

Situation of use and factors associated with psychoactive substances use among undergraduates of the College of Medicine University of Lagos, Nigeria.

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Abstract

Objective: The objectives of the study were to determine the patterns of use of psychoactive substances, identify the psychoactive substances commonly used, and identify the factors associated with the use of psychoactive substances among undergraduate students

Method: A cross-sectional study was conducted using a self-developed and self-structured questionnaire to elicit information from 355 undergraduate students from the College of Medicine University of Lagos through a multistage sampling technique. Descriptive and inferential statistics were used to analyze the data, and a statistically significant p-value was set at <0.05.

Results: A proportion above half, 160 (53%) of the respondents are male, with the mean age of participants being 21.50 ± 2.02 years. Less than one-tenth 26 (8.6%) of the undergraduates always use psychoactive substances during examination preparation, while the majority, 255 (84.4%), reported low level of psychoactive substance use. The most used psychoactive substance is caffeine, as seen in coffee and energy drinks. The quest to improve mental alertness 285 (94.4%) is the leading factor influencing the use of psychoactive substances. Age ($p < 0.000$) and academic performance ($p < 0.000$) were significantly associated with the level of use of psychoactive substances.

Conclusion: The use of psychoactive substances to improve mental alertness must be discouraged among undergraduate students. Emphasis must be placed on the harmful effects] the use of psychoactive substances can cause now and even in the future.

Situation de consommation et facteurs associés à la consommation de substances psychoactives chez les étudiants de premier cycle de la Faculté de Médecine de l'Université de Lagos, Nigéria

Résumé

Objectif de l'étude: Les objectifs de l'étude étaient de déterminer les modes de consommation de substances psychoactives, d'identifier les substances psychoactives couramment utilisées et d'identifier les facteurs associés à la consommation de substances psychoactives chez les étudiants de premier cycle.

Méthode de l'étude: Une étude transversale a été menée à l'aide d'un questionnaire auto-développé et auto-structuré pour obtenir des informations auprès de 355 étudiants de premier cycle de la Faculté de médecine de l'Université de Lagos grâce à une technique d'échantillonnage à plusieurs étapes. Des statistiques descriptives et inférentielles ont été utilisées pour analyser les données et une valeur p statistiquement significative a été fixée à <0,05.

Résultat de l'étude : Une proportion supérieure à la moitié, 160 (53 %) des répondants sont des hommes, l'âge moyen des participants étant de $21,50 \pm 2,02$ ans. Moins d'un dixième 26 (8,6 %) des étudiants de premier cycle consomment toujours des substances psychoactives pendant la préparation aux examens, tandis que la majorité, 255 (84,4 %), ont déclaré un faible niveau de consommation de substances psychoactives. La substance psychoactive la plus utilisée est la caféine, présente dans le café et les boissons énergisantes. La recherche de l'amélioration de la vigilance mentale 285 (94,4 %) est le principal facteur influençant la consommation de substances psychoactives. L'âge ($p < 0,000$) et les résultats scolaires ($p < 0,000$) étaient significativement associés au niveau de consommation de substances psychoactives.

Conclusion : L'usage de substances psychoactives pour améliorer la vigilance mentale doit être découragée chez les étudiants de premier cycle. L'accent doit être mis sur les effets nocifs que l'usage de substances psychoactives peut provoquer aujourd'hui et même à l'avenir.

Mots-clés : Habitudes, substance psychoactive, étudiants de premier cycle, consommation de

INTRODUCTION

A psychoactive substance is any chemical substance that changes the performance of the central nervous system and influences how one behaves, how things are perceived, and how one feels. Continuous use can lead to abuse, addiction, and dependence (1,2). Some psychoactive substances can be prescribed for therapeutic use, while others can be used for recreation. Either way, excessive and persistent self-administration of such substances without consideration of the medically or culturally accepted process becomes a problem. Some of the challenges encountered with the use of psychoactive substances include but are not limited to physical, behavioural, psychological, and psychosocial problems, increased psychiatric morbidity and a negative impact in terms of academic performance (3,4). Before it reaches the stage of psychoactive substance abuse, epidemiological assessment and monitoring for psychoactive substance use is essential to be able to curb the increasing threats to the stability of undergraduates in various learning (5).

Undergraduates account for the group mainly at risk for psychoactive substance use, even with the same age group outside the learning institutions (3,6,7). Undergraduates have been known to consume psychoactive substances to enhance their mental alertness, memory, concentration, and reasoning for academic performance. Unfortunately, psychoactive substance use had been negatively associated with undergraduates' academic performance in studies carried out at the University of Lagos (2,6). Undergraduates from health-related departments require a higher level of cognitive function development. Thus, there is a greater likelihood of the increased use of psychoactive substances for more cognitive enhancement and academic performance (1). University students studying health-related courses are more vulnerable than their counterparts because of their substantial academic responsibilities, freedom from parental control that amounts to social freedom, and their concurrent developmental challenges.

About 30 million of the world's population globally use psychoactive substances, and a significant proportion has developed harmful patterns and eventual dependence (8,9). Literature review showed that though psychoactive substance use varies with the types and regions, it is evident that there is an increase in the consumption of psychoactive substances

among undergraduates (10–12). The prevalence of the use of psychoactive substances showed increased consumption and variations in types commonly used in Nigeria and globally (4,13).

The lifetime prevalence of psychoactive substance use among university undergraduates in Ethiopia moved from 53.6% in 2014 to 66.5% in 2020 (14,15). The prevalence of substance use among undergraduate students in a medical college in Nepal was high (61.4%) compared to other studies in the region (16). In Nigeria, the rate of psychoactive substance use among undergraduates was reported to be 46.6% - 65% once in their lifetime, with 15.4% reporting current use (17). In a study carried out at the University of Lagos where students from the College of Medicine were excluded from the study, the overall lifetime, 12-month (year) and current use prevalence were 71.58%, 54.26% and 41.34% respectively, with alcohol being the mostly abused substance (7). Also, in another study conducted by Adesida and colleagues among the University of Lagos students without the College of Medicine undergraduates, it was reported that the lifetime prevalence was 28% (18). In the study carried out in the south-south geopolitical zone of the country, the overall current use of psychoactive substances is 28.2%, with alcohol being the most consumed substance (8). Though low use was reported for other psychoactive substances such as cannabis, organic solvents, hallucinogens, cocaine, and narcotic analgesics, awareness and educational interventions should also encompass these substances.

Several factors have been identified to influence the use of psychoactive substances among undergraduates. These include curiosity, experimentation, being away from home and not being supervised by parents, peer influence, ease of access to drugs, and the quest for mental alertness and energy to read for long hours, especially when examinations are fast approaching (4,5).

Several studies have been carried out on psychoactive substance use among undergraduate students. However, very few studies have attempted to identify the situation of use and explore the association between age, academic performance, and the level of psychoactive substance use. Also, the quest for a healthy transition into adulthood requires a thorough understanding of the factors that influence the use of psychoactive substances among adolescents in tertiary institutions to develop interventions that will bridge the gap of

inadequacies. In addition, the high workload, the extensive academic curriculum combined with compulsory clinical postings and the frequency of both university and professional examinations established that health-related courses are stressful and demanding. This study sought to identify the situation of use, determine the level of use, identify the commonly used psychoactive substances, and factors associated with the use of psychoactive substances among undergraduates in the College of Medicine of the University of Lagos. This will highlight the relevant focus areas that will help develop evidence-based interventions on psychoactive substance use among undergraduates at the University of Lagos, Nigeria.

METHODS

The study used a descriptive, cross-sectional study design to elicit quantitative data from undergraduates at the University of Lagos. The University of Lagos is a federal government-owned institution in the Lagos Metropolis, southwest of Nigeria. The university has three campus sites, two at Yaba and its College of Medicine at Idi-araba. The study population was all undergraduates (2,227) in the College of Medicine of the University of Lagos, Nigeria. The College of Medicine of the University of Lagos was purposefully selected because health-related courses had been documented to be more demanding and stressful compared with other courses in the university. The sample size was determined using the (19) sample size calculation formula for cross-sectional studies with the expected proportion taken from a previous study conducted in Ekiti State in the country's southwest region (5). A sample size of 323 was calculated, and 10% attrition was added to give a total sample size of 355.

A multi-stage sampling technique was used for selecting undergraduates. A simple random method (balloting) was used to select three of the four faculties in the College of Medicine. These faculties were the Clinical Sciences, Dental Sciences and Pharmacy. The Clinical Sciences comprises four departments, while the other randomly selected faculties had one department each. Two departments were randomly selected from the faculty of Clinical Sciences, namely departments of Nursing Science and Medicine and Surgery while the two departments from the other faculties were co-opted into the study automatically. In the second stage, a proportional stratified random sampling was used to determine the sample size for each

department. Each department was made a stratum, and the number of respondents was proportional to the number of students in each department. Four departments namely Dentistry, Medicine and Surgery, Nursing and Pharmacy participated in the study with the sample size of 49, 154, 32, and 120, respectively. Lastly, a simple random sampling technique was used to select respondents from each department from the 200 – 600 levels, depending on the course of the study. Undergraduates in each department who consented to participate in the study were given numbers, and by using the random number tables, respondents were selected.

A self-administered pretested questionnaire was used for this study. The questionnaire was self-developed from a review of relevant literature to adhere to the study's objectives. The questionnaire has four sections, A, B, C, and D, containing information about the respondents' socio-demographic data, situation of substance use, commonly used psychoactive substances and factors associated with the use of psychoactive substances among undergraduates respectively. The situation of use comprises seven (7) items scored on a Likert scale of never (0), rarely (1), sometimes (2) and always (3) with the highest obtainable score of 21. Scores were converted to percentages to be able to determine the level of psychoactive use. Scores below 49% were categorized as low use while scores above 50% were categorized as high use. Nine psychoactive substances were listed to determine the commonly used substances among respondents with a response of 'yes' or 'no.' The commonly used psychoactive substances were scored by ranking the 'yes' response as 1 and the 'no' response as 0. These substances include cannabis, sedatives, caffeine, methamphetamine, ecstasy, Tramadol alcohol, Solvents/inhalants and Lysergic acid diethylamide (LSD). Factors influencing the use of psychoactive substances were assessed through 13 items with a response of 'yes' and 'no'.

The instrument was pre-tested using undergraduates from the College of Medicine of another government-owned university outside the sampled location. The instrument was given twice to the same number of respondents within two-week intervals, and Pearson's correlation coefficient was used for the test-retest reliability of the instrument. Pearson's correlation coefficient value was calculated to be 0.81. Face validity was used to know the extent to which the questionnaire appear relevant and appropriate. Data collected were analyzed using descriptive

and inferential statistics using SPSS version 20. The ethical approval was given by the Lagos University Teaching Hospital (LUTH) Health and Research Ethics Committee with an ethical approval number (ADM/DCST/HREC/APP/2573). Informed consent was also taken from the undergraduates before administering the questionnaires.

RESULTS

Out of the 355 questionnaires distributed, twenty-eight were not returned, while twenty-five were discarded due to inconsistent responses, giving a response rate of 85.1%. Table 1 shows the socio-demographic distribution of respondents. There were 302 respondents, 142 females (47%) and 160 (53%) males. Most of the respondents, 281 (93%), were aged 20 to 25 years (<20=45.7% and 20-25 = 47.4%), with about half, 154 (51%), in the medicine and surgery department. The mean age of participants was 21.50 ± 2.02 years. A greater proportion of the undergraduates, 77 (25.5%), were in the 200 level, mostly living in the school hostel 247 (81.8%) and the majority with good academic performance, 284 (94%).

Table 2 shows the situation of psychoactive substance use among undergraduates. Results from this finding show that constantly, 26(8.6%) of respondents always take psychoactive substances during examination preparations, 19 (6.3%) consume substances at parties, and 12 (4%) take these substances when they are with their friends. The majority of respondents, 248 (82.1%), never used psychoactive substances before doing sport, while at home, 231(76.5%) or in the school hostel, 213 (70.5%) of respondents never consumed psychoactive substances. A summary of the level of psychoactive substance use revealed that a greater proportion (84.4%) of undergraduates had low use of psychoactive substance while 15.6% had high use, as seen in Figure 1.

The frequency of the commonly used psychoactive substances can be seen in Table 3. Caffeine was the most used psychoactive substance, 202 (66.9%), followed by alcohol 161 (53.3%), then sedatives 78 (25.8%) and tramadol 53 (17.5%). The least used psychoactive substances include solvents/inhalants, Lysergic acid diethylamide (LSD) and methamphetamine with 2(0.7%), 2(0.7%) and 3(3.0%), respectively. The quest to improve mental alertness (94.4%) was the highest reported factor influencing the use of psychoactive substances. This is followed

by curiosity, peer pressure and academic pressure, with 94%, 91.4%, and 90.4%, respectively. Other factors influencing the use of psychoactive substances are represented in Figure 2.

The findings from this study showed that age ($p<0.00$) and academic performance ($p<0.000$) are significantly associated with the patterns of psychoactive substance use among undergraduates (Table 4).

DISCUSSION

This study assessed the situation of use, level of use, common use and the factors associated with the use of psychoactive substances among undergraduates in the College of Medicine, University of Lagos. Late adolescence and early adulthood exhibited more psychological vulnerabilities because of the critical changes in the brain, academic pursuit and other stress associated with the transition into adulthood (20). Starting a course of study at the university is often associated with high stress levels and, if not properly managed, can result in falling on the use of psychoactive substances to cope (9). Also, independence and isolation from parental guidance, making decisions about self, sharing living spaces with people they do not know and trying to fit into the social spaces on campuses make undergraduates more vulnerable to the use of psychoactive drugs (14,21). Most participants in this study were within the age range of 20 to 25 years, and the consequences of using psychoactive substances cannot be neglected. The response rate for this study was 85.1%, close to the response rate from another study carried out at the University of Lagos but in other faculties offering non-health-related courses (22). Most undergraduates who participated in the study reported academic performance above average (94%), contrary to study conducted among undergraduates of a University in Bangladesh that indicated more than one-third had poor academic performance (21). Good academic performance among these groups of students might be attributed to the high academic selection standards for them to gain admission to study medical-related courses. Another author highlighted that the use of psychoactive substances among undergraduates in the College of Medicine might not be meant purposively to improve concentration and mental alertness but also to deal with stress or as part of daily lifestyles (23).

The majority of undergraduates reported low use of psychoactive substances from this

study. This finding is similar to the result from the same tertiary institution from undergraduates from the main campus in Akoka (22). One of the reasons for the low use of psychoactive substances could be no tolerance for the consumption of psychoactive substances by the school management coupled with the routine testing for narcotics during the admission process. From another perspective, the fact that the undergraduates recruited for the study are offering courses that might have exposed them to the adverse effects of consuming psychoactive substances. Despite all the stringent measures by the school management, a small number of undergraduates still reported that they use psychoactive substances. This proportion of students always use psychoactive substances during preparation for examinations, at parties and with friends.

This is in accordance with the result of a study carried out among students of tertiary institutions in Ekiti state, another southwest state in Nigeria (5). However, this is contrary to the findings from the study carried out by (8) among undergraduates in the southeast region of the country and the findings from another study conducted in the northeastern part of the country (4).

Nonetheless, effort must be made to create more awareness about the side effects of these psychoactive substances on their physical health and academic achievement. Examination preparation should be kept from when examinations are close to prevent the addition of stress for undergraduates (24). In addition, routine narcotic screening can also be made per session to deter students who had scaled through the screening during the admission process from engaging in psychoactive substance use at any point during their studies at the university.

This study's most used psychoactive substance is caffeine, as seen in coffee and energy drinks, followed by alcohol, sleeping pills and tramadol. Energy drinks are made up of stimulants called caffeine, claiming the substance alerts the mental status and increases energy (24). The result corroborates with a study carried out among undergraduates of the faculty of medicine in a Mexican university (23). A literature search revealed variations in the outcome of commonly used psychoactive substances among undergraduates, including caffeine, alcohol, sleeping pills, and tramadol, in no constant order. In a systematic review, alcohol is the most consumed psychoactive substance by undergraduate students, followed by tobacco (9).

Also, another meta-analysis carried out in sub-Saharan Africa revealed that tobacco and alcohol were the mostly used psychoactive substances among undergraduates (25). In other cross-sectional studies carried out among undergraduates in successions in two medical colleges in Nepal, it was reported that alcohol is the psychoactive substance mostly used (16,26). In another study carried out among undergraduates in the College of Biological Sciences and Health Sciences in Brazil, alcohol was the mostly used psychoactive substance (27). However, interventions to curb the menace of psychoactive substance use must cover other substances though the prevalence of use might not be obscure

Generally, the most reported factors influencing the use of psychoactive substances include improving alertness and curiosity for fun and because of peer pressure. To relieve academic pressure and psychological stress, poor academic performance places undergraduates at risk of consuming psychoactive substances (21). Undergraduates studying health-related courses are at an increased risk for academic pressure due to the high stress level they experience in their courses of study and the expectations of parents and society. This can lead undergraduates to consume more caffeine to stay awake for a long time and study more (28). This can also be responsible for caffeine being this current study's most consumed psychoactive substance. According to the results from a cross-sectional study carried out among medical students in Nepal, psychoactive substances were used mainly for fun, pleasure, and experimentation (29). In this current survey, curiosity was reported as the second-highest factor influencing the use of psychoactive substances. Recognition and feelings of acceptance by peers are reported to be part of the factors influencing the use of psychoactive substances among undergraduates. Likewise, curiosity and desire to experiment and have fun make undergraduates consume psychoactive substances without considering the health risks involved (3,30). According to (8), in a study carried out in the Imo State in the southeast region of the country, it was reported that the influence of peer pressure on the use of psychoactive substances could not be undermined. As reported, peer pressure and being surrounded by friends who consume psychoactive substances are significant factors influencing adolescent psychoactive substance use (3,14).

CONCLUSION

Undergraduates who participated in the study reported low use of psychoactive substances. Among the proportion that always use psychoactive substances, it was reported to be used more during preparation for examinations, at parties, and with friends. The common psychoactive substance used was caffeine, followed by alcohol. Lastly, a significant association was established among level of use, age and academic performance.

LIMITATIONS

This study's limitations included using a self-developed questionnaire based on a literature search by the researchers. A test-retest reliability was used to assess the consistency of the instrument. At the same time, face validity is a subjective judgement based on the opinion of the experts who reviewed the instrument. Though there was no consideration for gender balance, a proportionate sample size allocation was ensured to give all participants an equal chance to be recruited and minimize bias/errors. The findings from this study cannot be generalized to the entire undergraduate population because of the higher academic demand for health-related courses compared with non-health-related courses.

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Table 1: Socio-demographic characteristics of undergraduates

Variables	Frequency (n=302)	Percentage (%)
Age		
=20	138	45.7
21-25	143	47.3
26-30	21	7.0
Mean ± SD	(21.50 ± 2.02)	
Sex		
Female	142	47.0
Male	160	53.0
Department		
Dentistry	41	13.6
Medicine and Surgery	154	51.0
Nursing	28	9.3
Pharmacy	79	26.1
Level		
200	77	25.4
300	64	21.2
400	57	18.9
500	54	17.9
600	50	16.6
Academic performance (CPGA of current semester)		
Excellent (4.50 -5.00)	84	26.8
Good (3.50 – 4.49)	200	66.2
Fair (3.00 – 3.49)	18	6.0
Residence		
Rented apartment and alone	40	13.2
School hostel	247	81.8
With parents or relatives	15	5.0

Table 2: Situation of substance use among undergraduates

Occasion	Never n (%)	Rarely n (%)	Sometimes n (%)	Always n (%)
During exam preparation	131 (43.4)	43 (14.2)	102 (33.8)	26 (8.6)
Before sports	248 (82.1)	36 (11.9)	17 (5.6)	1 (0.3)
At parties	159 (52.6)	40 (13.2)	84 (27.8)	19 (6.3)
At home	231 (70.5)	45 (14.9)	22 (7.3)	4 (1.3)
In the hostel	231 (70.5)	46 (15.2)	40 (13.2)	3 (1.0)
With friends	187 (61.9)	42 (13.9)	61 (20.2)	12 (4.0)
To relax and unwind	202 (66.9)	33 (10.9)	59 (19.5)	8 (2.6)

Table 3: Commonly used psychoactive substances

Substances	Yes	No
Cannabis (marijuana, weed)	48 (15.9)	254 (84.1)
Sedatives (sleeping pills, depressants, and tranquilizers)	78 (25.8)	224 (74.2)
Caffeine (coffee and energy drinks)	202 (66.9)	100 (33.1)
Methamphetamine	9 (3.0)	293 (97.0)
Ecstasy	41 (13.6)	261 (86.4)
Tramadol	53 (17.5)	249 (82.5)
Alcohol (spirits, beer, wine)	161 (53.3)	141 (46.7)
Solvents or inhalants (glue, shoe polish, soak away fumes)	2(0.7)	300 (99.3)
Lysergic acid diethylamide (LSD)	2 (0.7)	300 (99.3)

Table 4: Association between age academic performance and level of psychoactive substance use

Socio-demographic characteristics		High Use	Low Use	Total	χ^2	df	p-value
Age	<20	25	113	138	38.034	2	<0.00
	21-25	35	108	143			
	26-30	17	4	21			
Academic performance	Excellent	37	57	94	32.007	2	<0.00
	Good	29	161	190			
	Fair	11	7	18			

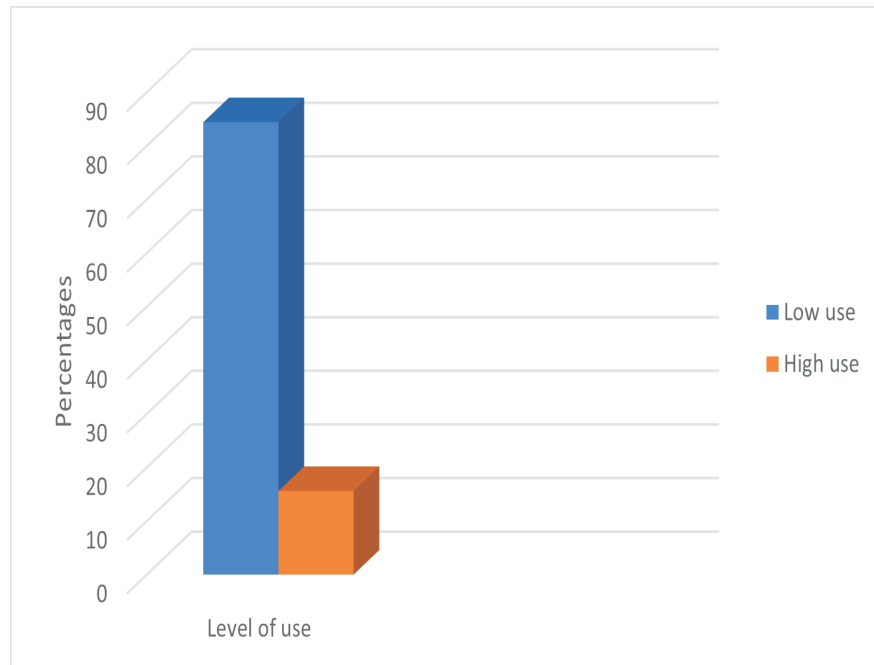


Figure 1: Level of psychoactive substance use among undergraduates

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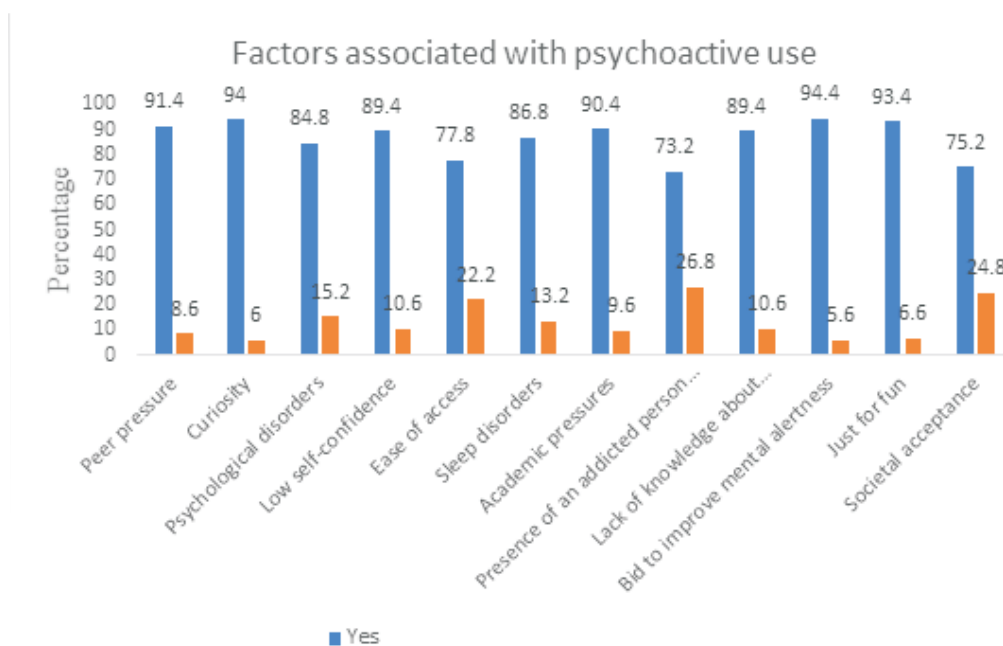


Figure 2: Factors associated with the use of psychoactive substances