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**RESEARCH ARTICLE**

## **Evaluation of Psychoactive Substance use and its risk factors among Public School Students of Rivers State, Nigeria**

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### **ABSTRACT:**

The abuse of chemicals particularly psychoactive substances has been on the increase amongst the youth populace to the extent of becoming a front burner and top category public health concern in many developing nations of Africa, hence the aim of this study to evaluate the use of psychoactive substance and its risk factors among secondary school students in Port Harcourt LGA of Rivers State, so as to establish the prevalence rate of the use of the substances among the student populace. The research is a prospective study of 450 students of age between 11- 21 years, chosen randomly in secondary schools of Rivers State. A pre-coded structured and self-administered substance use questionnaire was employed in the survey with the contents ascertained by experts. The results showed that a range of between 68% - 83% of the respondents claimed knowledge of the use of substance. 21.7% claimed part use of substance while 52.1% and 30.5% claimed ever and current use respectively. The commonly used substances were cannabis- 16.7%, tobacco- 14.3%, alcohol- 8.3%, and analgesics- 46.7%. The overall prevalence among the respondents was 30%. Generally, the study revealed that the male drug users were significantly higher than the female drug users and also indicated that majority of the substance users were influenced by psychological factors. It is suggested that there is need to develop a viable substance abuse preventive programme in our schools. This study is recommended as a material for stakeholders of education for strategic health preventive campaigns.

### **KEYWORDS:**

### **INTRODUCTION:**

The use of Substances is one of the most burning and growing public health problems in many developing countries, Nigeria inclusive especially in majority of the socioeconomic active states.

Many young people are getting involved into substance use in Nigeria. The United Nation's division of narcotic drugs reported that never before have there been so many young people, even children, flirting with substance and their associated hazards (1). Drugs as defined by the International Convention of 1961 for Narcotic Drugs, and of 1971 for psychotropic substances, include all substances and chemicals that should not be used for any purpose other than for medical and scientific research. If used for purposes otherwise stated, they are then abused.

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A psychoactive drug or psychoactive substance is a chemical substance that crosses the blood-brain barrier and acts primarily upon the central nervous system where it alters brain function, resulting in temporary change in the state of perception, mood, consciousness, behavior and general consciousness. Psychoactive substance typically activates dopamine receptors in the reward pathway of the brain - from the limbic system, particularly the ventral tegmental area, to the prefrontal cortex, specifically the nucleus accumbens.

Psychoactive substance and subsequently misuse has for many years been an issue of increasing health and social importance in Nigeria. This is especially so for the critical adolescent period marked by several changes including the psychological phenomenon of experimentation. Studies carried out in the last two decades in Nigeria have identified adolescents as a major group involved in the use of psychoactive substances.

The period of high school life is a critical developmental period commonly associated with escalations in a range of health-risk behaviors including alcohol, tobacco and illicit drug use (2). Substances use occurs in all segments of all societies especially among students, which the overall effect results in decreased work, decreased academic performance, increased risk of contracting all sorts of sexually transmitted diseases, accidents, intoxication while working, absenteeism, violent crime, theft and other psychiatric disorders such as lethargy, hopelessness and insomnia (3,4).

Use of substances such as alcohol, tobacco have long been recognized as one of the leading causes of human suffering and become one of the rising major public health and socio-economic problems worldwide (5,6). The use of alcohol, tobacco and other substances constitutes one of the most important risk-taking behaviors among adolescents and young adults in secondary schools and colleges with consequent physical and /or mental health complications (3,7). However, hard drugs such as heroin and cocaine are rarely used (3,8).

Recent trends indicate that the use of substances have dramatically increased particularly in developing countries (5,3). Despite worldwide concern and education about psychoactive substances, many adolescents have limited awareness of their adverse consequences (7).

## **METHODOLOGY:**

### **Research Design:**

This research design is a quantitative study and descriptive survey on the Evaluation of psychoactive

substance use and its risk factors among secondary school students in Port Harcourt LGA, Rivers state.

### **The Population:**

The populations for this study consist of young teenagers and adolescent students of age between 11 – 21 years in secondary schools located in Port Harcourt LGA of Rivers state.

### **Sample and Sampling Techniques:**

A calculated sample size of approximately 400 was gotten and further increased to 450 to make up for cases of attrition.

A multistage proportionate random sampling technique was used in the selection of this cross-sectional study in four schools. Final selection of the students was done by the simple random technique of balloting. The participants were further stratified by their sex (either male or female) and by their involvement in psychoactive substance (i.e. either users or non-users).

### **Instrumentation:**

A pre-coded structured and self-administered substance use questionnaire with four basic targets was employed in the survey. These targets include part for the socio-demographic information of the respondents, part for information on the awareness of the students of drugs and drug use of ten drugs namely: caffeine, cocaine, analgesics, heroin, tobacco, cannabis (marijuana), inhaler, antibiotics, barbiturates and alcohol; and part to collect information on the attitude of the students to drug use and lastly to seek information on the practice of substance abuse.

### **Validity of the Instrument:**

The content validity of the instrument was ascertained by three experts, one in each of health education, psychology/sociology, and in statistics from institutions of higher learning in Rivers state.

### **Reliability of the Instrument:**

A test- retest reliability of value of 0.9 was obtained using 50 students (25 males and 25 females) in another two secondary schools outside Port Harcourt. The participants used for the pilot study were outside the actual participants for the study. The researchers with a trained assistant visited the schools and administered the questionnaire to all the participants who voluntarily took part in the survey. The questionnaires were completed independently to decrease the possibilities of comparing notes and discussing the questionnaire items.

**Administration of the Instrument:**

The questionnaire was pre-tested using a total of 10 questionnaires given to senior secondary students of a school. The survey was conducted within a two-day period in each of the selected schools, and a total of 8 visits were made to the schools. The completion of the questionnaire was carried out during a class hour and respondents were not allowed to confer with one another during the exercise. Confidentiality was assured verbally and also stated on the front page of the questionnaire. To further reassure respondents about confidentiality, only investigators and not class teachers supervised the completion of the questionnaires. Anonymity was strictly ensured as the respondents were not required to write their names.

**Data Analyses:**

The data gathered was analyzed using SPSS statistics version 15.0. The statistics method included frequency counts, tables, bar charts and chi-square. An alpha level of 0.05 was set to test the entire hypothesis formulated for the study.

**RESULTS AND ANALYSIS OF DATA:****Introduction:**

The sample size was determined using Fisher's formula

$$n = \frac{Z^2 pq}{d^2} \quad \text{where } q = (1 - p)$$

was taken to be 400. There was a total of 450 distributed questionnaires in this study and only 420 were sufficiently completed to be used in analysis giving a response rate of 93.3%.

Majority of the respondents were between the age group of 16-19 years (65.5%); males (60.7%), those with married parents (81.4%) and students from monogamous homes (72.1%) respectively.

There was nearly equal distribution of respondents in SS 1 (134); SS 2 (141) and SS 3 (140) constituting 33.1%, 33.6% and 33.3% respectively. Majority of the respondents were science students with a proportion of 46.4% while the arts and commercial students made up 19.3% and 34.3% respectively. Majority of respondents lived with their parents making up 81.7% of those studied while 13.1% and 5.2% of them lived with their guardians and foster parents respectively.

**Analysis of findings:****Table 1: Socio-demographic characteristics of respondents**

Characteristics	Frequency (%)
Age (Years)	
10-15	125 (29.8%)
16-19	275 (65.5%)
≥20	20 (4.7%)
Sex	
Male	255 (60.7%)
Female	165 (39.3%)
Parent's Marital Status	
Married	342 (81.4%)
Divorced/ Separated	44 (10.5%)
Single	34 (8.1%)
Family Type	
Monogamy	303 (72.1%)
Polygamy	117 (27.9%)
Total	420 (100%)

**Table 2: Respondents' levels of awareness with respect to substance use**

Knowledge Variables	Yes (%)	No (%)	Total (%)
Narcotic drugs	336 (80%)	84 (20%)	420 (100%)
Unrecommended medical drugs	294 (70%)	126(30%)	420 (100%)
Substance prohibited by law	318 (75.7%)	102 (24.3%)	420 (100%)
Psychoactive substances	342 (81.4%)	78 (18.6%)	420 (100%)
Excessive use of alcohol	305 (72.6%)	115 (27.4%)	420 (100%)
Dependence on cigarette	280 (66.7%)	140 (33.3%)	420 (100%)
Use of Kolanut	185 (44%)	235 (55.9%)	420 (100%)
Unregulated use of prescription drugs.	186 (44.3%)	234 (55.7%)	420 (100%)

**Table 4: Respondents' view on the use of substances**

	Yes	No
Ever use	219 (52.1%)	201 (47.9%)
Current use	128 (30.5%)	292 (69.5%)
Past use	91 (21.7%)	329 (78.3%)

**Table 6: Reasons for Substance use**

Reasons	Frequency
To feel good	18 (4.3%)
Availability of drugs	40 (9.5%)
Parental influence	73 (17.4%)
Sibling influence	05 (1.2%)
To relieve stress	65 (15.5%)
School friends influence	135 (32.1%)
To sleep	21 (5%)
To keep awake	20 (4.8%)
To enhance sex	40 (9.5%)
No reason	03 (0.7%)
Total	420 (100%)

**Table 7: Problems of Substance Abuse**

Problems	Frequency
Medical	100 (23.8%)
Crime	60 (14.3%)
Academic	120 (28.6%)
Conflict	30 (7.1%)
Cultism	25 (5.9%)
Mental disorders	45 (10.7%)
Financial	40 (9.5%)
Total	420 (100%)

## DISCUSSIONS:

In this study, 420 questionnaires were sufficiently filled to be analyzed. The male sex constituted majority 60.7% of the respondents while female respondents were 39.3% a ratio of 1.5:1. This is in keeping with the male: female ratio of other studies done in Ibadan and Ilorin that reported ratio to be 1.4: 1 and 1.3: 1 respectively (9). A greater percentage of the respondents (81.4%) have married parents, 10.5% have separated/divorced and 8.1% have single parents. This is contrary to the pattern obtained in Nigeria as a whole where 59.4% of parents are married, 2.5% are divorced/separated (10). The respondents from the monogamous family setting were 72.1% while 27.9% are from the polygamous family setting. This is in keeping with the national data where 77.3% and 22.4% of the population are from the monogamous and polygamous settings respectively (11).

A Drug abuse was described as the use of any substance that has an adverse effect on the body or mind by 314 (84.4%) of the respondents. With this percentage, they can be said to be fairly informed about drug abuse. Fair because their knowledge could still be said to be inadequate about the various substances that can be abused as only 8.9%, 7.8%, 17.5%, 43.5%, 48.1% and 48.9% of the respondents were aware that sedatives, barbiturates, caffeine, cocaine and analgesics respectively can be abused. However, more respondents were aware that agents such as alcohol (61.0%), tobacco (88.4%) as substances that can be abused. The reason for this disparity in awareness can be the massive media advertisement for tobacco and alcohol that portrays those who drink as manly and sophisticated (10).

Majority of respondents from the monogamous family setting (74.3%) had positive attitude to drug abuse while 25.3% of the respondent from polygamous family setting had a negative attitude towards drug abuse. This could be due to relative sense of belonging, love, care and supervision children in monogamous setting enjoy when compared to their counterparts in the polygamous family setting.

This study revealed analgesic e.g. paracetamol as the most commonly abuse drug current use being 46.7%. This is comparable to some studies (9;12) though

contrary to some others that reported alcohol as the most abused drug. The factors responsible for this could be the easy availability of analgesics in the country, access to over the counter drugs from patent medicine stores where there are no serious restrictive laws against its use.

The least abused drugs/substances in this study were caffeine and morphine each which 4% of respondents used. This is contrary to a study that showed tobacco to be the least abused substance (13). This may be due to unavailability and inaccessibility of morphine and the respondents' inadequate knowledge of the stimulant effect of caffeine.

In this study, the prevalence of drug use among the respondents was found to be 30.5%. This is contrary to two studies done in Oyo state and another in Abeokuta with prevalence of 69.3%, 51.6%, and 51.5% respectively. (9;12). This may be due to the effects of urbanization and westernization on these relatively 'more urban' cities.

This study also showed more males (52.9%) than females (47.1%) abused drugs. This is in keeping with other studies that reported drug abuse to be commoner in males (14). This may be because males are more likely to be adventurous than their female counterparts and they are more likely to be experimenting during their adolescent years. Females on the other hand enjoy more supervision of parents/guardian because of the fear that their engagement in social activities could predispose them to being wayward. Similarly, Igwe et al (15) found out that males abused alcohol, kola nuts and coffee than females with cigarette and cannabis still the exclusive preserve for the males. However, the study conducted by Young, Boyd and Hubbell (16) discovered a high prevalence of psychoactive substance use among women who engaged in prostitution than their male customers. It is not out of place to reason that addiction to psychoactive substances might be responsible for the risky sexual behaviour among the women population.

The study also shows that majority (70.5%) of those from separated/divorced families abuse drugs. This is similar to other studies that linked drug abuse to children from dysfunctional families (14). The reasons for this may be due to lack of parental love, care and supervision that children from dysfunctional families suffer. The importance of peer influence and high income has been previously reported as factors associated with drug use among students (17).

The prevalence of lifetime use of alcohol was 15.2%, the percentage of ever use and current use of alcohol was 6.9% and 8.3% respectively. This is contrary to studies

done in Ibadan, Oyo state and Ogun state that put the ever use of alcohol to be 56% and 51% respectively (14).

The use of mild analgesics (paracetamol, antimalarias - especially Chloroquine – and antibiotics followed the psychostimulants, in that order is fairly high too. Although, they are drugs used in clinical practice, our subjects misused them without prescription from appropriate health professionals. In Nigeria, self-medication is a major problem cutting across various ages and social classes. It is a widespread belief among the populace that clinical symptoms such as body pain, headache and /or fever would usually be due to malarial infestation (which is endemic in Nigeria) and/or bacterial infection. Hence, the practice of self-medication with these groups of drugs: analgesics, antimalaria and antibiotics which could all be purchased over the counter in the country without a prescription. As a consequence of widespread poverty in the country, self medication is also partly seen as a cost-saving measure to avoid paying for clinical consultation (18, 19). Analgesics were noted to be the most commonly used drug in this study with a prevalence of 46.7%. This is similar to results of several other studies done in the country (13; 14). This indiscriminate use may partly result from easy availability, over the counter purchases being a common phenomenon in the country. With a male to female ratio of 1.1:1, comparison can be made with a similar study (9) in which no sex difference was noted.

Majority of our respondents (35%) were daily users. This is similar to a similar study (9) where almost half of the current cigarette smokers engage in daily use. The increased life time prevalence and current use of cigarette more than alcohol could be accounted for by the fact that cigarette is cheaper as the cheapest stick can be bought for as low as N10, while the cheapest cost of a bottle of beer can be as much as N200. Most of the respondents are from the low socioeconomic group, so it is more convenient for them to spend N10 than N200. Also, cigarette contains nicotine which is an addictive substance. So, once smoking starts, it is addictive and thus more difficult to stop the habit. In fact, Omigbodun and Babalola (10) considered alcohol and cigarette smoking as gateway drugs. The duo is described as gateway substances because they are the initial substances used before other ones such as cannabis and cocaine are tried out. Hales (20) noted that college students are most likely to drink if they can easily obtain cheap alcohol, especially beer. One possible reason that could be adduced for the high percentage of alcoholic consumers and cigarette smokers among the students may probably be the high level of general social acceptance of alcohol and tobacco in Nigeria, combined with the ignorance about their harmful effects on health

(21,22). Another reason for the increase in the use of alcohol, tobacco and marijuana among the Nigerian students may be the fact that these drugs are readily available at shops, joints around schools, street corners and supermarkets without any age restrictions (23,24). Furthermore, few manufacturers of alcoholic beverages had volunteered in the past to sponsor important national competitions. In this study majority of the respondents (37.3%) started using illicit drugs because their parents use it this is similar to a study which showed that adolescents are more likely to start smoking if their parents' smoke (25). It was postulated that when parents or other adults in the environment use drugs, the adolescents around are more likely to use drugs this is however similar to our study. This can be attributed to the fact that parental attitude has a strong where they can be easily influenced by their parents' actions and behaviour. The prevalence of alcohol, tobacco and cannabis use in our study was relatively low but similar to findings from previous studies (26; 27). When compared to previous similar studies in the country (12), cocaine and heroin were used among a relatively higher number of subjects in our study, with 3.8% lifetime use for each of them and 1.9% (cocaine) and 3.3% (heroin) for current use. This could be accounted for by the cosmopolitan, urban nature of the study environment (Port Harcourt, the commercial capital of South South geo-political zone). Some previous Nigerian studies have shown increasing use of heroin and cocaine since the 1980s in major Nigerian cities and towns (28).

Among the students studied, substance use in the last 12 months was associated with reporting higher family income. Carlini-Cortin, et al., (29) also observed that students in private schools in São Paulo reported significantly higher use of cigarettes, alcohol, inhalants, and marijuana in a recent time period than students of the same age in public schools. Baus, et al., (30) observed that among the students of first and second grades, those from high socioeconomic class showed a risk two-times greater for alcohol use than those from lower class. In addition, they hypothesized that in this case, economic and cultural determinants may be related to the pervasiveness of "beer parties" and the price of alcohol beverages. The influence of socioeconomic class was also noted in the increased use of illegal drugs in the middle class as compared to the lower class.

The result of this study also indicated that majority of psychoactive substance users were influenced by psychological factors such as weight control, desire to excel, acceptance by others desire to experiment and self-confidence. The psychological motives of drug used in this study focused on only some traits that might be peculiar with students in secondary schools. The results

followed the same trend of slight difference between psychoactive substance users and non-users in almost all the factors that were identified in this study. However, participants who did not use psychoactive substances indicated that desire to excel, fear of failure and frustration were strong factors motivating students to try psychoactive substances. Other researchers (31; Akers, 32; 33; 34 and 35) had previously found out similar findings. Another key finding of this study was the perception of users and non-users on the health effects of psychoactive substance. The participants (users and non-users) in this study were able to identify health effects such as aggressiveness, sleeplessness, tension, hand tremour, headache, mental problem, poor concentration and high blood pressure as possible health effects of psychoactive substance consumption. This finding was similar to the reports of Kathleen, et al., (36); Hales (20); WHO (37) and Horwood, et al., (38). One may assume that the majority of the youths who consume psychoactive substances for the fun of it or possibly to please their peers do so because they lack the knowledge of the health effects of such psychoactive substances on the users. In support of this assertion, Olaitan (22) revealed that most adolescents lack knowledge of the effects of psychoactive substances they engaged in. It is believed that if students are aware of the health effects of psychoactive substances use, the tendency to stop or not indulge in the act may be high. Yakasai (39) concluded that there has been a lot of misinformation and distortion of facts about drug use and its effects.

### CONCLUSIONS:

This study demonstrated that substance use among school children is high as reported previously. It also observed increasing female involvement. This is supported by previous findings among secondary school students in Nigeria (12). The study also found increasing substance use with decreasing age, (being most prevalent in the age group between 10-14 years), corroborating with the finding of Abiodun, *et al.*, (9). It was also found that the mean age of onset of consumption of drugs like cocaine, cigarette was high while that for alcohol and kolanut was low. In fact, some students admitted taking alcohol from about the age of two according to their parents. This could be as a result of availability of alcohol in the homes and also more social permissiveness in some cultures in the Niger Delta Areas of Nigeria where children are given alcohol to sip when the adults are drinking. Parental influence played important role in the use of alcohol, kolanut and cannabis while peer pressure influenced significantly the use of tobacco/cigarette, cannabis and cocaine. These findings are generally in keeping with the previous reports on the strong influence of peer pressure (40,41), and parental influence (42), on substance use among

youths. The common reasons for the use of substances were to relieve stress, feel good, parental influence and availability. Alcohol and tobacco/cigarette were the commonly used substances to relieve stress. It was found that there was positive correlation of the use of cigarette with the use of most of the other substances investigated. This sub-population of more than one substance users may therefore represent a particularly high-risk group that may be more vulnerable to the physical and psychosocial complications of poly-substance use.

In the present study, the majority of students did not experience the harmful effects of the substances especially morphine, cocaine and cannabis. This is in support of a previous study in Port Harcourt (43) in which the students demonstrated poor knowledge of the adverse consequences of drug abuse. This may be attributed to inadequate drug education received by students and relative lack of appropriate information about drug abuse. Perceived harmfulness of alcohol and tobacco/cigarette by the students did not necessarily deter them from substance use. This finding is supported by results of some studies (44).

Perceived harm of alcohol and cigarette were significantly associated with their current use. Studies have shown that respondents with higher knowledge of harm being associated with these substances tend to be nonusers. In Nigeria, while some studies found that perceived harm of a substance could be a deterrent to its use (45), others reported contrary findings similar to what we found in this study (9). These contradicting findings will suggest a need for further studies among medical students. The findings will be more comparable if similar study design and analytical methods are used.

From this study, it was found that most of the respondents had adequate awareness on the issue of substance abuse (67.7 - 82.8%), majority had inadequate knowledge of some specific substances like barbiturate and sedatives and most of the respondents showed positive attitude with respect to use of substance. The prevalence of substance abuse among respondents was 30.5%. Most commonly abused substances are analgesics, cannabis and tobacco and sedatives were abused more by females than males. The predominant reasons for indulgence of respondents in use of drugs are for 'academic' purposes, to feel high/good and for physical fitness.

### RECOMMENDATIONS:

There is a need to develop a viable substance abuse preventive programme and a comprehensive data base on substance abuse among adolescents. Programs should be instituted to introduce the subject of substance abuse

into the school curriculum and the creation of youth social clubs should be encouraged to fight against substance abuse.

We suggest that planners of health education should continue to lay emphasis on the risks of psychoactive substance use as part of the health subject curriculum. Other governmental and non-governmental bodies should also continue to plan and implement campaigns against substance use not only among students, but the society in general. It is therefore suggested that strict parental upbringing be enforced while parents who use these drugs should be discreet, to avoid negative influence on the children. Furthermore, there is need to intensify drug education programmes in our schools and school authorities should institute severe disciplinary measures on students who use these drugs.

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