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

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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 ≤ 0.05.

Results: The mean age of the respondents was 22.2 ± 3.8 years. The prevalence of the lifetime 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 status (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 3.4% 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. 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.

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, Ogboke. The non-universities included in the stratification were Federal polytechnic, Nekede; Imo state polytechnic, Umuagwo and Alvan Ikoku college of education, Owerri. The first 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 ≤ 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)           |
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) |
| | Heroine | 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 media influence | 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.

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

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).

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 (%) |
|----------|---------------|
| Ever use any form of substance (n=430) | |
| Yes | 195 (45.3) |
| No | 235 (54.7) |
| Type used (n=195)** | |
| 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) |
| Heroine | 9 (4.6) |
| Morphine | 4 (2.1) |
| Refuse gas | 1 (0.5) |
| Soak away fume | 1 (0.5) |
| Cow dung | 1 (0.5) |
| Current use in the last one year (n=430) | |
| Yes | 125 (29.1) |
| No | 305 (70.9) |
| Type used in the last one year (n=125)** | |
| 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) |
| Heroine | 3 (2.4) |
| Morphine | 1 (0.8) |
| Cow dung | 1 (0.8) |
| Reason for substance use (n=125) |
|----------------------------------|
| To relieve depression            |
| To enhance alertness             |
| To keep awake at night           |
| Peer pressure                    |
| To enhance energy level          |
| To enhance academic performance  |
| Good aroma                       |
| Improve appetite                 |
| To lose weight                   |
| To improve taste of food and drink|
| To maintain good health          |

| Positive effect noticed after use (n=125) |
|------------------------------------------|
| Increase alertness                      |
| Increase energy level                   |
| Elevated mood                           |
| Enhanced sexual performance             |

| Negative effect noticed after use (n=125) |
|------------------------------------------|
| Restlessness                             |

| Variable                  | Yes (%) n=125 | No(%) n=305 | Total (%) n=430 | χ²   | p-value |
|---------------------------|--------------|------------|-----------------|------|---------|
| Gender                    |              |            |                 |      |         |
| Male                      | 99 (42.3)    | 135 (57.7) | 234 (100.0)     | 43.6 | <0.001* |
| Female                    | 26 (13.3)    | 170 (86.7) | 196 (100.0)     |      |         |
| Age (years)               |              |            |                 |      |         |
| 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)       |      |         |

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).
|                | 20.0 ± 3.9 | 20.0 ± 3.8 |          |          |
|----------------|------------|------------|----------|----------|
| **Religion**   |            |            |          |          |
| Christianity   | 120 (29.9) | 282 (70.1) | 402 (100.0) | 1.83 0.177 |
| Islam          | 5 (17.9)   | 23 (82.1)  | 28 (100.0)  |          |
| **Faculty**    |            |            |          |          |
| 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) |          |
| **Level of study** |      |            |          |          |
| 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 (31.8)  | 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)  |          |
| **Residence**  |            |            |          |          |
| 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)  |          |
| **Family type**|            |            |          |          |
| 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)   |          |
| **Status of parents union** |      |            |          |          |
| 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)  |          |
| **Fathers’ level of education** |      |            |          |          |
| 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) |          |
| **Mothers’ level of education** |      |            |          |          |
| None           | 6 (27.3)   | 16 (72.7)  | 22 (100.0)  | 6.79 0.079 |
Table 4: Association between socio-demographic variables and current use of psychoactive substances in the past one year.*Significant.

| Predictor                          | OR (estimate) | 95% (CI) | p-value |
|-----------------------------------|---------------|----------|---------|
| Gender                            |               |          |         |
| Male                              | 4.79          | 2.95-7.81| <0.0001 |
| Female                            | 1             |          |         |
| Age                               |               |          |         |
| 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   |
| Religion                          |               |          |         |
| Christianity                      | 1             |          |         |
| Islam                             | 0.51          | 0.19-1.38| 0.184   |
| Faculty                           |               |          |         |
| Medical science                   | 1             |          |         |
| Pure science                      | 2.29          | 1.06-4.97| 0.036   |
| Arts/Social science               | 1.86          | 0.97-3.57| 0.064   |
| Level of study                    |               |          |         |
| 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   |

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

| Accommodation status              | OR (estimate) | 95% (CI) | p-value    |
|-----------------------------------|---------------|----------|------------|
| Hostel                            | 10.03         | 4.37-22.99| <0.0001    |
| Off campus                        | 4.87          | 2.11-11.28| <0.001     |
| Living with family                | 1             |          | -          |
| Nature of family                  |               |          |            |
| Monogamy                          | 1             |          | -          |
| Polygamy                          | 1.73          | 1.09-2.75 | 0.026      |
| Polyandry                         | 0.94          | 0.19-4.77 | 0.943      |

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 Onoja 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.

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