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ORIGINAL ARTICLE

Substance Use among Undergraduate Students at the University of Lagos

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Keywords

Substance Use, Peer Pressure, Energy drinks, Alcohol, Drugs, Undergraduate Students

ABSTRACT

Background: The increasing prevalence of substance use among young people is a major concern globally and specifically in Nigeria, with significant impacts on individuals, society, and public health. This study assessed the pattern, prevalence and factors associated with substance use among the undergraduate students at the University of Lagos.

Methods: A descriptive cross-sectional study was conducted utilizing a multistage sampling method to select 404 students from the registered full-time undergraduate students. Data was obtained using self-administered questionnaires adapted from the WHO model core questionnaire format. Descriptive, bivariate and multivariate analyses were done using IBM SPSS version 23. The level of significance was set at 5% and the confidence interval at 95%.

Results: Most respondents (48%) were between 17-20 years, with a mean age of 20.9+2.44 years, 54.5% were male and 45.5% were in 300 level. Seventy-one percent had good knowledge, 65.4% had positive attitudes towards not using substances, while the prevalence of substance use was 36.7%: 23.3%, 10.7% and 2.7% for tobacco, drugs and alcohol respectively. Energy drinks (with its significant caffeine content) were the most commonly consumed drug-containing substance (62.8%). Peer pressure was the leading reason for substance use (65.1%). Age, gender, level of education and tobacco use were predictors of drug use.

Conclusion: Knowledge and a positive attitude towards not using substances did not significantly influence practice. Smokers were more likely to use drugs. Health education is required to correct the perceived health benefits of energy drinks while peer influence can be harnessed to curb the menace.

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INTRODUCTION

Substance use refers to the use of selected substances, which include alcohol, tobacco products, drugs, inhalants, and other substances that can be consumed, inhaled, injected, or otherwise absorbed into the body with possible dependence and other detrimental effects.[1,2] Substance Use Disorder (SUD) is the uncontrolled use of a substance despite harmful

consequences, leading to changes in human brain function, and which may result in a state of intoxication.[3]

The increasing prevalence of substance use among young people is a major concern globally and specifically in Nigeria. It has significant impacts on individuals, society, and public health, and contributes to the economic instability in Nigeria.[4] In 2018, the first large-scale, nationwide survey to examine the extent and patterns of drug use in Nigeria by the United Nations Office on Drugs and Crime (UNODC) estimated the prevalence of drug use at 14.4% (14.3 million) among people between 15-64 years, which is higher than the 2016 global annual prevalence of any drug use of 5.6% among the adult population. Moreover, it reported the highest prevalence of drug use in the South-West region, especially Lagos and Oyo states, at 22.4% (4,382,000 million users); more common among males than females; and the age group 25 – 39 years. [5] In the UNODC 2023 World Drug Report, 5.3% of 15–16-year-olds worldwide (13.5 million individuals) had used cannabis in the past year. The use of cannabis among 15–16-year-olds varies by region, from less than 3 per cent in Asia to over 17 per cent in Oceania, but in most regions the proportion of adolescents using the drug is higher than in the general population aged 15–64.[6] However, in Africa, the prevalence in the two age groups were similar because the population is young. Young people are more vulnerable to drug use because the adolescent brain is still developing. Early initiation of drug use can lead to dependence faster than in adults, and to other problems later in life.[6]

The prevalence of substance use among university students in developing countries has been increasing over the years, and is of great concern. This has been justified by peer pressure, academic pressure, low grade point average, low academic performance, high social class, poor mental health, poor relationship with parents, and family disputes among others.[7,8,9] The university years are a stressful transition for students with liberty and no parent or guardian supervision, accompanied by intense academic pressure, decision-making, living with unknown people, exposure to trending youth culture, forming new social groups and other life responsibilities. These factors influence the students to engage in smoking, alcohol and drug use.[8] University undergraduate students who are involved in the abuse of substances as compared to those who are not have been reported to have delays in completing their studies, get into trouble with university administration, and some are dismissed from school.[10] A recent study in Nigeria stated the prevalence among students across four universities in the Southwest region to be 45.7%, with the most abused substances being alcohol (61.5%) and cigarettes (54.5%), followed by tramadol (35.0%), cough syrup (33.0%), shisha (30.5%) and cannabis (25.5%).[11] The prevalence reported in other regions is equally high. Aguocha et al. reported a prevalence of 84.5% at Imo State University, a study across three universities in Katsina State

yielded a prevalence of 37%, Onofa et al. reported 62.9% in a study across three tertiary institutions in Abeokuta Ogun State, 27.5% by Johnson et al. in the University of Uyo, 46.6% by Adeyemo et al. in Benin City. In comparison, it was 71.9% in Ado Ekiti, and 78.4% across four tertiary institutions in Owerri, South East Nigeria.[12-18] Oshikoya and Alli found a prevalence of 33.0% in a Lagos study, with three-quarters as multiple drug users.[19] Idowu et al reported a rate of 60.5% in a Lagos state university, most picked up the habit from the university, and there was a statistically significant association between the university environment and substance use.[20] This may be attributed to its proximity to drug peddling havens, which is unfortunate for an academic environment.

The consequences of illicit drug use have significant implications for public health, as they can lead to a range of issues including social, health, and economic problems. The WHO reported that in 2017, more than 42 million years of healthy life loss (DALY) were due to drug use which gave an estimate of 1.3% of the global burden of disease.[21] The quick proliferation of psychoactive drug usage among students can result in harmful outcomes, including physical and mental illnesses, suicide, reckless driving, vandalism, aggressive behaviours, emotional instability, a weakened sense of identity, and risky sexual behavors.[7] Psychological stress has been found to play a huge role in influencing the use of substances.[22]

Lagos State is the smallest, yet most populous state in Nigeria, and is an epicenter for crime and activities of social miscreants (area boys) who are mostly youth; these are intricately involved in the demand and supply side of the substance use problem.[23,24] The undergraduate students of the University of Lagos, were chosen as the study population due to their risk of exposure, and the possible influence on them from proximity to criminals and miscreants who are peddlers and the high prevalence of substance abuse in the state.

Though other studies had previously explored substance use among youths in Lagos State, with the changing dynamics of information propelled by social media; and enhanced dynamics of access resulting from electronic payment platforms and widespread merchant delivery systems, this study sought to assess the current pattern, prevalence and factors associated with substance use among the undergraduate students at the University of Lagos. Findings from this study are valuable for school authorities, public health practitioners, and other stakeholders in designing appropriate interventions and strategies for preventing and managing individual students and student groups, to reduce the impact of substance use on academic performance and psychosocial wellbeing.

METHODS

A descriptive cross-sectional study was conducted among registered full-time undergraduate students of the University of Lagos. A minimum sample size of 404 was

calculated using Cochran's formula for single population proportion $n= Z^2pq/d^2$ using a prevalence of 36.1% of drug abuse practices from a previous study.[25] A multistage sampling technique was used to select the sample. In stage 1, simple random sampling by balloting was used to select four of the 12 faculties at the University of Lagos: Arts, Social Science, Education and Science. Stage 2 involved selecting two departments from each of the four faculties to obtain eight departments by simple random sampling (balloting). In stage 3, two levels were selected from each of the eight departments by simple random sampling (balloting); in levels where there were more than one class, simple random sampling by balloting was used to choose one class in stage 4. The specific sampling frame was determined based on the number of respondents in each class, and systematic random sampling was used to select the students from each class, ranging from 1 in 2 to 1 in 4 in stage 5.

Data was obtained from the students using a semi-structured, pretested, and self-administered questionnaire adapted from the WHO model core questionnaire format which had been validated by Adelekan and Odejide in Nigeria with some minor modifications to make it simpler for local use.[26,27] The questionnaire had four sections namely: socio-demographic data, knowledge of substance use, attitude towards substance use, prevalence of substance use. Four undergraduate students of the University of Lagos were recruited and trained successfully on the study design, instrument and data collection method, in order to assist the researchers. The questionnaire was pretested among 40 students in the Lagos State University main campus, which is similar to the study population.

Data was analysed using the IBM SPSS version 27 by IBM Corporation, Armonk, New York, United States. Descriptive analysis, such as frequencies, charts, and percentages were used to analyse socio-demographic data and patterns of substance use. Inferential statistics (chi-square) was used to test for any significant relationship between variables. Multivariate logistic regression analysis was carried out to determine the predictors of substance use. The level of significance was set at 5% and the confidence interval at 95%.

Knowledge of substance use was scored and graded on a 21-point scale. Correct responses were scored 1 point, while a wrong or blank response, or 'I don't know' was scored 0 point, giving a minimum and maximum score of 0 and 21 points, respectively. Scores of 13 and above were categorized as having good knowledge, while scores below 13 were categorized as having poor knowledge. For knowledge of the complications of substance use, those who scored above the mean of 5 out of the total score of 10 had good knowledge while those who scored below the mean had poor knowledge. Similarly, in assessing knowledge about the consequences of substance use, those who scored above the mean of 6 had good knowledge, while those who scored below the mean had poor knowledge.

Table 1: Knowledge of substance use (n=404)

Knowledge	Frequency	Percent (%)
Awareness of substance abuse	398	98.5
Sources of information on substance use (n=398)		
Peer education	30	7.5
Awareness campaign	20	5.0
Education curriculum	87	21.9
Rehabilitation centres	6	1.5
Media (TV, Radio, Newspapers, Magazines)	255	64.1
Knowledge of examples of abused substances*		
Alcohol	386	95.5
Marijuana (cannabis, weed)	343	84.9
Tranquilizers (Valium)	146	36.1
Opiates (morphine)	145	35.9
Tobacco	328	81.2
Cocaine	375	92.8
Inhalant	144	35.6
Heroin	315	78.0
Methamphetamine	171	42.3
Cough syrup (codeine)	278	68.8
Ecstasy	124	30.7
Caffeine (kola nut, coffee)	179	44.3
Knowledge of the complications of substance usage		
Anxiety	354	87.6
Euphoria happiness	199	49.3
Improved memory and learning ability	58	14.4
Aggressiveness	337	83.4
Raised self-confidence	299	74.0
Pessimism	267	66.1
Personality disorder	298	73.8
Sleep disorder	267	66.1
Depression	329	81.4
Forgetfulness	346	85.6
Knowledge of the consequences of substance usage		
Addiction	381	94.3
Problem with Family	110	27.2
Missing school/ School dropout	126	31.2
Illegal activities, crimes	236	58.4
Poor academic performance	281	69.6
Health problems (HIV, Hepatitis, Kidney disease)	284	70.3
Problems with working memory	299	74.0
Indiscriminate gender	217	53.7
Mental condition (psychosis, severe anxiety)	349	86.4
Accidents leading to injuries and deaths	379	93.8

*Multiple responses

The attitude of the respondents to substance use was assessed and graded using a Likert scale: strongly agree-5 marks, agree-4 marks, neutral-3 marks, disagree–2 marks, strongly disagree-1 mark. Every correct answer was scored 5, when the correct answer is strongly disagree, the Likert scale will be reversed, making the obtainable score for attitude to be a minimum and maximum score of 12 and 60 points, respectively. The mean score calculated was 45, and attitude was graded as positive if the score was above the mean, and negative, if below the mean. The use of

substances was scored and graded on a 13-point scale, using a binary response of 'yes' or 'no', which were scored 1 point or 0 point respectively. Those who scored between 11-13 were regarded as having good practice, while those who scored 10 and below had poor practice.

Ethical approval was obtained from the Health Research and Ethics Committee (HREC) of Lagos University Teaching Hospital, Idi-Araba, Lagos. (ADM/DCST/HREC/APP/5751). Informed written consent was obtained from each student and confidentiality was maintained throughout the study.

Table 2: Attitude towards use of substances (n=404)

	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
All drugs (legal or illegal) are potentially harmful to health.	231 (57.2)	149 (36.9)	16 (3.9)	7 (1.7)	1 (0.3)
Alcohol abuse causes more problems in society than drug abuse.	34 (8.4)	213 (52.7)	138 (34.2)	16 (3.9)	3 (0.7)
Most young people today try out cannabis/marijuana/party drugs.	84 (20.8)	278 (68.8)	33 (8.2)	7 (1.7)	2 (0.5)
The use of cannabis/marijuana/grass should not be against the law.	22 (5.5)	25 (6.2)	27 (6.7)	292 (72.3)	38 (9.4)
Drugs are not a problem to us here in this neighbourhood.	22 (5.5)	33 (8.2)	218 (53.9)	117 (28.9)	14 (3.5)
Most people are concerned about the drug problem in Nigeria.	49 (12.1)	48 (11.9)	223 (55.2)	77 (19.1)	7 (1.7)
It is normal that young people will try drugs at least once.	20 (4.9)	34 (8.4)	23 (5.7)	230 (56.9)	97 (24)
The drug problem in Nigeria is out of control.	55 (13.6) 264 (65.4)	90 (22.3) 81 (20.1)	205 (50.7) 14 (3.5)	48 (11.9) 44 (10.9)	6 (1.5) 1 (0.3)
The availability of illegal drugs is a threat to young people nowadays.	28 (6.9)	16 (3.9)	37 (9.2)	159 (39.4)	164 (40.6)
Using some drugs like marijuana is not addictive.	296 (73.3)	48 (11.9)	16 (3.9)	35 (8.7)	9 (2.2)
Even with using the drug for the 1st time, there is a probability of becoming addicted.	16 (3.9)	18 (4.5)	11 (2.7)	84 (20.8)	275 (68.1)
Occasionally, use is ok					

RESULTS

The majority (48%) of the respondents were between 17-20 years, with a mean age of 20.9±2.44 years. More than half (54.5%) of the respondents were males and more (63.1%) were Christians. The highest proportion of the students were in the 300 level (45.5%), the majority (67.6%) were from the Yoruba tribe, and most were single (97.0%). Most of the respondents' fathers and mothers were educated (91.0%, 89.1%) and employed (94.0%, 99.1%) respectively. Their family setting was mainly monogamous (88.6%), with 74.8% of their parents living together.

The majority (98.5%) of the respondents were aware of substance use and the level of knowledge was high: 71% had good knowledge overall (Figure 1).

Table 3: Prevalence of substance use

Variable	Frequency	Percent (%)
Use of alcohol		
Alcohol Usage (n=404)	11	2.7
Age at first alcoholic drink (n=11)		
<15yrs	2	18.2
15yrs+	9	81.8
Close contact taking alcohol (n=11)		
Siblings	1	9.1
Friends	8	72.7
Others	2	18.2
Use of tobacco		
Smoked cigarettes (n=404)	94	23.3
Age at first smoke (n=94)		
<18yrs	54	57.4
18yrs+	40	42.6
Frequency of cigarettes smoked (n=94)		
Once or twice daily	38	40.4
Occasionally	22	23.4
Regularly in the past	10	10.6
Regularly now	24	25.5
Use of drugs		
Used Drugs (n=404)	43	10.7
Age at first intake (n=43)		
<18yrs	22	51.5
18yrs+	21	48.5
Types of Drugs Used (n=43, multiple responses included)		
Cannabis (marijuana, Indian hemp, grass, weed, Igbo, shisha)	9	20.93
Heroin (skunk, brown sugar, smack, bang)	2	4.65
Cocaine (coke, powder, Charlie, Thailand white)	1	2.33
Inhalant/ Solvent (glue, petrol, paint, thinner, gases)	1	2.33
Pharmaceutical drugs not prescribed for you (codeine cough syrup)	8	18.6
Coffee	22	51.16
Energy Drinks	27	62.8
Reasons for substance usage (n=43, multiple responses included)		
For social status	10	23.3
For pleasure	21	48.8
To relieve school stress	3	6.98
To prevent cold	5	11.6
Peer pressure	28	65.1
Close contact taking any of the substance (n=333)		
None	123	36.9
Father	6	1.8
Mother	6	1.8
Siblings	46	13.8
Friends	137	41.1
Others	15	4.6

Most of them had good knowledge of complications (70%) and consequences (53%) of substance use. The media is the major source of information on substance use (64.1%) followed by the education curriculum (21.9%). (Table 1). Most (65.4%) students had a positive attitude towards not using substances (Figure 1). Most (73.3%) strongly agree that there is a probability

of becoming addicted to any drug even when used for the first time; more than half of the respondents (65.4%) strongly agree that the availability of illegal drugs is a threat to young people nowadays and 68.8% agree that most young people today try out cannabis/marijuana/grass/party drugs. More than half (56.93%) disagree that it is normal for young people to try drugs at least once (Table 2).

Table 4: Association between selected sociodemographic characteristics and alcohol use (n=404)

	Alcohol Use			
	No	Yes	χ^2	p -value
Variables	**n (%)**	**n (%)**		
Gender				
Female	180 (97.28)	5 (2.72)	0.0002	0.989
Male	213 (97.26)	6 (2.74)		
Age (years)				
17-20	185 (95.4)	9 (5.0)	5.259	0.072
21-25	186 (99.0)	2 (1.1)		
26-30	22 (100.0)	0 (0.0)		
Level of education				
100 Level	53 (98.2)	1 (1.9)	1.411	0.703
200 Level	132 (96.4)	5 (3.7)		
300 Level	179 (97.3)	5 (2.7)		
400 Level	29 (100)	0 (0)		
Father's Educational level				
Educated	355 (96.9)	11(3.0)	1.174	0.278
Not educated	38(100.0)	0(0.0)		
Mother's Educational level				
Educated	349(96.9.)	11(3.1)	1.382	0.239
Not educated	44(100.0)	0(0.0)		
Father's occupation				
Employed	367(97.1)	11(2.9)	0.778	0.378
Unemployed	26(100.0)	0(0,0)		
Family setting				
Monogamy	349(97.5)	9(2.5)	0.518	0.472
Polygamy	44(95.7)	2(4.3)		

Over a third of the respondents (36.7%) used substances: 23.3%, 10.7% and 2.7% for tobacco, drugs and alcohol respectively. The majority (81.8%) of those who drank alcohol were above 15 years the first time they drank: 27.3% of them drank alcohol a day before and in the previous 30 days. Most (72.7%) had friends close to them who drank alcohol. Of those who smoke, more than half (57.4%) were less than 18 years at their first smoking, and over a third (40.4%) of the students smoke tobacco daily. More respondents (53.5%) smoke 1-5 cigarettes per day, while 32.9% smoke less than one cigarette stick per day. About a third (35.1%) have smoked, chewed or sniffed forms of tobacco other than cigarettes. Regarding the use of drugs/drug-containing substances, about half of the respondents (51.5 %) had their first use of the substance below 18 years old, almost two-thirds (62.8%) take energy drinks, about half (51.1%) take coffee, one-fifths (21%) take cannabis, 18.6% take pharmaceutical drugs without prescription, 4.65% heroin, 2.33%

cocaine and inhalants. Over a quarter (30.2%) of those who take drugs had their last use in the past week and cannabis (37.2%) was the most recent drug taken. Reasons for substance use are mainly peer pressure (65.1%) and pleasure (48.8%). Many of those who take drugs and alcohol had friends who also took them (41.14% and 72.7% respectively) (Table 3).

Table 4: Association between selected sociodemographic characteristics and alcohol use (n=404)

	Alcohol Use			
	No	Yes	χ^2	p -value
Variables	**n (%)**	**n (%)**		
Gender				
Female	180 (97.28)	5 (2.72)	0.0002	0.989
Male	213 (97.26)	6 (2.74)		
Age (years)				
17-20	185 (95.4)	9 (5.0)	5.259	0.072
21-25	186 (99.0)	2 (1.1)		
26-30	22 (100.0)	0 (0.0)		
Level of education				
100 Level	53 (98.2)	1 (1.9)	1.411	0.703
200 Level	132 (96.4)	5 (3.7)		
300 Level	179 (97.3)	5 (2.7)		
400 Level	29 (100)	0 (0)		
Father's Educational level				
Educated	355 (96.9)	11(3.0)	1.174	0.278
Not educated	38(100.0)	0(0.0)		
Mother's Educational level				
Educated	349(96.9.)	11(3.1)	1.382	0.239
Not educated	44(100.0)	0(0.0)		
Father's occupation				
Employed	367(97.1)	11(2.9)	0.778	0.378
Unemployed	26(100.0)	0(0,0)		
Family setting				
Monogamy	349(97.5)	9(2.5)	0.518	0.472
Polygamy	44(95.7)	2(4.3)		

There was no statistically significant association between the sociodemographic variables and alcohol use. (Table 4). There were statistically significant associations between gender (p=0.002), age (p=0.001), family settings (p=0.050) and tobacco use, but none between alcohol use and tobacco use. Males, within the age range 26-30 years and from polygamous family settings smoke tobacco more. (Table 5). There were statistically significant associations between gender (p=0.002), level of education (p=0.015), fathers' educational level (p=0.001), family settings (0.009), close contacts (p=0.001), tobacco use (<0.001) and drug use. Those who have educated fathers had a low prevalence, while those from polygamous family settings had a higher prevalence of drug use. The prevalence of drug use was higher among those who smoke tobacco. (Table 6).

After bivariate analysis using Chi square test, variables that had a P-value of <0.2 were entered into the binary logistic regression model to

determine the predictors of the outcome variable.[28] The logistic regression analysis results were presented using adjusted odds ratio and 95% confidence interval. A P-value of <0.05 determined the level of statistical significance. Multivariate analysis revealed that age (aOR = 1.27, 95% CI: 1.14-1.41, p=.000) and gender (aOR = 0.56, 95% CI:0.33-0.93, p=0.026) were predictors of tobacco use; while age (aOR = 1.31, 95% CI: 1.15-1.50, p=0.000), gender (aOR = 0.41, 95% CI: 0.19-0.86, p=0.019), level of education (aOR = 7.25, 95% CI: 1.54-34.12, p=0.12) and tobacco use (aOR = 0.08, 95% CI: 0.04-0.16, p=0.000) were predictors of drug use. (Table 7). There was no statistically significance relationship between the level of knowledge and attitude of the respondents towards not using substances (p=0.677). Moreover, knowledge was not associated with the practice of substance use among the respondents (p= 0.1423). (Table 8).

Table 5: Association between selected sociodemographic characteristics and tobacco use (n=404)

	Tobacco Use			
	No	Yes	χ^2	p-value
Variables	**n (%)**	**n (%)**		
Gender				
Female	155(83.7)	30(16.3)	9.332	0.002*
Male	155(70.8)	64(29.2)		
Age (years)				
17-20	166(85.6)	28(14.4)	19.023	0.001*
21-25	132(70.2)	56 (29.8)		
26-30	12(54.6)	10(45.5)		
Level of education				
100 Level	43(79.6)	11(20.4)	5.826	0.12
200 Level	107(78.1)	30(21.9)		
300 Level	143(77.7)	41(22.3)		
400 Level	17(58.6)	12(41.4)		
Father's Educational level				
Educated	282(77.1)	84(22.9)	0.218	0.64
Not educated	28(73.7)	10(26.3)		
Mother's Educational level				
Educated	279(77.5)	81(22.5)	1.09	0.296
Not educated	31(70.5)	13(29.6)		
Father's occupation				
Employed	290(76.7)	88(23.3)	0.001	0.929
Unemployed	20(76.9)	6(23.1)		
Family setting				
Monogamy	280(78.2)	78(21.8)	3.855	0.050*
Polygamy	30(65.2)	16(34.8)		
Alcohol use				
No	300(76.3)	93(23.7)	1.273	0.259
Yes	10(90.9)	1(9.1)		

DISCUSSION

Most respondents were between 17-20 years, with a mean age of 20.9±2.44 years. Literature suggests that early (12–14 years) to late (15–17 years) adolescence is a critical risk period for the initiation of substance use and that substance use may peak among young people aged 18–25 years.[29] Most (98.5%) of the respondents were aware of substance use, and the level of knowledge of substance use was high; 71%

demonstrated overall good knowledge, encompassing examples, complications and consequences of substances used, similar to findings from another study in Lagos, Southwest Nigeria and Malaysia, where 80% and 82.03% had good knowledge respectively.[30,31] The substantial knowledge exhibited by undergraduate students may be attributed to their information sources and inherent curiosity.

Table 6: Association between selected sociodemographic characteristics and drug use (n=404)

	Drug Use			
	No	Yes	χ^2	p value
Variables	**n (%)**	**n (%)**		
Gender				
Female	175(94.6)	10(5.4)	9.736	0.002*
Male	186(84.9)	33(15.1)		
Age (years)				
17-20	180(92.8)	14(7.2)	4.609	0.099
21-25	162(86.2)	26(13.8)		
26-30	19(86.4)	3(13.6)		
Level of education				
100 Level	43(79.6)	11(20.4)	10.482	0.015*
200 Level	119(86.9)	18(13.1)		
300 Level	173(94.0)	11(5.9)		
400 Level	26(89.7)	3(10.3)		
Father's Educational level				
Educated	332(90.7)	34(9.3)	7.5	0.001*
Not educated	29(76.3)	9(23.7)		
Mother's Educational level				
Educated	325(90.3)	35(9.7)	2.95	0.085
Not educated	36(81.8)	8(18.2)		
Father's occupation				
Employed	336(88.9)	42(11.1)	1.35	0.245
Unemployed	25 (96.2)	1(3.6)		
Family setting				
Monogamy	324(90.74)	33(9.24)	6.675	0.009*
Polygamy	36 (78.26)	10(21.74)		
Close contact using drug (n=333)				
None	121(98.4)	2(1.6)	40.9479	0.001*
Father	6(100.0)	0(0)		
Mother	5(83.3)	1(16.7)		
Siblings	40(86.9)	6(13.0)		
Friends	112(81.8)	25(18.3)		
Alcohol Use				
No	349(88.8)	44(11.2)	1.382	0.240
Yes	11(100.0)	0(0.0)		
Tobacco Use				
No	298	12	67.657	<0.001*
Yes	62	32		

A positive attitude towards not using substances was exhibited by 65.4% of respondents, which is comparable to 83.9% of Malaysian students.[31] The high level of substance use knowledge found in these two study groups may have contributed to the positive attitude.

Table 7: Predictors of alcohol intake, tobacco use and drug use

Variables	Constant			Alcohol Intake		
				95.0% CI for aOr		P value
		B	aOR	Lower	Upper	
Age Range	2.915	-.322	0.73	0.52	1.02	0.062
				Tobacco Intake		
Age Range	5.328	.237	1.27	1.14	1.41	0.000*
Gender		-.584	0.56	0.33	0.93	0.026*
Level of Education		-.037	0.96	0.32	2.89	0.947
Family setting		-.419	0.66	0.32	1.35	0.252
				Drug Use		
Age Range	-7.738	.273	1.31	1.15	1.50	.000*
Gender		-.901	0.41	0.19	0.86	.019*
Level of Education		1.981	7.25	1.54	34.12	.012*
Family Setting		-.741	0.48	0.20	1.14	.094
Tobacco use		-2.551	0.08	0.04	0.16	.000*

*Significant B – Coefficient of Regression aOR – Adjusted Odds Ratio

Table 8: Association between knowledge and attitude and prevalence of substance use (n=404)

	Attitude towards not using substances		**Statistics**	
	Positive n (%)	Negative n (%)	x^2	p-value
Knowledge				
Good	190(65.9)	98(34.03)	0.173	0.677
Poor	74(63.8)	42(36.2)		
	Substance use (n=404)		**Statistics**	
	Yes n (%)	No n (%)	x^2	p-value
Knowledge				
Good	69(23.9)	219(76.0)	2.153	0.1423
Poor	36(31.0)	80(68.9)		

The overall prevalence of substance use was 36.7%, which correlates closely with 37% in a study carried out by Wada et al in Katsina, and 27.5% among undergraduate students in Uyo.[13,15] The prevalence of tobacco, drugs and alcohol use in this study was 23.3%, 10.7% and 2.7% respectively, similar to findings for tobacco and drug use (27.8% and 9.5%) among male high school students in Riyadh, Saudi Arabia.[32] Among those who take drugs/drug-containing substances, 62.8% take energy drinks and 51.1% drink coffee, usually during intense study or work periods to stay awake. The health hazards linked to energy drinks in particular, may not be as widely recognized or highlighted when compared with those of tobacco, alcohol or other drugs, fostering a perception that energy drinks are relatively safer for consumption. Energy drinks frequently capitalize on a promise of increased energy, enhanced alertness, and improved performance through marketing, which may play a role in their high usage. The other drugs used

include cannabis, pharmaceuticals, heroin, cocaine, and inhalants at 20.93%, 18.6%, 4.65%, 2.33% and 2.33% respectively. A similar pattern, though with higher prevalence rates, was found among undergraduates across selected private universities in Southwest Nigeria.[33] In contrast, a study across three universities in Katsina State reported much lower rates with cough syrup, cannabis, codeine and tranquilizers topping the prevalence at 14.7%, 13.3%, 9.1%, and 5.2% respectively.[13] This regional disparity is in agreement with the UNODC survey on drug use in Nigeria.[5]

A statistically significant association was observed between age and tobacco use. This aligns with findings in a study among University of Khartoum medical students, but contradicts that among the University of Uyo undergraduate students.[15,34] Major life transitions, such as entering college can influence the pattern of substance use, and may be responsible for the observed associations in this study. Gender showed a statistically significant association with smoking and drug use: males exhibited a higher rate of substance usage compared to females, correlating with other studies in Nepal and India.[22,35] Probably because males explore out of curiosity, while females are usually more cautious. The association between level of education and drug use was statistically significant, contradicting the findings among students in Saudi Arabia and Khartoum, which reported no statistical association between level of education and drug, alcohol, or tobacco use.[32,34] Students at different academic levels may experience varying levels of academic stress and pressure, which can influence their likelihood of turning to substance use as a coping mechanism. For instance, higher-level students might face more demanding coursework and higher-stakes examinations, which could impact patterns of substance use. Those who smoked tobacco were also more likely to use drugs. Tobacco smoking was found to be a predictor of drug use, probably acting as a "gateway" for the use of other substances as reported in other studies.[36-38]

The study found no statistically significant association between respondents' knowledge of substance use and their attitude or practice. This portrays attitudes and practices as intricate and multifaceted, frequently shaped by variables that extend beyond knowledge. This is at variance with findings by Wada et al in Katsina that reported a statistical association between knowledge and drug use.[13] The leading reason for substance use among the respondents is peer pressure (65.1%), similar to the findings in a Kenyan study (75%).[9] Peer pressure is effective because adolescents and young adults commonly have an intrinsic desire to be accepted and included within their social circles. The majority of respondents who used drugs and alcohol (41.14% and 72.7%, respectively) have friends who use the same. A statistically significant association exists between friends' influence and drug use, corresponding with findings among male undergraduate students in Owerri, South-East Nigeria, where 46.8% were introduced to

alcohol through their friends.[18] Peer pressure may have the ability to significantly influence attitudes and practice to the extent of overshadowing the impact that knowledge should have had on substance use. Other factors preventing knowledge translation into practice need to be explored further to facilitate the development of appropriate interventions to bridge the gap. These include age, gender, and level of education, which were found to be predictors of tobacco and drug use, as well as the gateway effect.

The study concludes that knowledge and a positive attitude towards not using substances did not influence practice. Smokers were more likely to use drugs. Energy drinks were the most consumed drug-containing substance; and health education is required to correct its perceived health benefits. Peer pressure was the leading reason for substance use. By the same token, peer influence can be harnessed to curb the menace by engaging students who are successfully weaned off its use, and have developed a positive attitude towards not using substances to influence their peers. Public health policies that consider the above will be useful in preventing and managing the adverse impact of substance use.

Study limitations

The cross-sectional study design used for this study would only allow a measure of association. A longitudinal study design would have been preferable to infer causality.

Strengths

The sample was representative and suitable for the study. The study highlighted a change from the usual substance use suspects (cannabis, cigarettes, alcohol, codeine), to another harmful substance hidden in plain sight (energy drinks).

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Authors' contribution: E.O.O - concept, design, the definition of intellectual content, literature search, statistical analysis, manuscript preparation, manuscript editing and manuscript review. D.M.K - concept, design, the definition of intellectual content, literature search, data acquisition, data analysis, statistical analysis, manuscript preparation, manuscript editing and manuscript review. O. F. A - concept, design, the definition of intellectual content, literature search, manuscript preparation, manuscript editing and manuscript review.

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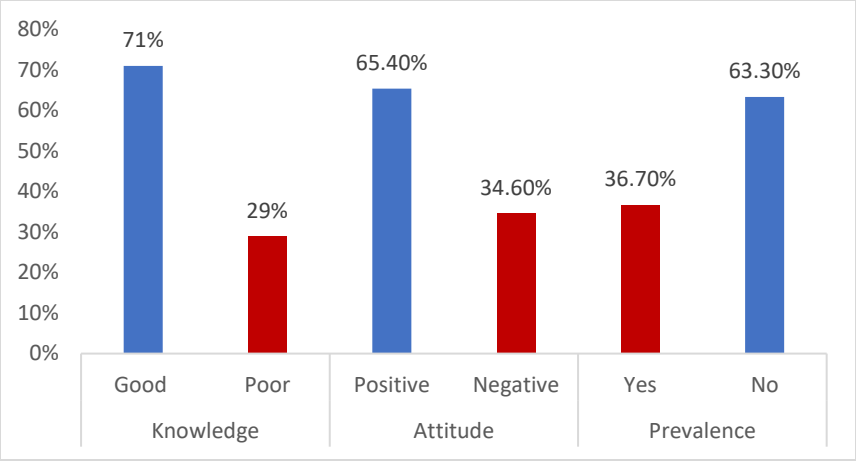

Figure 1: Overall knowledge, attitude and prevalence of substance use of respondent

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