Pattern and associated factors of psychoactive substance use among undergraduate students in a North-eastern Nigerian University

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Abstract

Objective: There is an increased trend in the use of psychoactive substances among youths in Northern Nigeria. Youths use substances to enhance performances. Studies have shown associations between drug use and psychiatric morbidity. This study examined the use of psychoactive substances among undergraduates. It also assessed the presence of psychiatric morbidity among the users and nonusers of psychoactive drugs.

Method: The study was a cross-sectional study using WHO Student Drug Use Survey Questionnaire and GHQ-12 for 983 undergraduates of a northern Nigeria university.

Results: The prevalence rate of psychoactive substance use was 36.5%. Tobacco, stimulants and alcohol were commonly used drugs. Parental separation and fathers' use of drugs were factors associated with the use of psychoactive substances. Psychiatric morbidity among substance users and non-users were 31.0% and 11.8%

Conclusion: The study found high rate for the use of psychoactive substances among the students with correspondingly high rate of psychiatric morbidity among the users of psychoactive substances.

Keywords: Psychoactive substance; Psychiatric morbidity; undergraduate students.

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Profil et facteurs associés de la consommation de substances psycho actives chez les étudiants du premier cycle dans une université du nord-est du Nigéria

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Résumé

Objectif: Il y a une tendance accrue à l'utilisation de substance psycho actives chez les jeunes du Nord du Nigeria. Les jeunes utilisent des substances pour améliorer les performances. Des études ont montré des associations entre la consommation de drogues et la morbidité psychiatrique. Cette étude a examiné l'utilisation des substances psycho actives chez les étudiants du premier cycle. Il a également évalué la présence de la morbidité psychiatrique parmi les utilisateurs et non-utilisateurs de drogues psycho actives.

Méthodes: L'étude était une étude transversale utilisant le questionnaire de l'enquête sur l'utilisation des médicaments par les étudiants de l'OMS et le GHQ-12 pour 983 étudiants d'une université du nord de Nigéria.

Résultats: Le taux de prévalence de la consommation de substances psycho actives était de 36, 5%. Le tabac, les stimulants et l'alcool étaient des drogues couramment utilisées. La séparation des parents et la consommation de drogues par les pères étaient des facteurs associés à la consommation de substances psycho actives. La morbidité psychiatrique parmi les toxicomanes et les non-utilisateurs était de 31, 0% et 11,8%.

Conclusion: L'étude a révélé un taux élève d'utilisation de substances psycho actives chez les étudiants avec un taux de morbidité psychiatrique également élève parmi les utilisateurs de substances psycho actives.

Mots-clés: Substance psycho active; morbidité psychiatrique, étudiants de premier cycle

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INTRODUCTION

The use of psychoactive substances among adolescents and young adults which was rare some decades ago has become a major source of public health concerns in northern Nigeria (1). Over the years, younger people are getting more involved in the consumption of alcohol and psychoactive drugs (2,3). Prevalence studies have shown increase trends in cases and variations in types of psychoactive substances use in Nigeria and across the world (4,5). A study done among undergraduate students in Kenya showed high prevalence of psychoactive substance use with increased trend towards use of illicit drugs (6). Likewise, many studies across Nigeria revealed high prevalence rates of drug use among our younger population. Chukwujekwu reported prevalence rate of 65.5% of psychoactive substance use among university students in Rivers State, South-south Nigeria and Ajayi et al reported rate of 31.1% among undergraduate students in North-central Nigeria (7,8).

Adolescents and young adults may be using psychoactive substances for purposes of enhancing their performances, or to overcome nervousness, and sometimes to deepen their relaxation or to remain awake at night so as to be able to study (9,10,11,12). Role modeling, need to treat depression, tiredness as well as to overcome low self-esteem are other reasons which have also been found to be associated with the use of substances among this group of people (11,12). Some young people, however, use these substances purely due to peer pressure (3). However, use of these substances has been documented to lead to decline in academic as well as vocational progression rather than increasing performance (10). Excessive intake of illicit drugs and psychoactive substances is found to be associated with increased psychiatric morbidity and psychosocial problems in different populations (13). Studies have also shown the relationship between use of psychoactive substances and different types of psychiatric disorders such as mood disorders, anxiety disorders, and psychotic disorders as well as cognitive disorders (14,15). Adolescents and young adults are considered high risk group for substance use and substance related disorders because of their adventurous nature; thus they constitute greater proportion of people with drug problems (16).

There is vicious cycle between psychoactive substance use and psychosocial difficulties. Use of psychoactive substances may lead to psychosocial problems while presence of psychosocial problems is associated with increased use of psychoactive substances. Studies have been done on the use of psychoactive substances among adolescents and young adults in different settings such as secondary schools, tertiary institutions, among out of schools youths, motor parks and various other places in Nigeria, and the common finding is that substance use in adolescents and young adults is a public health problem (2,17,18,19,20).

Since adolescents and young adults are very important components of societies such as ours which is a developing country, there is a need to understand factors that are associated with the use of psychoactive substances among this component of the population. However, there is dearth of literature on the use of psychoactive substances among young adults in tertiary institutions, types of psychoactive substances commonly used by this group of people, psychiatric morbidity among youths who engage in the use of substances of addiction as well as factors associated with the use of psychoactive substances and psychiatric morbidity among university undergraduates that use psychoactive drugs in this part of the country, hence, the need for this study.

The study examined the prevalence rate of use of psychoactive substances among undergraduate students of Abubakar Tafawa Balewa University, Bauchi, Nigeria, and factors that were associated with their use. It also determined prevalence rate of psychiatric morbidity among this population. And it finally highlighted factor that was associated with the presence of psychiatric morbidity among users of psychoactive substances. These findings will enhance better understanding of problems of substance use among students in the region and also form bases for implementation of strategies of combating this problem.

MATERIALS AND METHODS

Study area: This survey was carried out among the students of Abubakar Tafawa Balewa University, Bauchi, Nigeria. Abubakar Tafawa Balewa University is a federal tertiary education institution with 6 faculties, over 30 departments and 7 centers with about 10,000 undergraduates.

Study design: This study was a descriptive cross-sectional based survey. All undergraduate students of the institution constituted study population. Sample size was determined using Smart et al recommendation that for studies

involving drug survey, 10% of the study population shall constitute sample size (21). Therefore, roughly 1,000 students were recruited into this study (based on total population of undergraduate students of 10,000). These students were selected using multi-stage sampling technique based on the faculties, departments, and levels. The purpose of the study was explained to the students and those that gave consent were required to fill The WHO student drug use survey and General Health-12 questionnaires. The filled questionnaires were collected immediately from the respondents by research assistants.

The primary inclusion criteria were being undergraduate students of the university and giving informed consent for willingness to participate in the study. Postgraduate students of the institution were excluded from the study. Ethical approval was obtained from Ethics and Research Committee of Abubakar Tafawa Balewa University Teaching Hospital, Bauchi.

Instruments

1. THE WHO STUDENT DRUG USE SURVEY QUESTIONNAIRE: This is a semi-structured self-report questionnaire. The questionnaire has 3 sections. Section A: requests information on socio-demographic variables and other background information on the respondent, section B consists of core items of substance use namely types of substances used by the respondents, frequency and pattern of use. Current use of any psychoactive substance among the respondents was described as use of psychoactive substance in the last 3 months. Section C consists of optional items; such as parental, sibling and best friends usage of some selected substances, perceived availability and perceived harmfulness of these substances by the respondents (22). The instrument has been validated among Nigerian students (23)
2. GENERAL HEALTH QUESTIONNAIRE - 12 (GHQ-12). The 12-item version of GHQ is a self-administered instrument that is used to screen for psychiatric morbidity (24). GHQ-12 has also been validated among Nigerians and it was found to be effective for screening purposes by Gureje and Obikoya (25). A cutoff point of 3 is recommended for determination of presence of psychiatric morbidity.

Data analysis: Data were analysed using EPI-INFO version 6.04d. Frequency table was generated for sociodemographic variables such as age, sex, religion etc. Comparison of the two groups' (substance users and non-users) sociodemographic characteristics were done using chi-square. Chi-square was also used to compare statistical significance between those that had psychiatric morbidity and those that did not have. The level of statistical significance was set at 5% confidence limit for two tailed test.

RESULT

Estimated sample size was 1,000 students; however, additional questionnaires were administered to reduce the problem of attrition. Out of the one thousand and forty-seven (1,047) students of the institutions who were eventually given the questionnaires, nine hundred and eighty-three (983) of them returned properly filled and completed questionnaires. This gave response rate of 93.9%.

The ages of the respondents ranged between 17 and 38 years, with mean age of 23.3 ± 3.4 years. Five hundred and sixty were male constituting 57% of the respondents. The two religions professed by the respondents were Islam (58.7%) and Christianity (41.3%). Only 13% of the respondents were first year students. About 70% of the respondents reported that their parents were living together as at the time of the study. Only 17.5% of respondents' mothers engaged in the use of psychoactive substances, however, more than 56% of respondents' fathers were active users of psychoactive substances.

Three hundred and fifty eight respondents were currently using at least one psychoactive substance. Therefore, the prevalence rate of psychoactive substance use was 36.5%.

Most commonly used substances among the current users were tobacco (22.0%), stimulants (caffeine and kolanut) (17.1%), alcohol (11.5%), and codeine (11.1%). Others were tramadol (5.3%), cannabis (4.5%) and solvents (2.0%), (Table 2). Use of multiple substances was very common among the users of psychoactive substances. Though only 358 respondents were currently using at least one psychoactive substance, 268 out of them were using more than one psychoactive substance. This gave the percentage of respondents engaged in poly-substance use as 74.9%.

Socio-demographic factors that were significantly associated with current use of psychoactive substances were parents not living together and fathers' use of psychoactive substances (parents not living together X^2=5.157, P-Value=0.023; fathers' use of psychoactive substances, X^2=15.82, P-Value<0.001)

Using GHQ-12, 185 (18.8%) of all respondents had psychiatric morbidity. However, 111 (31.0%) respondents among the current users of psychoactive substances met criteria for presence of psychiatric morbidity as against 74 respondents among non-users (11.8%) (X^2=55, P-Value<0.001). Respondents who were current users of psychoactive substances and whose fathers were using psychoactive substances had increased association with presence of psychiatric morbidity (X^2= 18.21, P-Value <0.001)

DISCUSSION

This study found adolescents and young adults constituting the majority of undergraduate students of ATBU, Bauchi. Their mean age was 23.3 years. This was similar to several other studies among tertiary institutions in Nigeria. Duru *et al* had 22.2 years as mean age of their cohorts while it was 24.5 years in a study conducted by Udechukwu and Samuel (9,26). Males were more than females in this study. This is similar to studies where male undergraduates outnumbered the female students (26,27). Higher representation of males in postsecondary institutions might not be unconnected with negative societal attitude towards girl-child education and practice of early marriages for females.

The prevalence rate of psychoactive substance use among the undergraduate students of this Northeastern Nigerian University was found to be 36.5%. In their study among undergraduate student in the city of Benin, South-Southern Nigerian, Adeyemo *et al* reported prevalence rate of 43.9% while Duru *et al* reported a rate of 29.1% as current users of psychoactive substances among undergraduate students in Imo state, Southeastern Nigeria (9,27). Few decades ago, the prevalence rates of use of psychoactive substance were not this high. From North-Central Nigeria, Abiodun *et al* reported prevalence rate of 12% for current drug use among undergraduate students of university of Ilorin in 1992 (17). No data is available on the use of substance among students of the institution where this current study was carried out. However, evidence has revealed an obvious rise and steady increase in the use of psychoactive substances among the youths (4). This rise in the consumption of substance of abuse is said to be as a result of rapid socioeconomic as well as cultural transition in sub-Saharan African (28). Another possible factor may be responsible for this increase is ease of procuring these substances due to their readily availability (29).

Many of the respondents engaged in the use of more than one psychoactive substance. This is not surprising as the use of poly-substances was said to be prominent among adolescents and young adults that use psychoactive substances (30).

Most commonly used substances were tobacco products (cigarette) (22.0%) and stimulants in forms of caffeine and kolanut (17.1%). Students have been found to use these substances in order to stay awake and study (4,11,26). Tobacco smoking and use of stimulant such as caffeine and kolanut are socially acceptable in the community and these substances are not expressly forbidden by most of the respondents' religions. Our finding is different from other studies where alcohol is usually found to be most commonly used substance (31,32). A previous study in Bauchi among substance users showed that alcohol, cigarette, cannabis and sedatives were prominent among the youths in the metropolis (10). However, it is important to note that that particular study was carried out among known drug abusers and only 10% of them had up to postsecondary education. Makanjuola *et al* reported high rate of mild stimulants use (19.4%) among medical students in a north-central region of Nigeria (31).

About 11% of the students use alcohol. The rate is comparable to values gotten from areas with similar socio-economic and religious background. A north-Central Nigeria study among medical students found use of alcohol to be 12.5% (5) as against that of Adeyemo *et al* that found prevalence rate of 29% for alcohol use among undergraduates in Benin City, south-south Nigeria (27). In an Iranian study among university students by Heydrari *et al,* use of tobacco (28.3%) was more than use of alcohol (13.0%). Some researchers are of the opinion that reduced use of alcohol in these societies might be reflection of Islamic prohibition of alcohol beverages (33). The percentage of students using alcohol is low when compared to societies where alcohol is allowed and even use freely in social as well as religious functions, albeit, responsibly (3). For instance, Obot *et al* reported rate of use of alcohol in Jos, Plateaus state, Nigeria to be 38.7%, though their study was conducted among out of school youths (34). While Odejide *et al* reported prevalence of 56% and 51.1% respectively for alcohol use among youths in two Southern Nigerian cities of Ibadan and Abeokuta (20).

The prevalence rate of tramadol use in this study was 5.3%, which is more than proportion of respondents that were using cannabis (4.5%). Tramadol is a prescription drug that is widely used in the Northeastern Nigeria. It is a synthetic opiate analgesic. The reason why lower proportion of undergraduate students used cannabis might be due to the fact cannabis is considered as illicit and illegal substance and they may hence avoid its use so as to avoid problems with law enforcement agency shouldered with the control of illicit drugs. Students use tramadol for various reasons; such as to give them energy, ability to stay awake at night in order to read and also to have better assimilation (35). This may be why there is upsurge in the use of tramadol among youth in northern Nigeria. Ibrahim *et al* in their hospital based cross-sectional study at Federal Neuro-Psychiatric Hospital, Maiduguri reported high rate of use of tramadol among their patients attending addiction clinics (35).

Factors that were found to be associated with use of psychoactive substances among the students were parents not living together and fathers' use of psychoactive substances. Similar to finding in this study, several studies have reported that parental separation and parental depravation were associated with higher chances of using psychoactive substances among adolescents and young adults (3,9,20). This is likely due to inadequate parental control and lack of parent figures at home.

Respondents who reported that their fathers were using psychoactive substances tend to use psychoactive substances more than those whose fathers do not use psychoactive substances. The association could be genetically related or through social learning. Several studies have found that use of psychoactive substances by the fathers is associated with substance use in their offspring (26,31). Omigbodun and Babalola also reported that use of substance by close family members has an association with use of substances by youths from such families (3).

Gender was not found to be a significantly associated variable with the use of psychoactive substances among undergraduate students in this study. This was similar to the finding by Adegboyega *et al* among undergraduate students in Benin City (11). It should be known that when given similar opportunities and exposures, there is not much difference in the pattern of use of psychoactive substances by the two genders (36). However, findings from other studies revealed that males used psychoactive substances than their female counterparts (4,9,27,30). The difference in our study and these others that found male to be more represented among psychoactive drug users might be due to types of substances prevalent in different studied localities. One expects males to be involved more in the use of drugs where the predominant substances of abuse are illicit drugs such as cannabis, heroin and cocaine, in contrast to where socially acceptable drugs such as mild stimulants and tobacco products are in vogue.

Religion of the respondents was not found to be a significant associated factor in this study. Few studies have found religion or being religious to be a protective factor against use of these psychoactive drugs (5).

Psychiatric morbidity among the undergraduate students was found to be 18.5%. This is in line with the range of 18 – 28% found in the general population by Amoran *et al* (37). However, the prevalence of psychiatric morbidity among the psychoactive users was found to be 31.0%. This is statistically significant. The implication of this is that use of psychoactive substances is associated with poorer mental health among undergraduate students. Other studies that found strong association between psychoactive substances and psychiatric morbidity include Boys and Fergusson (38,39). Boys found that there is strong association with the use of alcohol and psychiatric morbidity and Fergusson found similar association with the use of cannabis among adolescents and young adults and psychiatric morbidity.

Fathers' use of psychoactive substance was found to be associated with the presence of psychiatric morbidity among undergraduates who are also using psychoactive substances themselves. This association could be from the common pathway of genetic predisposition to the use of psychoactive substances and having mental illness.

CONCLUSION

Prevalence rate of psychoactive substance use was high among undergraduate students of Abubakar Tafawa Balewa University, Bauchi. Tobacco products (cigarette) and stimulants (coffee and kolanut) were most commonly used substances, which were followed by alcohol and prescription opiates (Codeine syrup and Tramadol). Parental separation and fathers' use of psychoactive substances were factors that were associated with the use of psychoactive substances among the students. Prevalence rate of psychiatric morbidity

among the drug users was significantly higher than the non-users. Fathers' use of psychoactive substances was also found to be an associated factor.

Psycho-education and counseling highlighting dangers of use of psychoactive substances should be part of fresher's courses during the orientation week in the universities. Emphasis should be placed on the relationship between the use psychoactive substances and mental health problems during such orientation programs.

Study limitation: The limitation of this study was the fact that it was a questionnaire based survey. Disclosure of substance use habits is found to be low with this method.

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Table 1 Socio-demographic variables of the respondents (*n = 983*)

Variables	Frequency (%)
Age	
15-20	249 (25.3)
21-25	515 (52.4)
26-30	194 (19.7)
>30	25 (2.6)
Sex	
Female	423 (43.0)
Male	560 (57.0)
Religion	
Christianity	406 (41.3)
Islam	577 (58.7)
Level	
100	128 (13.0)
200	326 (33.2)
300	253 (25.7)
400	276 (28.1)
Parents living condition	
Together	691 (70.3)
Separately	292 (29.7)
Mother' substance use	
No	811 (82.5)
Yes	172 (17.5)
Father' substance use	
No	426 (43.3)
Yes	557 (56.7)

Table 2: Types and Proportion of psychoactive substances use by the respondents

Substance	Users N (%)	
	Yes	No
Tobacco	216 (22.0)	767 (78.0)
Caffeine and Kolanut	168 (17.1)	815 (82.9)
Alcohol	113 (11.5)	870 (88.5)
Codeine	109 (11.1)	874 (88.9)
Tramadol	52 (5.3)	931 (94.7)
Cannabis	44 (4.5)	939 (95.5)
Solvent	20 (2.0)	963 (98.0)
Heroine	10 (1.0)	973 (99.0)
Cocaine	0 (0.0)	983 (100.0)

Table 3 Factors associated with use of psychoactive substance among respondents

Variables	Current use		X^2	p-value
	No	Yes		
Age				
15-20	164 (26.2)	85 (23.8)		
21-25	343 (54.9)	172 (48.0)		
26-30	97 (15.5)	97 (27.1)		
>30	21 (3.4)	4 (1.1)	20.90	0.0001
Sex				
Female	274 (43.8)	149 (41.6)		
Male	351 (56.2)	209 (58.4)	0.421	0.5163
Religion				
Christianity	263 (42.1)	143 (39.9)		
Islam	362 (57.9)	215 (60.1)	0.428	0.5129
Level				
100	80 (12.7)	48 (13.4)		
200	211 (33.8)	115 (32.1)		
300	169 (27.1)	84 (23.5)		
400	165 (26.4)	111 (31.0)	3.099	0.3766
Parents living condition				
Together	455 (72.8)	236 (65.9)		
Separately	170 (27.2)	122 (34.1)	5.157	0.0232
Mother's substance use				
No	514 (82.2)	294 (82.1)		
Yes	111 (17.8)	64 (17.9)	0.082	0.7746
Father's substance use				
No	382 (61.1)	172 (48.0)		
Yes	243 (38.9)	186 (52.0)	15.82	<0.0001

Table 4: Socio-demographic factors associated with presence of psychiatric morbidity among psychoactive substances users

Variables	Current use GHQ<3	GHQ>3	X^2	p-value
Age				
15-20	57 (23.2)	28 (25.2)		
21-25	115 (46.7)	56 (50.5)		
26-30	74 (30.1)	23 (20.7)		
>30	0 (0.0)	4 (3.6)	2.535	0.2815
Sex				
Female	95 (38.6)	53 (47.7)		
Male	151 (61.4)	58 (52.3)	2.627	0.1050
Religion				
Christianity	120 (48.8)	45 (40.5)		
Islam	126 (51.2)	66 (59.5)	1.771	0.1832
Level				
100	39 (15.8)	9 (8.1)		
200	73 (29.7)	38 (34.2)		
300	56 (22.8)	31 (27.9)		
400	78 (31.7)	33 (29.7)	3.953	0.2660
Parents living condition				
Together	161 (65.4)	65 (58.6)		
Separately	85 (34.6)	46 (41.4)	1.280	0.2570
Mother's substance use				
No	174 (70.7)	74 (66.7)		
Yes	72 (29.3)	37 (33.3)	0.420	0.5169
Father's substance use				
No	148 (60.2)	39 (35.1)		
Yes	98 (39.8)	72 (64.9)	18.210	<0.0001