

## Socio-Demographic Determinants of Psychoactive Substance Use among Students of Tertiary Institutions in Imo State, Nigeria

Chukwuma B Duru<sup>1</sup>, Uche R Oluoha<sup>2\*</sup>, Chukwuma C Okafor<sup>3</sup>, Kevin C Diwe<sup>1</sup>, Anthony C Iwu<sup>2</sup>, Chinyere M Aguocha<sup>4</sup>, Ikechi Ohale<sup>2</sup> and Nwaigbo E<sup>2</sup>

<sup>1</sup>Department of Community Medicine, Faculty of Medicine, Imo State University Owerri, Imo State, Nigeria

<sup>2</sup>Department of Community Medicine, Imo State University Teaching Hospital, Orlu, Imo State, Nigeria

<sup>3</sup>Department of Psychiatry, Faculty of Clinical Medicine, University of Port Harcourt, Rivers State, Nigeria

<sup>4</sup>Department of Psychiatry, Faculty of Medicine, Imo State University, Owerri, Imo State, Nigeria

\*Corresponding author: Uche R Oluoha, Consultant, Diabetes Day Centre, Department of Community Medicine, Imo State University Teaching Hospital, Orlu, Imo State, Nigeria, Tel: +2348067623495; E-mail: oluohauche@yahoo.com

Received date: September 11, 2017; Accepted date: September 26, 2017; Published date: October 03, 2017

Copyright: © 2017 Duru CB, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### Abstract

**Background:** Psychoactive substance use among undergraduate students is a major public health problem globally and over 29 million people worldwide suffer from drug use disorders.

**Methodology:** This study was carried out in February 2017 and the study design was an institution based descriptive cross-sectional type. The study population comprised undergraduate students in selected tertiary institutions of the state. A multistage sampling technique was used in the selection of study subjects. Data was collected using a pretested, semi-structured and self-administered questionnaire and analysis was done using IBM SPSS version 20. The level of statistical significance was set at p-value of  $\leq 0.05$ .

**Results:** The mean age of the respondents was  $22.2 \pm 3.8$  years. The prevalence of the life time and current use of stimulants were 45.3% and 29.1% respectively and tobacco was the commonest stimulant used both in the past (50.3%) and currently (48.0%). Peer group influence was the commonest reason for initiating use of psychoactive substances. Factors significantly associated with current use of stimulants among the students were; gender ( $p < 0.0001$ ), level of study ( $p = 0.012$ ), accommodation statuses ( $p < 0.0001$ ) and status of parents union ( $p = 0.007$ ).

**Conclusion:** This study showed a high prevalence of psychoactive substance use among the respondents thus appropriate preventive measures should be adopted to minimise this menace.

**Keywords:** Psychoactive substance abuse; Students; Tertiary institutions; Imo state; Nigeria

### Introduction

According to the World Health Organisation, psychoactive substances are substances that when taken in or administered into one's system, affect mental processes [1]. Based on their common effects, psychoactive substances can be classified as stimulants (nicotine present in tobacco, caffeine contained in coffee, cocaine, amphetamine, khat, etc.), depressants (alcohol, barbiturates, benzodiazepines, chloral hydrate, rohypnol, etc.), narcotics (heroin, morphine, codeine etc), hallucinogens (alpha-methyltryptamine, ketamine, phencyclidine, D-lysergic acid diethylamide etc), and cannabis (marijuana, hashish, hash oil etc) [1].

Psychoactive substance use among undergraduate students is a major public health issue [2]. It is estimated that 1 in 20 adults, or a quarter of a billion people between the ages of 15 and 64 years, used at least one drug in 2014 according to 2016 world drug report [3]. Globally, over 29 million people suffer from drug use disorders, and of those, 12 million are people who inject drugs (PWID) of whom 14.0% are living with HIV [4]. The impact of drug use in terms of its health consequences continues to be devastating. The global disease burden attributed to alcohol and illicit drugs is estimated at 5.4% while 3.7% is

attributed to tobacco use alone [4]. The preferred illicit substance use in Africa is cannabis while in European and Asian countries, it is opiates and in South America, cocaine predominates [5]. A descriptive national survey of substance use in Nigeria revealed that alcohol is the commonest psychoactive substance in use while cannabis is the most commonly used illicit drug [6].

During University period, students experience independence and freedom from direct adult and family supervision, self decision making and intense academic pressures as well as sharing living quarters with people they barely know. They also form new social groups and may be exposed to values different from their parental values [7-9]. These new values may motivate the youth to indulge in unhealthy behaviours such as smoking, alcohol and illicit drug use. Undergraduate students make the transition from the restricted life monitored by parents to a more self-directed life influenced by the university environment and as such, the risk of substance use is increased in university environments [10].

The use and abuse of substances have dramatically increased worldwide particularly in developing countries as depicted by recent trends [8,11,12]. Studies have shown that substance use is common among undergraduates and is becoming increasingly widespread in many African countries [9]. Most countries in sub-Saharan Africa are experiencing rapid economic, social and cultural transitions which

have created favourable environment for increased and socially disruptive substance use [13].

Several works have shown that young people are ruining their lives through illicit drug use [14,15]. A comparison with other developing countries reveals that Nigeria ranks among the highest users of dangerous drugs such as alcohol, tobacco, cannabis, benzodiazepines, cocaine and opioids [16]. A review of the literature clearly indicates that there has been a steady increase in the prevalence of drug use and its associated consequences within the last three decades [16-18]. In many of the higher institutions of learning in Nigeria, there have been incessant student unrests, riots, crimes, cultism, many of which have been directly or indirectly linked with drug abuse [19-21].

Some of the documented determinants of psychoactive substance abuse in institutions of higher learning by previous researchers include male gender, younger age bracket, demise of either or both parents, religious inclination, parental use of psychoactive substances as well as their level of education [13,20].

This study was conducted to assess the prevalence, pattern and predictors of psychoactive substance use among students of different tertiary institutions in Imo State, Nigeria with a view to understanding the extent of the problem.

## Methodology

### Study area

Imo state is one of the 36 states in Nigeria located in the South Eastern part of the country. It has 27 local government areas with 5 being urban and 22 being rural. The State covers an area of 5100 square kilometre with a population density varying from 230 to 1400 persons per square kilometre [22]. There are several government owned institutions of higher learning in the state which includes: Imo State University, Owerri; Federal University of Technology, Owerri; Federal Polytechnic, Nekede; Eastern Palm University, Ogboko; Imo State Polytechnic, Umuagwo; Alvan Ikoku College of Education, Owerri; Imo State Technological Skills Acquisition Institute, Orlu; College of Health Science and Technology, Amaigbo, Nwangele; School of Nursing, Amaimo and Imo State College of Nursing and Health Sciences, Orlu.

### Study design and study population

The study design was an institution based descriptive cross-sectional study. The study population comprised undergraduate students in selected tertiary institutions of the state.

### Selection criteria

Only full time students of the selected tertiary institutions irrespective of their year of study were enrolled and interviewed.

### Sample size determination

Sample size was calculated using the formula for single proportion in study populations greater than 10,000 [23];

$$n = Z^2 P (1-P) / d^2,$$

Where n is the minimum sample size, Z is the standard normal deviate at 95% confidence interval (1.96), P is the proportion of stimulant use in previous study (0.62) 23 and d is the level of precision

required, set at 0.05. The calculated sample size was 362. Considering a potential non-response rate of 10%, the minimum sample size required for this study was 398, however, 500 students were enrolled in this study with 430 giving their consent to participate.

### Sampling technique

A multi-stage sampling technique was used in the selection of the study participants. The first stage involved the stratification of the tertiary institutions into Universities and Non-Universities. The universities were; Imo state university, Owerri; Federal university of technology, Owerri and Eastern palm university, Ogboko. The non-universities included in the stratification were Federal polytechnic, Nekede; Imo state polytechnic, Umuagwo and Alvan Ikoku college of education, Owerri. The second stage involved the selection of two universities (Imo state university and Federal university of technology, Owerri) and two non-universities (Federal polytechnic, Nekede and Alvan Ikoku college of education, Owerri) using simple random sampling by balloting. The third stage involved the selection of the study participants and this was done using simple random sampling technique in proportion to faculty size, class size and sex distribution.

### Data collection instrument

Psychoactive substance use was defined as the use of any items listed in the questionnaire in lifetime or during the past 12 months. Data was collected using a questionnaire design which was adapted from the World Health Organisation (WHO) student drug survey and modified to suit the study environment [24]. The questionnaire; pretested, semi-structured and anonymously self-administered comprised four sections including; sociodemographic characteristics of respondents, their awareness and knowledge of psychoactive substance, their perception and attitude towards its use as well as respondents' utilization of psychoactive substances.

### Data analysis

The data were scrutinized and entered into the computer. Data cleaning was done by carrying out range and consistency checks. Descriptive and analytical statistics of the data were carried out using Statistical Package for Social Sciences (SPSS) IBM Window version 20. Chi-square and binary regression were used to document the presence of statistically significant associations between variables. A p-value of  $\leq 0.05$  was considered statistically significant. Descriptive data were presented as simple graphs, frequencies and percentages.

### Ethical issues

Ethical approval was gotten from the Ethics Committee of Imo State University Teaching Hospital, Imo State, Nigeria. All recruited respondents gave informed verbal consent. They were assured of the confidentiality of the information provided. All authors hereby declare that the study was carried out in line with ethical procedures as outlined in Helsinki declaration of 1964.

Variable	Category	Frequency (%) n = 430
Age group (years)	15 - 20	131 (30.5)
	21-25	232 (54.0)
	26-30	61 (14.2)

	31-35	3 (0.7)
	>35	3 (0.7)
Mean ± SD	22.2 ± 3.8	
Gender	Male	234 (54.4)
	Female	196 (45.6)
Level in school	100	78 (18.1)
	200	142 (33.0)
	300	80 (18.6)
	400	98 (22.8)
	500	21 (4.9)
	600	11 (2.6)
Religion	Christianity	402 (93.5)
	Islam	28 (6.5)
Faculty	Medical science	69 (16.0)
	Pure science	72 (16.7)
	Arts/Social science	289 (67.2)
Residence	Hostel	162 (37.7)
	Off campus	171 (39.8)
	Living with family	97 (22.6)
Family type	Monogamy	314 (73.0)
	Polygamy	108 (25.1)
	Polyandry	8 (1.9)
Educational level of mother	None	22 (5.1)
	Primary	51 (11.9)
	Secondary	178 (41.5)
	Tertiary	179 (41.6)
Educational level of father	None	39 (9.1)
	Primary	36 (8.4)
	Secondary	109 (25.3)
Marital status of parents	Married	305 (70.9)
	Separated/Divorced	17 (4.0)
	Father dead	58 (13.5)
	Mother dead	30 (7.0)
	Both parents dead	20 (4.7)

**Table 1:** Sociodemographic and household characteristics of respondents.

## Results

### Socio-demographic characteristics of respondents

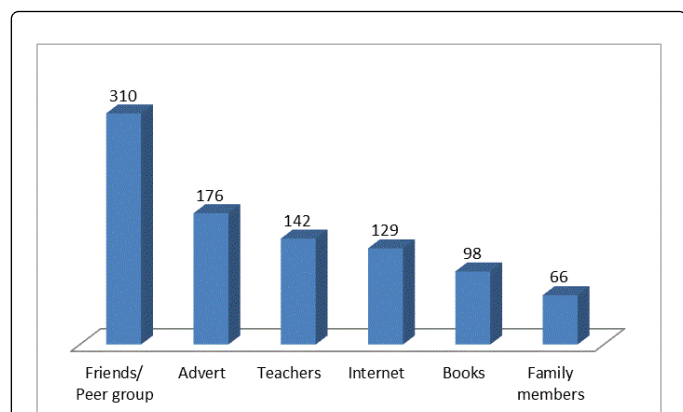
Five hundred (500) students were enrolled in this study with 430 consenting to participate giving a response rate of 86.0%. The mean age of the students was 22.2 ± 3.8 years with majority of them (54.0%) being within the 21-25 years age bracket. Male (54.4%) were slightly higher than the females (45.6%) and majority of the study participants were in 200 (33.0%) and 400 (22.8%) levels of study. Almost all the respondents (93.5%) were of the Christian faith with majority studying Arts/Social science related courses (67.2%). More of the students (39.8%) live off campus. Most of the students (73.0%) were from monogamous family setting and over 80% of their parents attained post primary level of education (Table 1).

Variable	Category (n=430)	Frequency (%)
Substance awareness	Yes	370 (86.0)
	No	60 (14.0)
Substances known (n=370)**	Indian hemp	287 (77.6)
	Cocaine	262 (71.0)
	Tobacco	244 (66.0)
	Tramadol	201 (54.3)
	Caffeine	177 (47.8)
	Codeine	152 (41.1)
	Shisha	145 (39.2)
	Kolanut	142 (38.4)
	Heroin	132 (35.7)
	Glue	74 (20.0)
	Soak away fumes	54 (14.6)
	Morphine	53 (14.3)
	Refuse gas	48 (13.0)
	Cow dung	44 (11.9)
Known factors influencing substance use (n=370)**	Peer pressure	267 (72.2)
	Depression	178 (48.1)
	Negative influence media	154 (41.6)
	Poor academic performance	115 (31.1)
	Low self-esteem	37 (10.0)

**Table 2:** Awareness and knowledge of respondents about psychoactive substances, \*\*Multiple Response.

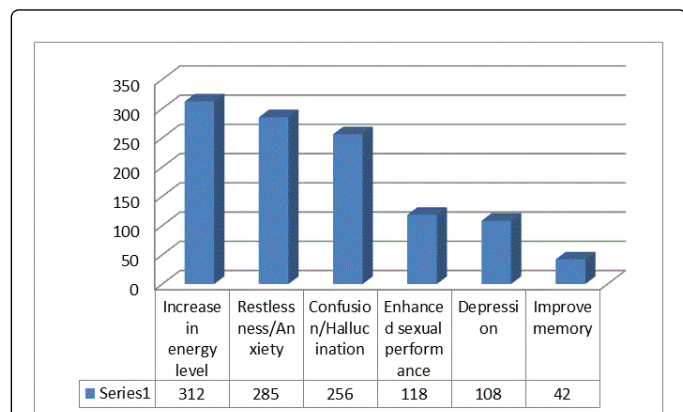
### Awareness and knowledge of respondents about psychoactive substances

Most of the respondents (86.0%) were aware of psychoactive substances and the common type known were; Indian hemp (77.6%), cocaine (71.0%), tobacco (66.0%) and tramadol (54.3%). Peer group pressure (72.2%), depression (48.1%) and negative media influence (41.6%) were the common factors mentioned that can influence stimulant use (Table 2).



**Figure 1:** Respondents sources of information about psychoactive substances.

The most common source of information on psychoactive substances according to the respondents was friends/peer group (83.8%) and increase in energy level (84.3%) as well as restlessness/anxiety (77.0%) were identified as common effects of stimulant use (Figures 1 and 2).



**Figure 2:** Respondents view of the positive and negative effects of psychoactive substances.

### Use of psychoactive substances among respondents

A little under half (45.3%) of the respondents have ever used any form of psychoactive substances while 29.1% were current users in the last one year. Tobacco was the commonest psychoactive substance used both in the past (50.3%) and currently (48.0%). Common reasons for substance use were to relieve depression (53.6%), to enhance alertness (45.6%) and to keep awake at night (42.4%). Common positive effects

experienced following psychoactive substance use were; increase in alertness (39.2%), increased energy level (33.6%), elevated mood (22.4%) and enhanced sexual performance (4.8%) while the negative effects include; restlessness (67.2%), confusion (19.2%) and depression (7.2%). Majority of the current users (83.1%) were introduced to substance use by their friends and peer groups with most (84.0%) of them intending to quit substance use. Common ways they intend to quit are by gainful use of their time (40.0%) and to dissociate from friends/peer groups that influence substance use (37.1%) (Table 3).

Variable	Frequency (%)
<b>Ever use any form of substance (n=430)</b>	
Yes	195 (45.3)
No	235 (54.7)
<b>Type used (n=195)**</b>	
Tobacco	98 (50.3)
Caffeine	86 (44.1)
Kolanut (Cola Acuminata)	83 (42.6)
Tramadol (Opioid)	53 (27.2)
Indian hemp	48 (24.6)
Codeine	40 (20.5)
Glue gum sniffing	20 (10.3)
Cocaine	17 (8.7)
Heroin	9 (4.6)
Morphine	4 (2.1)
Refuse gas	1 (0.5)
Soak away fume	1 (0.5)
Cow dung	1 (0.5)
<b>Current use in the last one year (n=430)</b>	
Yes	125 (29.1)
No	305 (70.9)
<b>Type used in the last one year (n=125)**</b>	
Tobacco	60 (48.0)
Caffeine	52 (41.6)
Indian hemp	34 (27.2)
Kolanut (Cola Acuminata)	30 (24.0)
Codeine	24 (19.2)
Glue gum	19 (15.2)
Cocaine	13 (10.4)
Heroin	3 (2.4)
Morphine	1 (0.8)
Cow dung	1 (0.8)

Refuse gas	1 (0.8)
Soak away	1 (0.8)
<b>Intensity of use (n=125)</b>	
Daily	4 (3.2)
Always	7 (5.6)
Sometimes	60 (48.0)
Rarely	54 (43.2)
<b>Reasons for substance use (n=125)**</b>	
To relieve depression	67 (53.6)
To enhance alertness	57 (45.6)
To keep awake at night	53 (42.4)
Peer pressure	42 (33.6)
To enhance energy level	39 (31.2)
To enhance sexual performance	34 (27.2)
To enhance academic performance	30 (24.0)
Good aroma	26 (20.8)
Improve appetite	22 (17.6)
To lose weight	16 (12.8)
To improve taste of food and drink	15 (12.0)
To maintain good health	14 (11.2)
<b>Positive effect noticed after use (n=125)</b>	
Increase alertness	49 (39.2)
Increase energy level	42 (33.6)
Elevated mood	28 (22.4)
Enhanced sexual performance	6 (4.8)
<b>Negative effect noticed after use (n=125)</b>	
Restlessness	84 (67.2)

Confusion	24 (19.2)
Depression	9 (7.2)
Delirium	4 (3.2)
Organ Affectation	4 (3.2)
<b>Who introduced psychoactive substance to you (n=125)**</b>	
Friends/ Peer groups	162 (83.1)
Family members	15 (7.7)
Through books	11 (5.6)
Teachers	6 (3.1)
Bill boards	1 (0.5)
<b>Are you planning on quitting psychoactive substance use (n=125)</b>	
Yes	105 (84.0)
No	20 (16.0)
<b>Main way you intend quitting its use (n=105)</b>	
Gainful use of my time	42 (40.0)
Dissociate from friends who influence its use	39 (37.1)
See a psychologist/doctor	18 (17.1)
Visit a prayer house	6 (5.7)

**Table 3:** Use of psychoactive substance among respondents, \*\*Multiple responses.

**Factors associated with current use of psychoactive substances**

Factors significantly associated with current use of psychoactive substances within the past one year among the students were; gender ( $\chi^2=43.6$ ,  $p<0.0001$ ), level/year of study ( $\chi^2=14.6$ ,  $p=0.012$ ), residence ( $\chi^2=39.8$ ,  $p<0.0001$ ), status of parents union ( $\chi^2=14.1$ ,  $p=0.007$ ) and family type ( $\chi^2=4.9$ ,  $p=0.027$ ) (Table 4).

Variable	Yes (%) n=125	No(%) n=305	Total (%) n=430	$\chi^2$	p-value
<b>Gender</b>					
Male	99 (42.3)	135 (57.7)	234 (100.0)	43.6	<0.001*
Female	26 (13.3)	170 (86.7)	196 (100.0)		
<b>Age (years)</b>					
15-20	39 (29.8)	92 (70.2)	131 (100.0)	0.133	0.998
21-25	66 (28.4)	166 (71.6)	232 (100.0)		
26-30	18 (29.5)	43 (70.5)	61 (100.0)		
>30	2 (33.3)	4 (66.7)	6 (100.0)		

<b>Mean ± SD</b>	20.0 ± 3.9	20.0 ± 3.8			
<b>Religion</b>					
Christianity	120 (29.9)	282 (70.1)	402 (100.0)	1.83	0.177
Islam	5 (17.9)	23 (82.1)	28 (100.0)		
<b>Faculty</b>					
Medical science	13 (18.8)	56 (81.2)	69 (100.0)	4.77	0.092
Pure science	25 (34.7)	47 (65.3)	72 (100.0)		
Arts/Social science	87 (30.1)	202 (69.9)	289 (100.0)		
<b>Level of study</b>					
100	11(14.1)	67 (85.9)	78 (100.0)	14.6	0.012*
200	48 (33.8)	94 (66.2)	142 (100.0)		
300	29 (36.3)	51 (63.8)	80 (100.0)		
400	31 (31.6)	67 (68.4)	98 (100.0)		
500	3 (14.3)	18 (85.7)	21 (100.0)		
600	3 (27.3)	8 (72.7)	11 (100.0)		
<b>Residence</b>					
Hostel	71 (43.8)	91 (56.2)	162 (100.0)	39.8	<0.0001*
Off campus	47 (27.3)	124 (72.5)	171 (100.0)		
Living with family	7 (7.2)	90 (97.8)	97 (100.0)		
<b>Family type</b>					
Monogamy	82 (26.1)	232 (73.9)	314 (100.0)	4.9	0.027*
Polygamy	41 (38.0)	67 (62.0)	108 (100.0)		
Polyandry	2 (25.0)	6 (75.0)	8 (100.0)		
<b>Status of parents union</b>					
Parents living together	90 (29.5)	215 (70.5)	305 (100.0)	14.1	0.007*
Father dead	10 (17.2)	48 (82.8)	58 (100.0)		
Mother dead	6 (20.0)	24 (80.0)	30 (100.0)		
Both parents dead	10 (50.0)	10 (50.0)	20 (100.0)		
Parents separated/divorced	9(52.9)	8(47.1)	17 (100.0)		
<b>Fathers' level of education</b>					
None	13 (33.3)	26 (66.7)	39 (100.0)	5.23	0.156
Primary	10 (27.8)	26 (72.2)	36 (100.0)		
Secondary	40 (36.7)	69 (63.3)	109 (100.0)		
Tertiary	62 (25.2)	184 (74.8)	246 (100.0)		
<b>Mothers' level of education</b>					
None	6 (27.3)	16 (72.7)	22 (100.0)	6.79	0.079



Primary	15 (29.4)	36 (70.6)	51 (100.0)		
Secondary	63 (35.4)	115 (64.6)	178 (100.0)		
Tertiary	41 (22.9)	138 (77.1)	179 (100.0)		

**Table 4:** Association between socio-demographic variables and current use of psychoactive substances in the past one year, \*Significant.

### Predictors of current use of psychoactive substances

On bivariate analysis, male respondents were about five times more likely to use psychoactive substances (OR: 4.79; 2.95-7.81,  $p < 0.001$ ) than their female counterpart. Pure science students were about two times more likely to use psychoactive substances (OR: 2.29; 1.06-4.97,  $p = 0.036$ ) compared to medical students. Students in later years of study were more likely to use psychoactive substances in comparison to fresh students with those in their 3rd year of study having the highest likelihood of use than others (OR: 3.46; 1.58-7.58,  $p = 0.002$ ). Those staying in hostels were ten times more likely to use psychoactive substances (OR: 10.03; 4.37-22.99,  $p < 0.0001$ ) compared to those living with family members and attending school from their homes. Also, respondents from polygamous homes (OR: 1.73; 1.09-2.75,  $p = 0.026$ ) or whose parents were divorced/separated (OR: 2.69; 1.01-7.19  $p = 0.049$ ) had a significantly higher odds of using psychoactive substances than their counterparts from other family setting (Table 5).

Variable	OR (estimate)	95% (CI)	p-value
<b>Gender</b>			
Male	4.79	2.95-7.81	<0.0001*
Female	1	-	-
<b>Age</b>			
15-20	1		
21-25	0.94	0.58-1.50	0.789
26-30	0.99	0.51-1.92	0.97
>30	1.18	0.21-6.71	0.852
<b>Religion</b>			
Christianity	1	-	-
Islam	0.51	0.19-1.38	0.184
<b>Faculty</b>			
Medical science	1	-	-
Pure science	2.29	1.06-4.97	0.036*
Arts/Social science	1.86	0.97-3.57	0.064
<b>Level of study</b>			
100	1	-	-
200	3.11	1.50-6.43	0.002*
300	3.46	1.58-7.58	0.002*
400	2.82	1.31-6.07	0.008*

500	1.02	0.26-4.03	0.983
600	2.28	0.52-10.0	0.272
<b>Accommodation status</b>			
Hostel	10.03	4.37-22.99	<0.0001*
Off campus	4.87	2.11-11.28	<0.001*
Living with family	1	-	-
<b>Nature of family</b>			
Monogamy	1	-	-
Polygamy	1.73	1.09-2.75	0.026*
Polyandry	0.94	0.19-4.77	0.943
<b>Status of parents union</b>			
Parents living together	1	-	-
Father dead	0.5	0.24-1.03	0.059
Mother dead	0.6	0.24-1.51	0.276
Both parents dead	2.39	0.96-5.94	0.061
Parents separated/divorced	2.69	1.01-7.19	0.049*
<b>Fathers' level of education</b>			
None	1.48	0.72-3.06	0.286
Primary	1.14	0.52-2.50	0.741
Secondary	1.72	1.06-2.79	0.028*
Tertiary	1	-	-
<b>Mothers' level of education</b>			
None	1.26	0.46-3.43	0.648
Primary	1.4	0.70-2.81	0.341
Secondary	1.84	1.16-2.93	<0.01*
Tertiary	1	-	-

**Table 5:** Socio-demographic determinants of current psychoactive substance use among students using bivariate analysis.

### Discussion

The mean age of respondents in this study was 22.5 years. This is similar to that obtained by Onofa et al., [24] (23.9 years) in their study on prevalence and patterns of drug abuse among students of tertiary institutions in Ogun state, Nigeria and Imalebo et al., [25] among

undergraduate students (21.3 years) in Port-Harcourt [24,25]. This study reported a higher proportion of male respondents. Similar studies have reported a preponderance of males in Nigeria institutions of higher learning [9,24,26]. The societal culture and attitude that seems to favour the male child could account for this. However, education of the female child has been on the rise especially in south eastern part of Nigeria [26].

The lifetime prevalence rate of any psychoactive substance use among the respondents was 45.3%. This was lower than the 69.2% reported by Onofa et al., [24] in Abeokuta and 78% reported by Makanjoula et al., [9,10] in Ilorin but higher than the 23.7% reported by Tawasu [27] in Maiduguri. These differences could be as a result of the different criteria used for diagnosis of psychoactive substance use and the type of substance studied. The observed differences could also be as a result of differing methodologies and socio-cultural characteristics of the respondents. The prevalence rate of psychoactive substance use within the past 12 months in this study was 29.1%. This was lower than the 45.5% reported by a similar study in South Western Nigeria [24]. The difference could be because alcohol was part of the psychoactive substance they studied unlike our study.

The common psychoactive substance ever used (lifetime use) as revealed in our study were tobacco (50.3%), caffeine (44.1%), kolanut (42.6%), tramadol (27.2%) and indian hemp (24.6%), while for current use in the past one year, it was tobacco (48.0 %), caffeine (41.6%), indian hemp (27.2%), kolanut (24.0%) and codeine (19.2%). This pattern of use was similar to findings by Tarig Osman et al. on substance use among university students in Sudan [28] but yet other workers have identified alcohol as the commonest psychoactive substance in use which was not among the substances studied in this work [24,29].

Some of the reasons given for psychoactive substance use by our respondents were to relieve depression, to enhance alertness, to keep awake at night, peer pressure and to enhance sexual performance. These were similar to findings reported in previous studies for initiation of substance use and included academic pressure, temptation by peer groups, to relieve stress and to increase pleasure during sex [8,9,28].

Reported adverse effects of psychoactive substance use in this study were restlessness, confusion, depression, delirium and health problems. Other researchers have identified sexually transmitted diseases, poor academic performance, financial hardship and relationship problems as some of the adverse effects of substance use [9,28,30].

Almost all the respondents (90.8%) in this study were initiated into using psychoactive substances by either a friend or a family member. Several studies have identified peers and relatives as major sources of psychoactive substance initiation [28,31-33]. It has been suggested that peers might serve as good role models for substance use intervention program [30].

On bivariate analysis of our data, male gender was significantly associated with greater psychoactive substance use. This was in line with reports from previous studies that showed substance use as predominantly male affair [24,28]. The use of psychoactive substances is more tolerable for males in most Nigerian cultures. Medical students were less likely to use psychoactive substances in this study compared to other students. Perhaps, their greater knowledge of the possible consequences of psychoactive substance use could be responsible for this difference. Age was not a risk factor for substance use in this study though students at higher levels of study were more likely to use

psychoactive substances in this survey. A similar study in Sudan found no association between substance use and year of study [28]. Our survey also revealed that living with families/relations and coming from stable homes were protective against use of psychoactive substances. These factors have been reported by other researchers as modulatory against the influence of peer pressure [28]. As earlier reported, peer group influence plays a significant role in psychoactive substance use initiation and continuation [28,31-33]. With respect to parents' level of education, our study revealed a significantly higher level of substance use among respondents whose parents have secondary level of education as against tertiary level of education. A study in south western Nigeria reported that level of alcohol consumption among undergraduates was directly proportional to their parents' level of education [24]. Psychoactive substance use by parents may exert greater influence on its usage by their children in comparison to educational attainment.

The strength of the study lies in the involvement of students from different higher institutions across the state and from all faculties. The study limitation is that the study design was a cross-sectional type and the data was self-reported which could likely lead to bias. A longitudinal design in which students are followed up from admission to graduation would be most ideal.

## Conclusion

The study showed a high prevalence of psychoactive substance use among the students studied. It also identified peer group influence, accommodation status of the students, family type and their parents' marital status as some of the risk factors for substance use.

There is need to establish and strengthen peer educators in our institutions of higher learning. Integration of the use and consequences of psychoactive substances into the curricula of primary and secondary schools could also be considered. Students addicted to psychoactive substances should be provided with counselling and assisted with treatment options. The ease with which students and the general populace access tobacco and other psychoactive substances should be curtailed by enforcing relevant legislations. Lastly, the family institutions should be strengthened culturally and economically so as to minimise the rate of separation and divorce among couples and reduce the negative effects on their children notably psychoactive substance addiction.

## References

1. World Health Organisation (WHO) Terminology and classification of psychoactive substances.
2. Owoaje E, Bello J (2010) Psychoactive substance use among undergraduate students of the University of Ibadan, Nigeria. *Trop J Health Sci* 17: 56-60.
3. United Nations office on drugs and crime (2016) World Drug Report 2016.
4. World Health Organisation (2010) Atlas on substance use, resources for the prevention and treatment of substance use disorders. World Health Organization, Geneva, Switzerland.
5. World Health Organization (2004) Global status report on alcohol 2004. WHO, Geneva, Switzerland.
6. Adamson TA, Ogunlesi AO, Morakinyo O, Akinhanmi AO, Onifade PO, et al. (2015) Descriptive national survey of substance use in Nigeria. *J Addict Res Ther* 6: 234.



7. Steyl T, Phillips J (2011) Actual and perceived substance use of health science students at a university in the Western Cape, South Africa. *Afr Health Sci* 11: 329-333.
8. Deressa W, Azazh A (2011) Substance use and its predictors among undergraduate medical students of Addis Ababa University in Ethiopia. *BMC Public Health* 11: 660.
9. Makanjuola AB, Daramola TO, Obembe AO (2007) Psychoactive substance use among medical students in a Nigerian university. *World Psychiatry* 6: 112-114.
10. Makanjuola A, Abiodun O, Sajo S (2014) Alcohol and psychoactive substance use among medical students of the University of Ilorin, Nigeria. *Eur Sci J* 10: 69-83.
11. Babalola E, Ogunwale A, Akinhanmi A (2013) Pattern of psychoactive substance use among university students in South-Western Nigeria. *J Behav Health* 2: 334-342.
12. Reddy P, Resnicow K, Omardien R, Kambaran N (2007) Prevalence and correlates of substance use among high school students in South Africa and the United States. *Am J Public Health* 97: 1859-1864.
13. Tesfaye G, Derese A, Hambisa MT (2014) Substance use and associated factors among university students in Ethiopia: A cross-sectional study. *J Addict*: 2014.
14. Fareo DO (2012) Drug abuse among Nigerian adolescents: Strategies for counseling. *J Int Soc Res* 20: 52.
15. Degenhardt L, Chiu WT, Sampson N, Kessler RC, Anthony JC, et al. (2008) Toward a global view of alcohol, tobacco, cannabis, and cocaine use: Findings from the WHO world mental health surveys. *PLoS Med* 5: e141.
16. Ihezue UH (1988) Drug abuse among medical students at a Nigerian university: Prevalence and pattern of use. *J Natl Med Assoc* 80: 81-85.
17. Oshodi O, Aina O, Onajole A (2010) Substance use among secondary school students in an urban setting in Nigeria: Prevalence and associated factors. *Afr J Psychiatry (Johannesbg)* 13: 1.
18. Dewing S, Plüddemann A, Myers BJ, Parry CD (2006) Review of injection drug use in six African countries: Egypt, Kenya, Mauritius, Nigeria, South Africa and Tanzania. *Drugs Educ Prev Policy* 13: 121-137.
19. Yusuf FA (2010) Factors influencing substance abuse among undergraduate students in Osun State, Nigeria. *Afr Res Rev* 4: 4.
20. Aluede O, Jimoh B, Agwinede BO, Omoregie EO (2005) Student unrest in Nigerian Universities: Looking back and forward. *J Soc Sci* 10: 17-22.
21. National population commission and federal republic of Nigeria (2006) Population and housing census: Priority-Table-Volume III.
22. Smart R (1980) A methodology for student drug-use surveys. World Health Organization, Geneva, Switzerland.
23. Araoye MO (2004) Research methodology with statistics for health and social sciences. Nathadex Publishers, pp: 39-120.
24. Onofa LU, Adamson T, Ighoroje M, Majekodunmi M (2016) Prevalence and patterns of drug abuse among students of tertiary institutions in Abeokuta, Ogun State, Nigeria. *Int J Psychiatry* 1: 1-6.
25. Imalebo JA, Peter-Kio OB, Asuquo EO (2012) Pattern of risky sexual behaviour and associated factors among undergraduate students of the University of Port Harcourt, Rivers State, Nigeria. *Pan Afr Med J* 12: 1.
26. Adeyemi K, Akpotu N(2004) Gender analysis of students' enrolment in Nigerian universities. *Higher Education* 48: 361-378.
27. Tawasu S (2005) Prevalence of drug abuse among medical students of the University of Maiduguri: Dissertation submitted to the National post-graduate medical college of Nigeria 8.
28. Osman T, Victor C, Abdulmonein A, Mohammed H, Abdalla F, et al. (2016) Epidemiology of substance use among university students in Sudan. *J Addict*.
29. Abayomi O, Onifade PO, Adelufosi AO, Akinhanmi AO (2013) Psychosocial correlates of hazardous alcohol use among undergraduates in South Western Nigeria. *Gen Hosp Psychiatry* 35: 320-324.
30. Ekpenyong S (2015) Drug abuse in Nigerian schools: A study of selected secondary institutions in Bayelsa State, south-South Nigeria. *Int J Sci Res Educ* 5: 260- 268.
31. Gebrelassie M, Feleke A, Melese T (2013) Psychoactive substances use and associated factors among Axum university students, Axum Town, North Ethiopia. *BMC Public Health* 13: 693.
32. Dada O (2012) University undergraduate students and substance abuse: A survey of a state university in Nigeria. *Pak J Soc Sci* 9: 292-301.
33. Atwoli L, Mungla PA, Ndung'u MN, Kinoti KC, Ogot EM (2011) Prevalence of substance use among college students in Eldoret, western Kenya. *BMC Psychiatry* 11: 34.