home f (%)	Workplaces f (%)	Public Places f (%)	None f (%)
1	Alcohol	255 (45.5)	55 (9.8)	137 (24.4)	114 (20.3)
2	Amphetamines/Methamphetamines (Mkpuru Mmiri)	59 (10.5)	63 (11.2)	10 (1.8)	429 (76.5)
3	Cocaine/crack	0	0	0	561 (100.0)
4	Over the counter medications, e.g.	389(69.3)	118 (21.0)	31 (5.5)	23 (4.1)

	Panadol, paracetamol etc				
5	Heroin/morphine/opiates	91 (16.2)	42 (7.5)	7 (1.2)	421 (75.0)
6	Prescription pain killer pills	345 (61.5)	95 (16.9)	27 (4.8)	94 (16.8)
7	Barbiturates (e.g. sleeping pills)	73 (13.0)	35 (6.2)	28 (5.0)	425 (75.8)
8	Tranquilizer pills (e.g. anxiety reduction drugs)	62 (11.1)	35 (6.2)	15 (2.7)	449 (80.0)
9	Caffeine (.e.g. kola-nut, stay awake pills)	230 (41.0)	99 (17.6)	42 (7.5)	190 (33.9)
10	Cannabis (e.g. marijuana, Igboo, weed, ganja]	78 (13.9)	82 (14.6)	107 (19.1)	294 (52.4)
11	Volatile solvents (e.g. paint thinners and removers, correction fluids, glue, dry-cleaning fluids, gasoline)	21 (3.7)	24 (4.3)	16 (2.9)	500 (89.1)
12	Smoking Tobacco	121 (21.6)	68 (12.1)	116 (20.7)	256 (45.6)
13	Chewing Tobacco	89 (15.9)	29 (5.2)	95 (16.9)	348 (62.0)

Table 1 shows that commercial motorcycle riders mostly used over the counter medications (69.3%), prescription pain killers (61.5%), alcohol (45.5%), and caffeine (41.0%) in the home. Also, the table shows that over the counter medications (21.0%) was commonly used in the workplaces, while alcohol (24.4%) and smoking tobacco (20.7%) are commonly used in the public places. Furthermore, commercial motorcycle riders did not use cocaine in any of the settings.

Table 2: Temporal Pattern of Substance Use Among Commercial Motorcycle Riders (n=561)

S/n	Substances Used	Daily f (%)	Weekly f (%)	None f (%)
1	Alcohol	271 (48.3)	166 (29.6)	124(22.1)
2	Amphetamines/Methamphetamines (Mkpuru Mmiri)	107 (19.1)	27 (4.8)	427 (76.1)
3	Cocaine/crack	0 (0.0)	0 (0.0)	561 (100.0)
4	Over the counter medications, e.g. Panadol, paracetamol etc	467 (83.2)	71 (12.7)	23 (4.1)
5	Heroin/morphine/opiates	120 (21.4)	27 (4.8)	414 (73.8)
6	Prescription pain killer pills	378 (67.4)	84 (15.0)	99 (17.6)
7	Barbiturates (e.g. sleeping pills)	108 (19.3)	39 (7.0)	414 (73.8)
8	Tranquilizer pills (e.g. anxiety reduction drugs)	98 (17.5)	21 (3.7)	442 (78.8)
9	Caffeine (.e.g. kola-nut, stay awake pills)	259 (46.2)	107 (19.1)	195 (34.8)
10	Cannabis (e.g. marijuana, Igboo, weed, ganja]	197 (35.1)	51 (9.1)	313 (55.8)
11	Volatile solvents (e.g. paint thinners and removers, correction fluids, glue, dry-cleaning fluids, gasoline)	53 (9.4)	14 (2.5)	494 (88.1)
12	Smoking Tobacco	265 (47.2)	38 (6.8)	258 (46.0)
13	Chewing Tobacco	167 (29.8)	44 (7.8)	350 (62.4)

Table 2 shows that commercial motorcycle riders mostly used over the counter medications (83.2%), prescription pain killers (67.4%), alcohol (48.3%), smoking tobacco (47.2%), caffeine (46.2%), cannabis (35.1%), and heroine/morphines/opiates (21.4%) daily.

Also, the table shows that alcohol (29.6%) was mostly used by commercial motorcycle riders weekly. Furthermore, commercial motorcycle riders did not report using cocaine daily or weekly.

Table 3: Demographic Pattern of Substance Use Among Commercial Motorcycle Riders Based on Age (n=561)

S/n	Substances Used	18-30years (n = 228) f (%)	31-43years (n = 173) f (%)	44+years (n = 160) f (%)
1	Alcohol	173 (75.9)	132 (76.3)	125(78.1)
2	Amphetamines/Methamphetamines (Mkpuru Mmiri)	74 (32.5)	32 (18.5)	22 (13.8)
3	Cocaine/crack	0 (0.0)	0 (0.0)	0 (0.0)
4	Over the counter medications, e.g. Panadol, paracetamol etc.	212 (93.0)	159 (91.9)	151 (94.4)
5	Heroin/morphine/opiates	58 (25.4)	51 (29.5)	29 (18.1)
6	Prescription pain killer pills	187 (82.0)	151 (87.3)	134 (83.8)
7	Barbiturates (e.g. sleeping pills)	69 (30.3)	50 (28.9)	28 (17.5)
8	Tranquilizer pills (e.g. anxiety reduction drugs)	54 (23.7)	39 (22.5)	29 (18.1)
9	Caffeine (.e.g. kola-nut, stay awake pills)	130 (57.0)	106 (61.3)	130 (81.3)
10	Cannabis (e.g. marijuana, Igboo, weed, ganja]	108 (47.4)	79 (45.7)	79 (49.4)
11	Volatile solvents (e.g. paint thinners and removers, correction fluids, glue, dry-cleaning fluids, gasoline)	28 (12.3)	20 (11.6)	14 (8.8)
12	Smoking Tobacco	128 (56.1)	98 (56.6)	82 (51.2)
13	Chewing Tobacco	82 (36.0)	65 (37.6)	73 (45.6)
	Overall percentage	**35.1**	**36.4**	**34.4**

Table 3 shows that overall, commercial motorcycle riders aged 31-43 years (36.4%) mostly used substances, particularly prescription pain killer pills (87.3%), and smoking tobacco (56.6%) more than those aged 18-30 years (35.1%) and 44+ years (34.4%) respectively.

Table 4: Demographic Pattern of Substance Use Among Commercial Motorcycle Riders Based on Education Level (n=561)

S/n	Substances Used	NFE (n = 68) f (%)	PE (n = 117) f (%)	SE (n = 237) f (%)	TE (n = 139) f (%)
1	Alcohol	48 (70.6)	83 (70.9)	187 (78.9)	112 (80.6)
2	Amphetamines/Methamphetamines (Mkpuru Mmiri)	20 (29.4)	22 (18.8)	46 (19.4)	40 (28.8)
3	Cocaine/crack	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
4	Over the counter medications, e.g. Panadol, paracetamol etc	62 (91.2)	106 (90.6)	220 (92.8)	134 (96.4)
5	Heroin/morphine/opiates	16 (23.5)	32 (27.4)	54 (22.8)	36 (25.9)
6	Prescription pain killer pills	59 (86.8)	93 (79.5)	207 (87.3)	113 (81.3)
7	Barbiturates (e.g. sleeping pills)	15 (22.1)	43 (36.8)	46 (19.4)	43 (30.9)
8	Tranquilizer pills (e.g. anxiety reduction drugs)	16 (23.5)	28 (23.9)	39 (16.5)	39 (28.1)

9	Caffeine (.e.g. kola-nut, stay awake pills)	52 (76.5)	73 (62.4)	157 (66.2)	84 (60.4)
10	Cannabis (e.g. marijuana, Igboo, weed, ganja]	39 (57.4)	61 (52.1)	87 (36.7)	79 (56.8)
11	Volatile solvents (e.g. paint thinners and removers, correction fluids, glue, dry-cleaning fluids, gasoline)	12 (17.6)	12 (10.3)	30 (12.7)	8 (5.8)
12	Smoking Tobacco	35 (51.5)	71 (60.7)	112 (47.3)	90 (64.7)
13	Chewing Tobacco	25 (36.8)	43 (36.8)	89 (37.6)	63 (45.3)
	Overall percentage	**45.6**	**34.2**	**28.3**	**43.2**

Key: NFE = No Formal Education, PE = Primary Education; SE – Secondary Education; TE = Tertiary Education

Table 4 shows that overall, commercial motorcycle riders with no formal education (45.6%) mostly used substances, particularly amphetamines/metamphetamines (29.4%), caffeine (76.5%), cannabis (57.4%), and volatile solvents (17.6%) more than those with tertiary (43.2%), primary (34.2%), and secondary (28.3%) education respectively.

Table 5: Demographic Pattern of Substance Use Among Commercial Motorcycle Riders Based on Marital Status (n=561)

S/n	Substances Used	Single (n = 204) f (%)	Married (n = 282) f (%)	Divorced (n = 47) f (%)	Widowed/ Separated (n = 28) f (%)
1	Alcohol	153 (75.0)	221 (78.4)	34 (72.3)	22 (78.6)
2	Amphetamines/Methamphetamines (Mkpuru Mmiri)	53 (26.0)	56 (19.9)	15 (31.9)	4 (14.3)
3	Cocaine/crack	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
4	Over the counter medications, e.g. Panadol, paracetamol etc	187 (91.7)	260 (92.2)	47 (100.0)	28 (100.0)
5	Heroin/morphine/opiates	51 (25.0)	70 (24.8)	12 (25.5)	5 (17.9)
6	Prescription pain killer pills	173 (84.8)	240 (85.1)	37 (78.7)	22 (78.6)
7	Barbiturates (e.g. sleeping pills)	49 (24.0)	74 (26.2)	17 (36.2)	7 (25.0)
8	Tranquilizer pills (e.g. anxiety reduction drugs)	37 (18.1)	58 (20.6)	17 (36.2)	10 (35.7)
9	Caffeine (.e.g. kola-nut, stay awake pills)	126 (61.8)	184 (65.2)	36 (76.6)	20 (71.4)
10	Cannabis (e.g. marijuana, Igboo, weed, ganja]	110 (53.9)	118 (41.8)	29 (61.7)	9 (32.1)
11	Volatile solvents (e.g. paint thinners and removers, correction fluids, glue, dry-cleaning fluids, gasoline)	30 (14.7)	23 (8.2)	3 (6.4)	6 (21.4)
12	Smoking Tobacco	118 (57.8)	147 (52.1)	31 (66.0)	12 (42.9)
13	Chewing Tobacco	76 (37.3)	114 (40.4)	22 (46.8)	8 (28.6)
	Overall percentage	**37.3**	**30.5**	**46.8**	**50.0**

Table 5 shows that overall, commercial motorcycle riders that are widowed/separated (50.0%) mostly used substances, particularly alcohol (78.6%), over the counter medications

(100.0%), and volatile solvents (21.4%) more than those divorced (46.8%), single (37.3%), and married (30.5%) respectively.

Table 6: Chi-square Test of Patterns of Substance Use Among Commercial Motorcycle Riders Based on Age (*n* = 561)

S/n	Substance Used	18-30years (n = 228) O (E)	31-43years (n = 173) O (E)	44+years (n =160) O (E)	$\chi^{2\text{-cal}}$	df	p-value
	Overall	80 (80.5)	63 (61.1)	55 (56.5)	.159	2	.924

***Significant at p≤0.05 O=Observed Frequency, E=Expected Frequency**

Table 6 shows that the null hypothesis of no significant association between the patterns of substance use and age among commercial motorcycle riders (χ^2 = .159, p = .924 >.05) was not rejected, thus not significant. This implies that the patterns of substance use among commercial motorcycle riders were the same based on age. However, there was no significant association between the patterns of substance use and age among commercial motorcycle riders.

Table 7: Chi-square Test of Patterns of Substance Use Among Commercial Motorcycle Riders on Education Level (*n* = 561)

S/n	Substance Used	NFE (n = 68) O (E)	PE (n = 117) O (E)	SE (n = 237) O (E)	TE (n = 139) O (E)	$\chi^{2\text{-cal}}$	df	p-value
	Overall	31 (24.0)	40 (41.3)	67 (83.6)	60 (49.1)	12.109*	3	.007

***Significant at p≤0.05 O=Observed Frequency, E=Expected Frequency**

Table 7 shows that the null hypothesis of no significant association between the patterns of substance use and education level among commercial motorcycle riders (χ^2 = 12.109, p = .007< 0.05) was rejected, thus significant. This implies that the patterns of substance use among commercial motorcycle riders were not the same based on education level. However, there was a significant association between the patterns of substance use and education level among commercial motorcycle riders.

Table 8: Chi-square Test of Patterns of Substance Use Among Commercial Motorcycle Riders Based on Marital Status (*n* = 561)

S/n	Substance Used	Single (n = 204) O (E)	Married (n = 282) O (E)	Divorced (n = 47) O (E)	Wid/Sep (n = 28) O (E)	$\chi^{2\text{-cal}}$	df	p-value
	Overall	76 (72.0)	86 (99.5)	22 (16.6)	14 (9.9)	8.566*	3	.036

***Significant at p≤0.05 O=Observed Frequency, E=Expected Frequency**

Table 8 shows that the null hypothesis of no significant association between the patterns of substance use and marital status among commercial motorcycle riders (χ^2 = 8.566, p = .036 <.05) was rejected, thus significant. This implies that the patterns of substance use among commercial motorcycle riders were not the same based on marital status. However, there was a significant association between the patterns of substance use and marital status among commercial motorcycle riders.

Discussion

The findings in Table 1 revealed that commercial motorcycle riders mostly used over the counter medications, prescription pain killers, alcohol, and caffeine in the home. Over the counter medications was commonly used in the workplaces, while alcohol and smoking tobacco were commonly used in the public places. Cocaine was not used in any of the settings. These results were surprising and hence, not expected. This is because studies have shown that cocaine was used in Nigeria (Dantsoho & Jamilu, 2020; Nkporbu, Oti, & Metu, 2022). The findings were in line with the finding of Gangadi et al. (2021) who reported that around two out of five people in Greece are exposed to secondhand smoking in their workplace and almost half of them in public places. Also, the findings were in line with the findings of Zhao et al. (2022) who reported that adolescents in China often smoked at home. The findings were somewhat in line with the findings of Alves, Prescioso, and Becona (2022) who revealed that the prevalence of secondhand smoking in closed public spaces is high in Portugal. However, the findings were not in agreement with the findings of Adetunji (2021) who revealed that cocaine had the least lifetime prevalence, and had no current user in Nigeria. The inconsistency of the findings may be because of the slight variation on the various type of substance used, and this could be attributable to the dissimilarity in the culture of setting where these studies were conducted as well as the peddling network which is in existence.

The findings in Table 2 revealed that commercial motorcycle riders mostly used over the counter medications, prescription pain killers, alcohol, smoking tobacco, caffeine, cannabis, and heroine/morphines/opiates daily. Alcohol was mostly used by commercial motorcycle riders weekly. These results were expected and therefore, not surprising, given the fact that most commercial operators use these substances to enhance their energy and get them fit to work, it was affordable, and they have access to it at any time they felt like taking it, and on this basis, it is also among the major reason while accident due to motorcycles are prevalent in many of accident and emergency units of hospitals. The findings were consistent with the findings of Egwuatu, Iroanya, and Adekoya (2020) who found that motorcycle riders, tricycle riders, taxi and bus drivers used illicit drugs daily in Nigeria. Also, the findings were in line with the findings of Nkporbu et al. (2022) who found that majority consume cannabis (by smoking), and alcohol (by swallowing) daily in Nigeria. The findings are not consistent with the findings of Dantsoho and Jamilu (2020); and Ishaku, Hangem, and Senol (2020) who found that commercial motorcyclists in Kaduna and Makurdi, took alcohol occasionally in Nigeria. The inconsistency of the findings may be because of the environmental factors, such as human modeling or imitation. However, the findings on the daily use of substances by commercial motorcycle riders was consistent with the findings of Aliyu, Oladele, Adejumo, and Onibokun (2011); Adeloye et al. (2019); Makanjuola et al. (2020); and Akande et al. (2023) who reported that commercial motorcycle operators were found to use the substance on a daily basis, while the drivers used the substances twice daily in Nigeria. The findings may be due to adoption of similar research designs and methods, including the study population and imitation of behaviours by people that use and abuse substances.

The findings showed that overall, commercial motorcycle riders aged 31-43 years mostly used substances, particularly prescription pain killer pills and smoking tobacco more than those aged 18-30 years and 44+ years respectively (Table 3). The findings in Table 6 showed that there was no significant association between the patterns of substance use and age among commercial motorcycle riders. The finding that commercial motorcycle riders aged 31-43 years mostly used substances, particularly prescription pain killer pills and smoking tobacco more than the other age groups was expected and therefore, not surprising, given the fact that middle adults are at high risk for substance use due to conditions, such as

loss of loved ones, loneliness, sleep problems, family conflicts and financial concerns. The findings are not consistent with the finding of Gebeyehu and Biresaw (2021) who found that prevalence of alcohol use among adolescents aged 15–19 years was higher in Ethiopia. Also, the findings were not in line with the finding of Tindimwebwa, Ajayi, and Adeniyi (2021) who reported that individuals aged 18–35 years were over three times more likely to have past-year use of alcohol when compared to those aged 56 years and above in South Africa. Hence, the results that there was no significant difference in the patterns of these commonly used substances among commercial motorcycle riders based on age was unexpected, and therefore surprising, as one would expect younger age group to use substances more than the other counterparts. The findings were however consistent with the findings of Fasoro et al. (2020) who reported that no significant association exist between the age and substance use among commercial motorcyclist in Nigeria. However, the findings were not in agreement with the findings of Tindimwebwa, Ajayi, and Adeniyi (2021) who reported that the pattern of substance use was significantly associated with age in South Africa. The findings may be attributed to this study due to similarities in research designs and social factors in the environment.

The findings revealed that overall, commercial motorcycle riders with no formal education mostly used substances, particularly amphetamines/metamphetamines, caffeine cannabis, and volatile solvents more than those with tertiary, primary, and secondary education respectively (Table 4). The findings in Table 7 showed that there was a significant association between the patterns of substance use and education level among commercial motorcycle riders. The finding that commercial motorcycle riders with no formal education mostly used substances was expected, and therefore not surprising because knowledge and awareness of substance may naturally increase with a higher level of education, and most of these operators that are not educated sees the use of substance as a normal act without knowing its implications to health. The findings were in line with the findings of Makanjuola et al. (2020) who found that commercial motorcycle operators with low education status tend to abuse drugs than those with tertiary education, and low education status might prevent the commercial motorcycle operators from having adequate knowledge of the risks and consequences associated with substance use in Nigeria. The findings are not consistent with the findings of Tolulope et al. (2020) who found that tertiary level of education was found to be a factor negating the use of substances in Nigeria. However, this could be explained by the thinking of substance use as a manifestation of modernization, which is mainly observed among higher education graduates as well as students (Yosef et al., 2021), including youths. Association may be due to the fact that educated people may easily read and understand information regarding the consequences of substance use than the uneducated. It could be attributed to this study due to similarities in population of the studies and status of sensitization about dangers of substance use and abuse.

The findings showed that overall, commercial motorcycle riders that are widowed/separated mostly used substances, particularly alcohol, over the counter medications, and volatile solvents more than those divorced, single, and married respectively (Table 5). The findings in Table 8 showed that there was a significant association between the patterns of substance use and marital status among commercial motorcycle riders. The finding that commercial motorcycle riders that are widowed/separated mostly used substances more than their counterpart was expected and therefore not surprising, because being a widowed/separated is a stressful life event that can lead to depression, and may contribute to unhealthy behaviours, such as substance use. The findings were not consistent with the finding of Offie et al. (2022) who reported that the current cigarette smoking was more prevalent among the divorced in Nigeria. However, substance use may manifest when there is no longer a spouse who helps control potentially deviant behaviours. Also, the

findings were in line with the findings of Salvatore, Gardner, and Kendler (2020) who revealed that married men used less alcohol and cannabis compared to those who were single or divorced/separated in USA. However, the findings of this study are not in agreement with the findings of Osman (2022) who found no association between marital status and age on the use of drug by commercial drivers in Ghana. The findings may be attributed to the study due to the research methods adopted, and social and environmental influences.

Implications of the Study Findings to Public Health and Education

The findings that commercial motorcycle riders mostly use over the counter medications, prescription pain killers, alcohol, and caffeine in the home could cause policy makers to formulate suitable and sustainable policies to regulate and intervene on increasing tendencies of substance use, abuse, and addiction by people, particularly commercial motorcyclists in the home. The findings that most commercial motorcycle riders reported that over the counter medications, prescription pain killers, alcohol, smoking tobacco, caffeine, and cannabis were used daily, could cause the ministry of health to identify or note exactly the time or period in which commercial motorcycle riders in the area of study mostly use substances, and also encourage the commercial motorcycle riders to escape from being victims of problems and the health effects that emanate from the use of substances. The findings that level of education and marital status were important factors considered in the patterns of the commonly used substances among commercial motorcycle riders, are expected to notify the public health educators on the need to plan health education targeted at various socio-demographic factors of age, level of education, and marital status, with the aim of modifying substance use tendencies associated with these socio-demographic factors.

Conclusion

The findings have shown commercial motorcycle riders mostly used over the counter medications, prescription pain killers, alcohol, and caffeine in the home. Over the counter medications was commonly used in the workplaces, while alcohol and smoking tobacco were commonly used in the public places. Cocaine was not used in any of the settings. and periods studied. Commercial motorcycle riders mostly used over the counter medications, prescription pain killers, alcohol, smoking tobacco, caffeine, cannabis, and heroine/morphines/opiates daily. Alcohol was mostly used by commercial motorcycle riders weekly. Age was not a very important factor considered in the patterns of commonly used substances, while education level and marital status were very important factors considered in the patterns of commonly used substances among commercial motorcycle riders in Nsukka LGA, Enugu State. However, Enugu State government should strengthen existing laws and policies on substance abuse by enforcing a ban on the sale of substances with psychoactive properties to any individual that convey passengers from one place to another in the course of operation, irrespective of the setting (home, workplaces, public places) or period (daily, weekly) the substances may be requested.

References

Adeloye, D., Auta, A., Fawibe, A., Gadanya, M., Ezeigwe, N., Rex, G.,… Adewole, I. F. (2019). Current prevalence pattern of tobacco smoking in Nigeria: a systematic review and meta-analysis. *BMC Public Health, 19*, 1719. https://doi.org/10.1186/s12889-019-8010-8

Adetunji, O., Banji, F. K., Ajiboye, A. S., Oluwole, L. O., Oderinde, K. O., & Ebeyi, R. C. (2021). Substance use among commercial motorcyclists and its relationship with

life satisfaction and significant depressive symptoms. *Journal of Substance Use, 26*(2), 177-183, Doi: 10.1080/14659891.2020.1800844

Akande, R. O., Akande, J. O., Babatunde, O. A., Ajayi, A. O., Ajayi, A. O., Ige, R. O.,… Olatunji, M. B. (2023). Psychoactive substance abuse among commercial bus drivers in Umuahia, Abia State, South-Eastern Nigeria: an uncontrolled "epidemic" with attendant road traffic crashes. *BMC Public Health, 23*, 250. https://doi.org/10.1186/s12889-023-15039-6

Aliyu, U., Oladele, E. O., Adejumo, P. O., & Onibokun, A. C. (2011). Patterns of psychoactive substance use among two-wheel commercial riders in Maiduguri, Borno State, Nigeria. *Nursing & Midwifery Council of Nursing Research Journal, 1*, 1-11.

Alves, R. F., Precioso, J., & Becona, E. (2022). The prevalence of active smoking and secondhand smoke (SHS) exposure among college students in the north of Portugal: the relationship between knowledge about tobacco use and attitudes toward smoking. *Pulmonology, 28*, 193-202.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). New York: Routledge Taylor & Francis Group.

Dantsoho, F.A., & Jamilu, Y. R. (2020). Field survey on substance use among Commercial Motorcyclists in Kaduna State, Nigeria. *Journal of Humanities and Social Science (IOSRJHSS), 25*(12), 31-36. https://www.iosrjournals.org

Dibia, S. I. C., Nwagu, N. E., & Odo, N. A. (2020). Drug use and abuse prevention concerns in rural communities in Enugu State Nigeria. *Global Journal of Health Science, 12*(2), 85.

Egwuatu, T. F., Iroanya, O. O., & Adekoya, K. O. (2020). Prevalence of psychoactive Substance use among Nigerian male commercial vehicle drivers selected from the three major ethnic groups in Nigeria. *Biology, Medicine, & Natural Product Chemistry, 9*(1), 47-55. ISSN 2089-6514 (paper) Doi: 10.14421/biomedich.2020.91.47-55

Fasoro O., Olusuyi A., Dada, A., Adewumi, M., & Oluwatuyi, V. (2020). Assessing substance abuse among Commercial Motorcyclists in Ijero Township, Ekiti State, Southwestern Nigeria: It's Implication to Public Health. *Journal of Addictions Therapies: JATP*, *126*. Doi: 10.29011/2577-1507.100126

Gangadi, M., Kalpourtzi, N., Gavana, M., Vantarakis, A., Chlouverakis, G., Hadjichristodoulou, C.,… Karakatsani, A. (2021). Prevalence of tobacco smoking and association with other unhealthy lifestyle risk factors in the general population of Greece: Results from the EMENO study. *Tob. Prev. Cessation, 7*(61), 1-13. https://doi.org/10.18332/tpc/140242

Gebeyehu, E. T., & Biresaw, M, S. (2021). Alcohol Use and Its Associated Factors among Adolescents Aged 15–19 Years at Governmental High Schools of Aksum Town, Tigray, Ethiopia, 2019: A cross-sectional study. *Journal of Addiction*. https://doi.org/10.1155/2021/5518946

Global Burden of Disease (GBD) (2021). Spatial, temporal and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 counties and territories 1990-2019: A systematic analysis from the global burden of disease study2019. *The lancet*, *397*(21), 2337-2360.

International Association of Chiefs of Police. (2022). *Categories of drug*. Retrieved from https://www.theiacp.org/7-drug-categories

Ishaku, A. B., Hangem, J. A., & Senol, D. (2020). Perception and use of psychoactive substances among Commercial Motorcyclists in Makurdi Metropolis. *Nigeria. Journal of Research in Medical and Dental Science, 8*(3), 229-236

Makanjuola, O. J., Makata, N. N., Ogundele, A. I., Makanjuola, M. S., & Johnson, P.V. (2020). Factors Influencing Substance Abuse among Commercial Motorcycle Operators in Akure Metropolis Ondo State. *International Journal of Caring Science, 13*(3), 1711-1717.

Moonajilin, S., Kamal, K. I., al Mamun, F., Safiq, M. B., Hosen, I., Manzar, D., & Mamun, M. A. (2021). Substance use bahaviour and its lifestyle-related risk factors in Bangladesh high school-going adolescents: An exploratory study. *PLOS ONE, 16*(7), e0254926. doi:10.1371/journal.pone.0254926

National Bureau of Statistics (NBS). (2018). *Drug use in Nigeria*. Retrieved from https://nigerianstat.gov.ng/elibrary/read/881#:~:text=The%20past%20year%20prevalence%20of,cent%20among%20the%adult%20population

National Survey on Drug use and Health. (2020). *National survey on drug use and health.* Retrieved from https://www.assistant-secretary-nsduh2019-presentation.pdf

Nkporbu, A. K., Oti, I. K., & Metu, I. (2022). Pattern of substance use among patients attending the drug unit of the university of Port Harcourt Teaching Hospital. *Journal of Biomed Research Environ Science, 3*(2), 215-220. Doi:10.37871/jbres1425 Retrieved from https://www.jelsciences.com/articles/jbres1425.pdf

Offie, D. C., Ekanem, E. E., Dike, P. N., Oguh, D. N., Suraju, A. O., & Oluwatobi, A. (2022). Pattern of substance use among young people in Ado Ekiti. *International Journal of Public* Health. Doi: 10.21522/TIJPH.2013.10.02.Art024

Ojo, (2019). *Drug abuse*. Accessed from https://www.vanguardngr.com/2019/07/new-trends-in-drug-abuse-no-more-marijuana-we-get-high-on-new-weeds/

Osman, H. (2022). Factors influencing the use and abuse of drugs by Commercial Drivers: A Case of Commercial Drivers in Ghana. *Open Journal of Social Sciences, 10*,172-191. https://doi.org/10.4236/jss.2022.109012

Salvatore, J. E., Gardner, C. O., & Kendler, K. S. (2020). Marriage and reductions in men's alcohol, tobacco, and cannabis use in USA. *Psychol Med, 50*(15), 2634–2640. Doi:10.1017/S0033291719002964

Spivak, A. C., & Shannon, M. M. (2015). Prohibiting juvenile access to tobacco: violation rates, cigarette sales and youth smoking. *International Journal of Drug Policy, 26*(9), 851-859.

Tindimwebwa, L., Ajayi, A. I., & Adeniyi, O. V. (2021). Prevalence and demographic correlates of substance use among Adults with Mental Illness in Eastern Cape, South Africa: A cross-sectional study. *International Journal of Environmental Research and Public Health, 18*, 5428.

Tolulope, O., Afolaranmi1, Z. I., Hassan, O. J., Ugwu, M. A., Onche, J. C., Obasi, O. G.,… Bupwatda, O. (2020). Psychoactive substance use and its predictors among commercial trimotorcycle operators in Jos North local government area of Plateau State. *Journal of Medicine in the Tropics, 22*(1), 51–56.

Unaogu, N. N., Onu, J. U., Iteke, O., Tukur, K., & Oka, I. Q. (2017). Pattern of substance abuse at the drug de-addiction unit of a Nigerian Psychiatric Hospital. *African Journal of Drug & Alcohol Studies, 16*(1), 1-9.

United Nations Office on Drugs and Crime. (2020). *World drug report*. Retrieved from https://www.unodc.org/unodc/press/releases/2020/June/media-advisory---global-launch-of-the-2020-world-drug-report.html

World Health Organization. (2018). *Other psychoactive substances*. Retrieved from https://www.who.int/substance_abuse/facts/psychoactives/en/

World Medical Association. World Medical Association Declaration of Helsinki; Ethical principles for medical research involving human subjects. Journal of American Medical Association. 2013; 310:2191-2194. [CrossRef].

Yosef, T., Getachew, D., Bogale, B., Wondimu, W., Shifera, N., Negesse, Y.,…Gerensea, H. (2021). Psychoactive substance use and its associated factors among Truck Drivers in Ethiopia. *Biomed Res Int, 9*, 2021, 1604245. Doi: 10.1155/2021/1604245 PMID: 33628773; PMCID: PMC7889340

Zhao, Y., Di, X., Li, S., Zeng, X., Wang, X., Nan, Y.,… Liu, S. (2022). Prevalence, frequency, intensity, and location of cigarette use among adolescents in China from 2013−14 to 2019: Findings from two repeated cross-sectional studies. *The Lancet Regional Health-Western Pacific, 27*, 100549. https://doi.org/10.1016/j.lanwpc.2022.10054