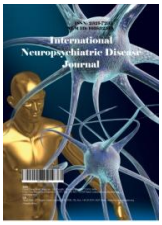

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# The Pattern of Psychoactive Substance Use among Undergraduates in the University of Port Harcourt, Rivers State, Nigeria

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors designed the study, performed the statistical analysis and wrote the protocol. Author CO wrote the first draft of the manuscript and managed the literature searches. All authors read and approved the final manuscript.*

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## ABSTRACT

**Aim:** This study set out to determine the extent of use, abuse and dependence of commonly abused psychoactive substances and their correlates among undergraduates in the University of Port Harcourt.
**Methodology:** In a cross-sectional survey, using multi-stage sampling, undergraduates in the Social sciences faculty of the University of Port Harcourt, Nigeria were selected. A semi-structured questionnaire adapted from the WHO student drug survey proforma was used as an instrument for data collection. The results were analysed using EPI-info 2000 statistical package.
**Results:** There were 352 respondents with a mean age of 24.4 ± 3.5 years. There were 203 (57.7%) males and 149 (42.3%) females. A majority of respondents (90.6%) use at least one psychoactive substance while 22.2% of them abuse substances. The male sex predominated

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among the substance abusers with a M: F ratio of 2:1. The prevalence of current use for psychoactive substances ranged from 1.3% to 74.9%. Alcohol (74.9%), was the most commonly used psychoactive substances while heroin (1.3%), was the least used. Abuse rates were higher in cocaine, tobacco and cannabis (66.7%, 63.6% and 55.3% respectively) while dependency rates were higher in heroin, cannabis and cocaine (100.0%, 76.2% and 50.0% respectively). The top three reasons given for starting to use psychoactive substances were experimentation (23.1%), group conformity (23.1%) and curiosity (20.5%) while the reasons given for continuing to use/abuse these substances were to feel good (37.2%), relieve stress (20.0%) and avoid withdrawal symptoms (11.5%). The majority (70.5%) of psychoactive substance users started to use substances before enrolment into the university while more than half of the substance users (56.4%) admitted that being in the university did not increase their use of psychoactive substances. Adverse effects on productivity were noted in 60.3% of substance users.

**Conclusion:** The tendency to abuse substances may begin earlier in childhood and adolescent ages, with the male sex, more vulnerable. More efforts at public enlightenment on the detrimental effects of psychoactive substances should be strategically targeted to include the family unit, primary and secondary school children.

*Keywords: Psychoactive; substance abuse; undergraduates; cannabis; caffeine; heroine; alcohol; tobacco; cocaine.*

## 1. INTRODUCTION

Psychoactive substance abuse refers to the habitual use of drugs not needed for therapeutic purposes, to alter one's mood, affect or state of consciousness [1]. It is a maladaptive pattern of drug or substance use that can result in social, legal, occupational or physical consequences [2]. The relative independence and the desire for group conformity experienced by university undergraduates makes them particularly vulnerable to this harmful practice. Hence, the use of illicit drugs and substances have now become commonplace in most tertiary institutions in Nigeria [3].

The World Health Organization defines substance abuse as the harmful or hazardous use of psychoactive substances including alcohol and illicit drugs [4]. Substance dependence is the psychological or physical need to continue taking a substance or drug [4]. Psychological dependence is the intermittent and recurrent craving for the substance of abuse while physical dependence refers to the development of tolerance for the substance or the necessity to take substances to prevent the development of withdrawal symptoms [4]. Tolerance is the need to take progressively higher doses of a particular substance to achieve a given effect. Withdrawal syndrome implies a constellation of signs and symptoms which occur when drug administration in a physically dependent person is abruptly terminated [4]. Some common examples of psychoactive substances include alcohol, cocaine, opium, cannabinoids, amphetamines, sedative and hypnotics [5]. Anxiolytics and other stimulants like caffeine, hallucinogens, nicotine, volatile solvents and phencyclidine are also classified as psychoactive substances [5]. The deleterious effects of substance abuse on the student include poor academic performance, impaired concentration, truancy, increased expenses, increased risky sexual behaviour, violence, cultist activities and mental health problems [6-9]. Alcohol and tobacco have been documented as leading risk factors of death among the 15-49 years age group [10].

While some undergraduates commenced the use of psychoactive substances before enrolment into the University, others got introduced to the use of these substances while in the university [11]. Several predisposing risk factors to substance use and abuse may be considered [12]. These factors can be grouped broadly into environmental or social factors and personal factors [12,13]. Environmental factors or social factors include availability/ ease of procuring psychoactive substance, peer pressure, curiosity, idleness and unstable family conditions. Personal factors include age, sex, vulnerable personality and low self-esteem [13,14].

Several studies have been done on psychoactive substance abuse in young adults, however, very few studies have attempted to explore the role of the university community (if any) in influencing the undergraduate to use or abuse psychoactive substances [2,12,15,16]. This study, therefore, sought to determine the extent of use, the abuse and dependency rate of commonly used

psychoactive substances, to identify the reasons for substance use or abuse and to explore the influence of the university community on undergraduates as it relates to substance abuse. This will highlight the relevant key areas of focus for public health interventions to curb the menace of psychoactive substance abuse.

## 2. METHODOLOGY

### 2.1 Study Design and Participants

The descriptive cross-sectional study was conducted at the University of Port Harcourt, Choba (UNIPORT). This institution is the biggest and the only federal-owned university in Rivers state. It has 3 main campuses, - Abuja, Delta and Choba, 19 resident hostels, 7 faculties and an estimated population of over forty thousand students as at the time of this research in October 2006. The sample population consisted of registered undergraduate students of Uniport from 2nd to 4th year. 352 students, identified by their student identification cards, were recruited into this study. A multi-stage sampling method was used to select eligible respondents over eight weeks. In the first stage, a simple random sampling technique was used to select one faculty out of the 7 faculties in UNIPORT (Humanities, Social sciences, Sciences, Education, Engineering, Management Sciences and Health sciences. The Social sciences faculty was chosen by balloting. The social sciences faculty has four departments (Geography and environmental management, political and administrative studies, sociology and economics). In the second stage, a disproportionate stratified sampling technique was used as 60 respondents were allotted to each of the four departments. A departmental list of students was obtained and 20 students from each level (level 200 to 400) recruited into the study.

The required sample size of 360 was calculated with the appropriate formula [17] using the prevalence rate of 33% in a study by Oshikoya and Alli [11].

### 2.2 Data Collection

A structured self-reporting anonymous questionnaire was designed and used to collect information concerning the respondent's knowledge of substance abuse. The 4-page questionnaire which was modified and adapted from the WHO student drug survey proforma, [18] contained information on biodata, diagnosis of substance abuse, diagnosis of dependence, withdrawal and the effect of the university on substance abuse. The Diagnosis of substance abuse, dependence and withdrawal were made using the DSM-IV- TR Criteria [19] Ten 5th year medical students of UNIPORT were trained on data collection and functioned as assistants. The purpose of the study was explained to the respondents and consent form administered. Questionnaires were distributed to the selected respondents.

### 2.3 Pre-testing

The study instrument was pretested among 50 male and female undergraduates of Rivers State University, another tertiary school in Rivers state Nigeria. The questions were subsequently modified in line with the study objectives.

### 2.4 Statistical Analysis

Data were analysed using EPI-info 2000 statistical package and presented using tables.

### 2.5 Ethical Consideration

Approval for the study was obtained from the Ethical Review Committee of the University of Port Harcourt. Written consent was also obtained from study participants. Participation was entirely voluntary and confidentiality was ensured. Codes rather than participants' names were used as personal identifiers.

## 3. RESULTS

Three hundred and fifty-two students returned properly filled questionnaires giving a response rate of 98%. The age, gender and background distribution of the study participants are shown in Table 1. The mean age of the respondents was 24.4 + 3.5 years. There were 203 (57.7%) males and 149 (42.3%) females with a male to female ratio of 1.4: 1. Most (99.5%) of the respondents were Christians. There were 319 (90.6%) substance users and 78 (22%) substance abusers.

The prevalence of current use for psychoactive substances ranged from 1.3% to 74.9%. Alcohol (74.9%), caffeine (55.8%) and tobacco (14.7%) were the most commonly used psychoactive substances while heroin (1.3%), cocaine (1.9%) and cannabis (10.4%) were the least commonly used (Table 1).

Psychoactive substance abuse rates were higher for cocaine, cannabis and tobacco (66.7%, 63.6% and 55.3% respectively) (Table 2), while substance dependency rates were higher for heroin, cannabis and cocaine (100.0%, 76.2% and 50.0% respectively). Adverse effects on productivity were noted in 60.3% of substance users, (Table 3).

The three most common reasons given for starting to abuse psychoactive substances were group conformity (23.1%), experimentation (23.1%) and curiosity (20.5%) (Table 4), while the top three reasons given for continuing to use/abuse substances were to feel good (37.2%), to relieve stress (25.6%) and to avoid withdrawal symptoms (11.5%), (Table 5).

**Table 1. Demographics and substance use**

| | n(%) | Total (n=352) |
|---|---|---|
| **Age (years)** | | |
| 15-19 | 40 (11.4) | |
| 20-24 | 210 (59.7) | |
| 25-29 | 96 (27.3) | |
| 30-34 | 4 (1.1) | |
| 35-39 | 2 (0.6) | 352 (100.0) |
| **Sex** | | |
| Male | 203 (57.7) | |
| Female | 149(42.3) | 352 (100.0) |
| **Background** | | |
| Rural | 73 (20.7) | |
| Urban | 279 (79.3) | 352 (100.0) |
| **Substance use** | | |
| Users | 319 (90.6) | |
| Non-users | 33 (9.4) | 352 (100.0) |
| **Substances being used (n=319)** | | |
| Alcohol | 239 (74.9) | |
| Cannabis | 33 (10.4) | |
| Cocaine | 6 (1.9) | |
| Tobacco | 47(14.7) | |
| Heroine | 4 (1.3) | |
| Caffeine | 178 (55.8) | |
| (*Multiple responses apply)* | | |

**Table 2. Psychoactive substance abuse rate per substance**

| Substance | Number of users | Number of Abusers | Abuse rate (%) |
|---|---|---|---|
| Alcohol | 239 | 62 | 25.9 |
| Cannabis | 33 | 21 | 63.6 |
| Cocaine | 6 | 4 | 66.7 |
| Tobacco | 47 | 26 | 55.3 |
| Heroine | 4 | 2 | 50.0 |
| Caffeine | 178 | 35 | 19.7 |

**Table 3. Psychoactive substance dependency rate per substance**

| Substance | Number of Abusers | Dependants | Dependency rate (%) |
|---|---|---|---|
| Alcohol | 62 | 36 | 58.1 |
| Cannabis | 21 | 16 | 76.2 |
| Cocaine | 4 | 2 | 50.0 |
| Tobacco | 26 | 17 | 65.4 |
| Heroine | 2 | 2 | 100.0 |
| Caffeine | 35 | 21 | 60.0 |

Table 6 shows the characteristics of substance abusers and the effect of the University on psychoactive substance use. Majority of the psychoactive substance abusers were males (69.2%) and from a rural background (69.2%). Over two-thirds of the respondents who abused psychoactive substances initiated use before enrolment into the university while over half (56.4%) of the substance abusers did not significantly increase their use of psychoactive substances while in the university, (Table 6).

## 4. DISCUSSION

This study aimed to determine the extent of use of psychoactive substances, the reasons for substance use or abuse and the influence of the university community on undergraduates as it relates to substance abuse. In this study, there was a high prevalence of substance use with over 90% of the undergraduate students using substances. This is higher than the prevalence of

**Table 4. Reasons for starting to use psychoactive substances**

| Reasons for starting | Frequency | Percentage |
|---|---|---|
| Group conformity | 18 | 23.1 |
| Experimentation | 18 | 23.1 |
| Curiosity | 16 | 20.5 |
| Improve academic performance | 14 | 18.0 |
| Emotional stress | 9 | 11.5 |
| Academic stress | 5 | 6.4 |
| Others | 9 | 11.5 |
| Non- response | 7 | 9.0 |

**Multiple responses apply*

**Table 5. Reasons for continuing to use/abuse psychoactive substances**

| Reasons for starting | Frequency | Percentage |
|---|---|---|
| To feel good | 29 | 37.2 |
| To relieve stress | 20 | 25.6 |
| To avoid withdrawal symptoms | 9 | 11.5 |
| To concentrate | 6 | 7.7 |
| To function efficiently | 4 | 5.1 |
| Peer pressure/conformity | 3 | 3.9 |
| Others | 1 | 1.3 |
| Non- response | 16 | 20.5 |

**Multiple responses apply*

**Table 6. Characteristics of Substance abusers and the effect of enrolment in the University on psychoactive substance use**

| | n(%) | Total (n=78) |
|---|---|---|
| **Sex** | | |
| Male | 54 (69.2) | |
| Female | 24(30.8) | 78 (100.0) |
| **Background** | | |
| Rural | 54 (69.2) | |
| Urban | 24 (30.8) | 78 (100.0) |
| **Time of onset of substance use** | | |
| Before enrolment in the university | 55 (70.5) | |
| After enrolment in the university | 19 (24.4) | |
| Non-response | 4 (5.1) | 78 (100.0) |
| **Effect of enrolment in the University on substance use** | | |
| Increase in the use of psychoactive substances | 29 (37.2) | |
| No increase in the use of psychoactive substances | 44 (56.4) | |
| Non-response | 5(6.4) | 78 (100.0) |

65% obtained in a similar study done by Chukwujekwu [3] in a private tertiary institution in Rivers State, Nigeria. The higher prevalence obtained in this present study may be because the students were selected from the social sciences faculty only unlike in the study by Chukwujekwu [3] in Madonna University were the respondents cut across all the faculties in the university. Moreso, a much lower prevalence of 56% of lifetime use of psychoactive substance was obtained in a study done among medical students in Enugu, Nigeria [20]. The courses offered in the social sciences faculty (eg. Geography, Political science, sociology) are generally considered less tedious than the core sciences (eg. Engineering, Medicine etc), and as such students in social sciences faculty may have more time and energy to engage in social activities within the campus. This avenue for increased peer interaction may result in more peer influence and heightened likelihood to engage in risky behaviours.

In this present study, males predominate among psychoactive substance abusers in a M: F ratio of 2.3:1. This is consistent with previous research findings that the male gender is a risk factor for substance abuse in students [3,21-23]. A possible explanation for this is that the male sex is more given to experimentation and adventurous behaviours. Males tend to take more risks and engage in social groups and activities within the university setting where alcohol and other psychoactive substance use is the norm.

The most commonly used substance in this present study was alcohol. This is in sync with the findings of other researchers who reported high prevalences of alcohol use both in secondary school children and university undergraduates [6,24-27]. Alcohol is often available for purchase in the shops and has a wide price range, allowing for even undergraduate students to afford particular brands. Alcohol is also served regularly is social gatherings attended by these students within the university campus as well as during cult meetings [6,28]. Alcohol has been termed a gate-way drug as it often, unfortunately, serves as the beginning point for an adventure into full-blown substance use, abuse, addiction and dependence [3].

The other psychoactive substances commonly used as revealed in this study (Caffeine, Tobacco, Cannabis, Heroin, Cocaine), have also been reported by previous authors as commonly used by students [5,23,29]. Caffeine, which through its central nervous system stimulant activity, has the potential to increase wakefulness, has become commonly used by students to enable them to study for prolonged hours at night [5]. These students are often unaware of the possible harmful effects of habitual use of caffeine. Tobacco, cannabis, heroin and cocaine, on the other hand, are mainly used to achieve a 'high' feeling where the student becomes temporarily oblivious to any current negative situations [5]. This euphoric effect is desired especially by students who are experiencing some form of frustrations emanating from their family, academics, finances or social life. This present study revealed that substance dependency rates were higher for heroin, cannabis and cocaine. With dependency, the students now require these psychoactive substances to function normally. This takes a toll on the student's finances as these particular substances are expensive. There is then a ripple effect on every aspect of the students' life resulting in stealing, lying, truancy, deteriorating health, poor academic performance, school dropout and even death [30].

The most common reasons given for starting and continuing to abuse substance were out of experimentation, group conformity and curiosity. Other reasons given were to improve academic performance, to cope with academic and emotional stress. These reasons can be classified using a four-factor model of motivation for substance use: "social," "coping," enhancement," and "conformity" [30]. The findings of this study is comparable to that of other researchers who reported curiosity, experimentation and peer influence as major factors leading to the use and abuse of psychoactive drugs amongst students [5,6,28,29]. In this present study 18% of respondents started to and continued to abuse substance believing it would improve their academic performance. Thirty-five percent of secondary school children in a study in south-west Nigeria, [30] believed using substance would improve their academic performance.

Many studies investigating the use of psychoactive substances in secondary schools have shown an alarming prevalence of use of these substances in secondary schools [5,6,21,23] This further supports the findings in this research, as well as that of Umukoro et al, [31] that many students had been initiated into

the use of these dangerous substances before commencing their tertiary education. Furthermore, more than half of the substance abusers reported that being in the university did not increase their substance abuse habit. This suggests that the university environment did not impact on their decision to continue to use the substances or not. This no table finding is similar to the report of Adeyemo et al. [32] in Benin City, Nigeria, where 79.9% of the undergraduates using psychoactive substances, confessed that the university environment did not influence their drug abuse habit. This is important to note as it further buttresses the fact that much of the negative influence which results in university students using or abusing psychoactive substances perhaps exists outside the four walls of the university. This information is key for the structuring of intervention programs to reduce psychoactive substance abuse. More focus should hence be given to enlightening the family unit, primary and secondary education institutions and the community at large while also sensitizing the university undergraduates.

## 5. CONCLUSION

There is an alarmingly high prevalence of psychoactive substance use and abuse among university students with a large proportion of them initiating use before enrolment into the university. More concerted efforts should be made by the government of Nigeria and all members of the society, at all levels to curb this problem. Enlightenment programs should target children while still in their early ages within their families, primary and secondary educational institutions.

## 6. RECOMMENDATIONS

Programs aimed at curbing the menace of substance abuse should begin at a level before the onset of tertiary education in youths. These programs should especially address youths at an earlier age when their values and habits are still being formed. Youth-friendly centres should be actively functioning and well-funded. Rehabilitation centres should also be set up to help abusers and substance-dependent students amend their lifestyle positively.

## 7. STUDY LIMITATIONS

There was no data triangulation. Information obtained from respondents concerning their use or non-use of substance could not be verified through any other means. Hence the validity of the information given relies solely on the credibility of the respondents. It was also difficult getting all selected study participants to gather at a location, making data collection tedious.

Also, the research participants where strictly from the Social sciences faculty, hence the findings of this research may not represent the behaviour of all students in UNIPORT.

## 8. LINES OF FUTURE RESEARCH

Further research should inquire about the exact age of initiation of psychoactive substance use and the factors influencing initiation of use in children and young adults.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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