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Department of Community Medicine,

University of Abuja, Nigeria.

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Dear Editor-in-Chief,

Global Scientific Journals.

Dear Sir/Ma,

Cover letter

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3. That there are no prior publications or submissions with any overlapping information
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5. That each author listed on the manuscript has seen and approved the submission of this version of the manuscript and takes full responsibility for the manuscript.

Signed,

Dr. Abubakar Imam,

(Corresponding author)

Title Page

Substance use and risky sexual behaviors among students of the University of Abuja, Federal Capital Territory (FCT) Nigeria.

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Conflict of interest: There is no potential conflict of interest on this study.

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List of Abbreviations

1. FMCPH: Fellow Medical College of Public Health
2. MBBS: Bachelor of Medicine and Bachelor of Surgery
3. PGDM: Postgraduate Diploma in Management
4. MPH: Master's Degree in Public Health
5. B.Sc.: Bachelor of Science
6. SPSS: Statistical Package for Social Sciences

ABSTRACT

Background: Use of alcohol and other substances has been linked to risky sexual behaviours. Substance use and risky sexual behaviours have negative effects on the individual and the society, therefore, there is an urgent need to identify the factors that contribute to these practices. The study set out to assess the burden of substance use and the magnitude of risky sexual behaviours among University of Abuja students, factors associated with substance use and those associated with risky sexual behaviours; and to assess the association between substance use and risky sexual behaviours in the same population.

Methodology: this was a cross-sectional study which investigated the burden and relationship between substance use and risky sexual behaviours were investigated among 363 1st to 6th year students from 10 faculties of university of Abuja. The students were selected using simple random sampling technique. Data collection instrument was adopted from WHO questionnaire on substance use and risky sexual behaviours. Data was analysed using SPSS software version 20 and the appropriate test statistics with level of significance set at p-value <0.05.

Results: Lifetime substance use among male and female respondents was (75.8% and 53.8%, p = 0.0001), current substance use amongst males and females was (25% and 8.8%, p = 0.194) for alcohol and (6.4% and 1.4%, p = 0.282) for cigarette respectively. The major reasons for substance use among males and females were "to enjoy living" (75.0% vs. 25.0%) and "for curiosity" (61.8% vs. 38.2%, p= 0.622)**.** Significant predictors of substance use were type of accommodation (OR: 5.2, 95% C.I: 1.107, 24.86) and faculty (OR: 4.4, 95% CI: 1.268, 15.445). Lifetime practice of risky sexual behaviour was 41.6% and major predictors for risky sexual behaviour were marital status (OR 5.2, 95% CI: 1.540, 5.848, p = 0.014) and substance use (OR 3.8, (95% CI: 3.763, 3.763, p = 0.001).

Conclusion: This study suggests a heavy burden of substance use and risky sexual behaviour. Appropriate health education and substance use cessation strategies are urgently needed to mitigate these problems.

Key words*:* Substance Use, Risky Sexual Behaviour, undergraduate Students,

Introduction and background

Natural chemical stimulants have long been used by people of diverse cultures without considering their costs. In recent years, researchers have begun to explore the intersection of alcohol or drug use and sexual "risk behaviours" – activities that put people at increased risk for sexually transmitted diseases (STDs), unintended pregnancy, and sexual violence. [1] Studies conducted indicate that alcohol consumption and illicit drug use often occurs in association with risky sexual activity.[2]

Substances: Any non-medical drugs used by study subjects such as alcohol, *khat*, tobacco, Cannabis, heroin, cocaine, and marijuana to alter their mood or behavior, while l*ife time substance use* implies ever using any of the aforementioned substances in a life time. [1] *Previous year substance use* means using any of the aforementioned substances within the last 12 months, and *Current substance use* means using any of the aforementioned substances within 30 days preceding the study. [1] *Risky sexual behavior* is defined as one of the following - inconsistent use of condoms, having multiple sexual partners and initiating sex before age 18 years, while c*onsistent condom use* is the use of a condom during every sexual encounter. [1]

The global burden of substance use is substantial, accounting for 8.9% of productive life lost annually due to disability and premature mortality, as measured in disability-adjusted life-years (DALYs). Among the ten leading risk factors in terms of avoidable disease burden, tobacco was fourth and alcohol fifth in 2000 and both remain high on the list in the 2010 and 2020 projections. Tobacco and alcohol contributed 4.1% and 4.0%, respectively, to the burden of ill health in 2000, while illicit substances contributed 0.8%. [3]

Drugs are believed to provide pleasure because they give inner peace and satisfaction, relax the muscles and heighten sensation.[4] College students in Nigeria experiment with drugs without

knowing which drug to take, when to take it and how to take it,[5] and presently, risky alcohol use among university students has become a serious public health issue in Nigeria.[6] Youth's use of drugs, alcohol and other substances is quite alarming and several researchers have reported alcohol as the drug most often used by young people. Studies have asserted that alcohol is as old as human history and in traditional societies; it was not out of place for alcohol to be brewed and served at parties and ceremonies for both adults and the young ones with the younger population enjoying adult supervision.[7,8] To corroborate this assertion, Awoyinfa noted that history has revealed that alcohol has been in existence in all cultures of the world, and it is believed to be the first known chemical mood modifier. In African traditional religion, alcohol occupies a prominent position in the worship of deities.[9]

Alcohol use and its negative effects on health are very high among the general population globally. Among students, continuous and excessive use has been linked to poor academic performance and school drop-out.[10] Alcohol is a leading cause of morbidity and mortality among college students in the United States.[11] Several studies have shown very high rates of alcohol use and abuse among students in secondary and tertiary institutions in Nigeria.[9,12] Some of these studies have also found that alcohol use begins in childhood or early adolescence.

Risk taking is common and expected in adolescence. Across the lifespan, adolescence is the time of greatest risk taking.[13] While understanding or even over-estimating the likelihood that an action will result in harm, adolescents may place higher value on the benefits that might come from taking a particular risk. Adolescents are more responsive to the rewards of risk (such as peer approval), may be less sensitive to feeling the ill effects of substance use (such as hangovers), and are still developing the capacities for judgment and self-control.[14]

While there are undoubtedly associations between substance use and sexual risk taking, research to date roughs out a picture that is complex and sometimes surprising. Our first thought might be that substance use *causes* sexual risk taking through intoxication: by impairing judgment, suppressing inhibition, reducing perception of risk, and/or heightening desire.[15]

According to a cross-sectional study conducted in University of Abuja in 2015 on alcohol use among 600 full-time students of the University. The males were 295 (49.5%) while females were 305(50.8%). The lifetime prevalence of alcohol use is 56.5% (339), while the 1 year and 30 days rates are 45.5% (273) and 33.3% (200) respectively, and were higher among males, adolescents/young adults and those from dysfunctional homes. Majority of those who used alcohol had their first drink between the ages of 11 and 18 years.[16]

A study aimed at determining the prevalence, pattern and associated factors of substance use among students in a university in Southwestern Nigeria in 2013 revealed a lifetime prevalence of any psychoactive substance use as 78%. The prevalence of alcohol, cannabis and inhalant was significantly more in males. The prevalence of alcohol use was significantly lower among students who reported frequent participation in religious activities.[17]

Studies from Northern part of Nigeria showed a relatively lower prevalence rate of substance use among students compared to those obtained from the Southern part of the country. Yunusa and associates found a lifetime prevalence of any drug use among University students in Northwestern Nigeria was 52.6%,[18] while Tawasu reported 23.7% in same Northeastern region.[19]

While the studies above were conducted in the universities, substance use among secondary school students in a study of selected secondary institutions in Bayelsa state, South-South Nigeria revealed that 33.8% have ever abused substances.[20]

2.2 FACTORS ASSOCIATED WITH SUBSTANCE USE

Epidemiology of substance use among University students in Sudan, 2016, showed overall prevalence of substance use is 31%. On multivariate analysis, male sex was the principal predictor for substance use (AOR: 5.55; 95% CI: 3.38, 9.17). [21]

2.3 BURDEN OF RISKY SEXUAL BEHAVIOURS

A study on sexual risk behaviour among undergraduate students in Enugu, Nigeria, showed a prevalence of sexual activity of 76.8%, with 85.4% of females and 62.3% of males having more than one sexual partner. Sexual risk behaviours that include having multiple sexual partners, sex before age 18 and not using a condom were more common among the lower social class, adolescents, females and those living off-campus.[22]

The Nigeria Demographic and Health Surveys (NDHS) for 2003, 2008 and 2013 were pooled to examine the relationship between ethnicity and youth sexual reproductive health, proxied by age at sexual debut, multiple sexual partners (MSP) and condom use at last sexual activity. The median age at first sexual activity was 16 for females and 17 for males. 43% of male youths used condoms in their last sexual activity, compared to only 16% among females and a higher number of males (81%) had multiple sexual partners compared to females (35%). For females, elevated risks of first sex was higher among Hausa/Fulanis aged 15–19 and elevated risk of first sex was higher among Yoruba males.[23]

2.4 FACTORS ASSOCIATED WITH RISKY SEXUAL BEHAVIOURS

In 2017, a study conducted in Plateau state, titled exploring the factors influencing adolescent sexual behaviours in Plateau state, Nigeria, reported sexual debut from ages 10 to 15 years. Those who were in school mostly mentioned pleasure love and peer pressure as reasons for their

sexual act while majority of those out of school reported forceful sex and transactional sex as major reasons for their sexual activities.[24]

2.5 ASSOCIATION BETWEEN SUBSTANCE USE AND RISKY SEXUAL BEHAVIOURS

A study conducted in Lagos State, Nigeria, in 2013 on relationship between drug abuse and deviant behaviour among 100 undergraduate students of University of Lagos recorded that there was *no significant relationship between drug abuse and each of truancy, cultism and high risk sexual behaviour among undergraduate students of the University of Lagos, Nigeria*. [25]

A similar study conducted in Osun State, in 2016 looking at predisposing factors influencing risky sexual behaviours revealed that living "couples' life", having multiple sexual partners, 'call girls syndrome', and rape were the major risky behaviours among undergraduates. It also revealed that off campus system, poverty, and peer influence are the major predisposing factors influencing risky behaviours among undergraduates. Gender has no significant difference on the expression of undergraduates on predisposing factors influencing risky sexual behaviours, while academic level and age has significant difference on the expression of undergraduates on predisposing factors influencing risky sexual behaviours.[26]

Aim of the study

To assess the prevalence of substance use and magnitude of risky sexual behaviour and its association with substance use among University of Abuja students. The study is crucial for initiating and strengthening proper educational and interventional programs on substance use and risky sexual behaviours among university students.

The study set out to assess the burden of substance use and the magnitude of risky sexual behaviours among University of Abuja students, factors associated with substance use and those

associated with risky sexual behaviours; and to assess the association between substance use and risky sexual behaviours in the same population.

Methodology

The study was conducted in University of Abuja, located in the Nigerian Federal Capital Territory. The University has 10 faculties and a college of Health Sciences that has 3 faculties: College of Health Sciences, Faculty of Arts, Faculty of Agriculture, Faculty of Education, Faculty of Engineering, Faculty of Law, Faculty of Sciences, Faculty of Social Sciences, Faculty of Management Sciences, Veterinary Medicine and School of Postgraduate Studies.[27]

During the study period, a total number of 63,117 students are studying in the various programmes of the University, out of which 15,391 are regular undergraduates engaged in full-time studies. All undergraduate students who are registered for 2016/17 academic year in University of Abuja were considered for the study. Regular undergraduate students, who are not blind and who are not critically sick (to the extent of being unable to read and write) during the time of data collection were included. Postgraduate and Part-time students were excluded because they are considered to have other interests apart from studying and they are more difficult to reach. Students who refuse consent were also excluded from the study.

Study design: A descriptive cross-sectional study design was used.

Sample size determination

The sample size for the quantitative data is computed based on Leslie-Kish formula for single population proportion. Taking current prevalence of alcohol use as 33.3% from a study done among full-time students of the University of Abuja [28] to obtain maximum sample size at 5% degree of precision and 95% confidence interval of 1.96 and adding 10% non-response rate, the total sample size obtained was 374.

Sampling technique

A multistage sampling technique was used where the study population was stratified into ten clusters (ten faculties including College of Health of Sciences). Then, simple random sampling was used to select a department from each faculty. And questionnaires were administered to every consenting student in these departments until the calculated sample size was completed.

Data collection instruments

The questionnaire used was modified from World Health Organization (WHO) questionnaire for student drug use and risky sexual behavior among youths. Other items used in the questionnaire were obtained from literature review. The questionnaire has 3 sections: socio-demographics, substance use and sexual health. These instruments were self-administered and were pretested before the commencement of the study.

Data collection

Data was collected by the researcher with the help of two research assistants. Participants were approached on lecture days in their departments and were requested to complete the questionnaires, which took an average of 5 to 10 minutes to complete. The researcher and research assistants gave necessary assistance when required and double-checked the completed questionnaires to ensure adequate information was given. This process continued until the required sample size was met. The study commenced in June 2017 and duration of data collection lasted about two weeks.

Data analysis

Data from the questionnaire were entered and analyzed using IBM SPSS version 21 software. Descriptive statistics was used. Bi-variate and multivariate analyses were employed to infer

associations and predictions. Logistic regression analyses were also employed to test significant associations. Outcomes with p-values at <0.05 were considered significant.

Ethical considerations

A written ethical approval was obtained from the Health Research Ethics Committee (HREC) of the University of Abuja Teaching Hospital (UATH) as attached in appendix III. Participation was voluntary and there was no incentive given for participation and informed consent was obtained prior to administering the questionnaires.

Results

A total of 374 questionnaires were administered to the respondents and 363 were retrieved and analyzed giving a response rate of 97.1%. The males were 207(57.0%) while females were 156(43.0%). Other details of the socio-demographic characteristics of participants are shown in Table 1.

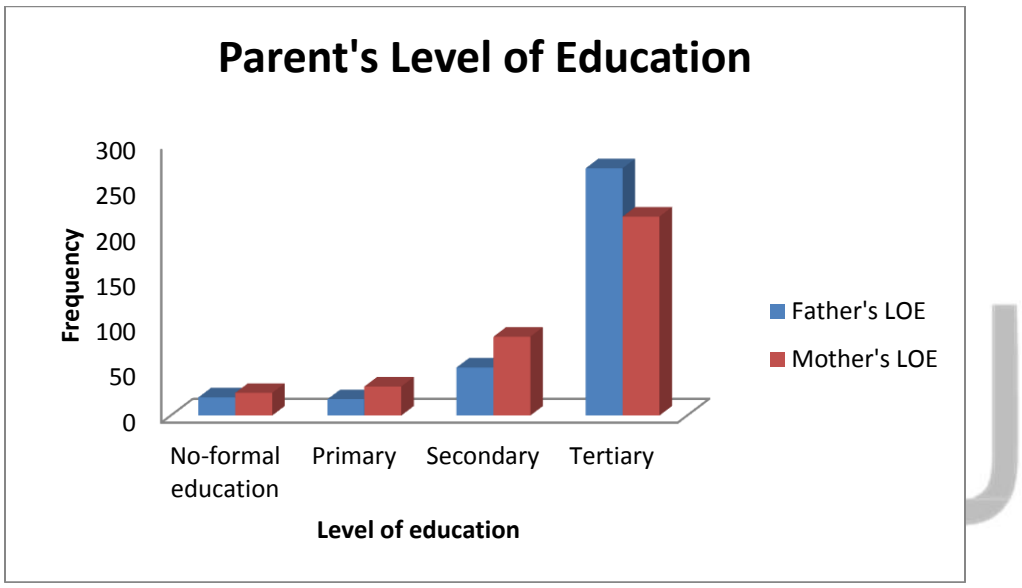
Table 1: **Socio-demographic characteristics of respondents**

Variables	Male n (%)	Female n (%)	p-value
	(n = 207)	(n = 156)	
Mean age (years) ±SD	23.69	21.65	0.001*
(range) 22.81 ±4.1(16 - 38)			
Age Grouping (years)			
16-20	57(27.5)	77(49.4)	
21-25	89(43.0)	60(38.5)	
26-30	47(22.7)	17(10.9)	
31-35	13(6.3)	2(1.3)	
36-40	1(0.5)	0(0)	0.001*
Religion			
Islam	54(26.1)	49(31.4)	
Christianity	153(73.9)	107(68.6)	0.265
Marital Status			
Single	197(95.2)	138(88.5)	
Married	10(4.8)	18(11.5)	0.018*
Geopolitical Zones			
North-Central + FCT	73(36.0)	61(39.4)	
North-East	11(5.4)	7(4.5)	
North-West	10(4.9)	11(7.1)	
South-East	44(21.7)	27(17.4)	
South-West	36(17.7)	27(17.4)	
South-South	29(14.3)	22(14.2)	0.859

*p-value < 0.05

About half of the students (52%) live in the hostels, while a quarter (25%) live in rented apartments off campus and 18% live with their parents. The remaining 5% either stay with relatives or live alone in family's home.

More of the respondents (74.9%) had fathers with tertiary education while 60.3% had mothers with tertiary education. and were from either the upper or middle socioeconomic strata based on their fathers' occupation.



P-value = 0.001

Fig. 1: Parent's level of education

Burden of substance use

Table 2 summarizes the prevalence of any substance ever used showing significant difference across gender.

Table 2: Prevalence of substance used by gender

Prevalence of any substance used by Gender				
	Male	Female	χ^2	p-value
Lifetime use	157(75.8%)	91(58.3%)	12.605	0.000*
Previous year use	117(61.9%)	65(44.2%)	10.419	0.001*

Current use	84(44.7%)	45(30.6%)	6.895	0.009*

*p-value is significant at <0.05 level.

Table 3, however, shows the distribution of individual substances used across gender

Table 3: Prevalence of Individual substance used by gender

Prevalence of Individual substance used by Gender				
	Male (n=207)	Female (n=156)	χ^2	p-value
Coffee				
Lifetime use	88(42.51%)	53(33.97%)	0.105	0.746
Previous year use	52(27.51%)	35(23.81%)	2.240	0.134
Current use	30(15.96%)	16(10.88%)	0.338	0.561
Energy drinks				
Lifetime use	78(37.68%)	45(28.85%)	0.149	0.699
Previous year use	52(27.51%)	27(18.35%)	0.112	0.738
Current use	32(17.02%)	17(11.56%)	0.101	0.751
Alcohol				
Lifetime use	82(39.6%)	28(17.95%)	3.965	0.046*
Previous year use	65(34.39%)	22(14.10%)	2.106	0.147
Current use	47(25.0%)	13(8.84%)	1.689	0.194
Kola nut				
Lifetime use	74(35.75%)	28(17.95%)	4.559	0.032*
Previous year use	36(19.05%)	8(5.44%)	1.709	0.191
Current use	16(8.51%)	5(3.40%)	0.343	0.558
Cigarette/Tobacco				
Lifetime use	32(15.45%)	5(3.21%)	4.135	0.042*
Previous year use	15(7.94%)	2(1.36%)	2.167	0.141
Current use	12(6.38%)	2(1.36%)	1.155	0.282
Marijuana				
Lifetime use	20(9.66%)	3(1.92%)	4.537	0.033*
Previous year use	15(7.94%)	1(0.68%)	3.982	0.046*
Current use	9(4.79%)	0	3.699	0.054
Glue				
Lifetime use	10(4.83%)	2(1.28%)	1.570	0.210
Previous year use	5(2.65%)	1(0.68%)	0.522	0.470
Current use	4(2.13%)	0	1.742	0.187
Cocaine				
Lifetime use	5(2.42%)	1(0.64%)	0.795	0.373
Previous year use	4(2.12%)	0	1.597	0.206
Current use	3(1.60%)	0	1.181	0.277
Heroine				
Lifetime use	3(1.45%)	1(0.64%)	0.136	0.712
Previous year use	2(1.06%)	0	0.814	0.367
Current use	2(1.06%)	0	0.798	0.372

Gasoline				
Lifetime use	6(2.9%)	0	3.016	0.082
Previous year use	0	0	-	-
Current use	0	0	-	-

*p-value is significant at <0.05 level.

The mean age at first substance use in years was 16.19±4.36 (4-30). Comparing means of ages at first substance use among male and female respondents, independent t-test did not show any significance (t=0.909, p=0.364). 62.2% of those who have ever used a substance belonged to 11-18 years group of age.

Factors associated with substance use

The reason for first substance use varies among respondents, the commonest ones being in order "to stay awake", "to enjoy" living and "curiosity" respectively. Comparing these reasons showed that males took the first substance more than females in order to stay awake (χ^2=5.961, p=0.015) and to get away from worries (χ^2=4.397, p=0.036) at a statistically significant level. (Table 4)

Table 4: Reasons for substance use (n= ???)

Reasons for substance use				
Reason	Male	Female	χ^2	p-value
To be bold and strong	23(67.6%)	11(32.4%)	0.057	0.811
To enjoy living	42(75.0%)	14(25.0%)	2.275	0.131
To stay awake	39(52.0%)	36(48.0%)	5.961	0.015*
My friends do it	10(76.9%)	3(23.1%)	0.558	0.455
Curiosity	34(61.8%)	21(38.2%)	0.242	0.622
Ignorance	10(71.4%)	4(28.6%)	0.247	0.620
Family members do it	6(50.0%)	6(50.0%)	1.219	0.270
Get away from worries	13(92.9%)	1(7.1%)	4.397	0.036*
Sold nearby	3(50.0%)	3(50.0%)	0.783	0.376

*p-value is significant at <0.05

The respondents offered reasons for not using the substances, the commonest ones ranging from "it is bad for my health", "it is against my religion" and "just like that". Comparison of the reasons across gender did not show any significance. (Table 5)

Table 5: Reasons for not using the substance(s) (n=224)

Reasons for not using the substance(s)			
Reason	Male	Female	Total
It is bad for my health	45(51.7%)	42(48.3%)	87(100.0%)
I do not want to lose control	2(40.0%)	3(60.0%)	5(100.0%)
It interferes with my studying	9(69.2%)	4(30.8%)	13(100.0%)
It is against my religion	22(47.8%)	24(52.2%)	46(100.0%)
I do not want to disappoint someone I care about	2(40.0%)	3(60.0%)	5(100.0%)
I do not like the taste of the substance(s)	5(29.4%)	12(70.6%)	17(100.0%)
My friends do not take it	0(0.0%)	1(100.0%)	1(100.0%)
It costs too much	7(87.5%)	1(12.5%)	8(100.0%)
It is fattening	1(100.0%)	0(0.0%)	1(100.0%)
Just like that	17(58.6%)	12(41.4%)	29(100.0%)
I use it during exams only	3(42.9%)	4(57.1%)	7(100.0%)
Others	3(60.0%)	2(40.0%)	5(100.0%)
Total	**116(51.8%)**	**108(48.2%)**	**224(100.0%)**

χ^2=12.831, p=0.304

Table 6 shows the predictors of substance use using multinomial logistic regression analysis to. Age (AOR=0.895, C.I. = 0.851, 0.952) is associated with less risk of substance use. That is increase in unit age reduces the risk for involvement in substance use by 10.5%, while other factors strongly predict substance use at varying strengths.

Table 6: Predictors of substance use

Predictors of substance use			
Variable	Odds ratio	95%C.I.	p-value
Living with relatives	5.246	1.107, 24.865	0.037

Faculty 1: CHS	4.426	1.268, 15.445	0.020
Faculty 3: Arts	8.348	1.721, 40.499	0.008
Faculty 4: Education	3.776	1.209, 11.796	0.022
Faculty 6: Law	4.884	1.107, 21.554	0.036
Faculty 9: Social Science	4.527	1.246, 16.447	0.022
Age	0.895*	0.851, 0.952	0.014

*Less likely associations CHS: College of Health Sciences

Burden of risky sexual behaviour

One hundred and eighty-seven respondents (51.5%) have ever had sexual intercourse. One hundred and fifty-one respondents (41.6%) have been involved in one form of risky sexual behaviour or another. The mean age at sexual debut was 18.00 ± 3.79 (7 - 30) years. Comparison of the mean ages of male (17.98±4.07) and female (18.03±3.32) respondents at sexual debut did not show any significance (t=-0.080, p=0.936). 48.21% of the males and 52.05% of the females, who have experienced sex, had it below the age of 18 (χ^2=0.01, p=0.971). The overall mean number of sexual partners within the last 3 months was 2.50 ± 2.56 (0 - 30). Using independent t-test to compare the mean number of sexual partners within last 3 months, males (1.57 ± 1.80) and females (1.41 ± 3.55) did not differ significantly (t=0.394, p=0.694). (Table 7) Of the one hundred and eighty-one respondents who have had sexual experience, 88(48.6%) used it correctly 'always', while 27(14.9%) never used condom. Males were reported to have significantly used condom more consistently than females (χ^2=16.122, p=0.003).

Association between substance use and risky sexual behaviour

Thirty-one respondents ever failed to use protection as a result of consuming alcohol or using other substances, with males (83.9%) significantly involved than females (16.1%) (χ^2=8.635, p=0.003). Twenty respondents used alcohol before their previous sexual intercourse, 80.0% and 20.0% of whom were males and females respectively (χ^2=3.629, p=0.057). (Table 7)

Table 7: Risky Sexual Behaviour (n=187)

Risky Sexual Behaviour				
Variables	Male	Female	t-statistics	p-value
Age at sexual debut	17.98±4.07	18.03±3.32	-0.080	0.936
No. of sexual partners	1.57±1.80	1.41±3.55	0.394	0.694
Variables	Male (n=)	Female (n=)	χ^2	p-value
Ever had sex	112(60.50%)	73(39.50%)	2.179	0.149
Sex at <18 years	54(48.21%)	38(52.05%)	0.01	0.971
Failed to use protection	26(83.90%)	5(16.10%)	8.635	0.003*
Alcohol used before sex	16(80.0%)	4(20.0%)	3.629	0.057
Other substance before sex	8(80.0%)	2(20.0%)	1.710	0.191

*p-value <0.05

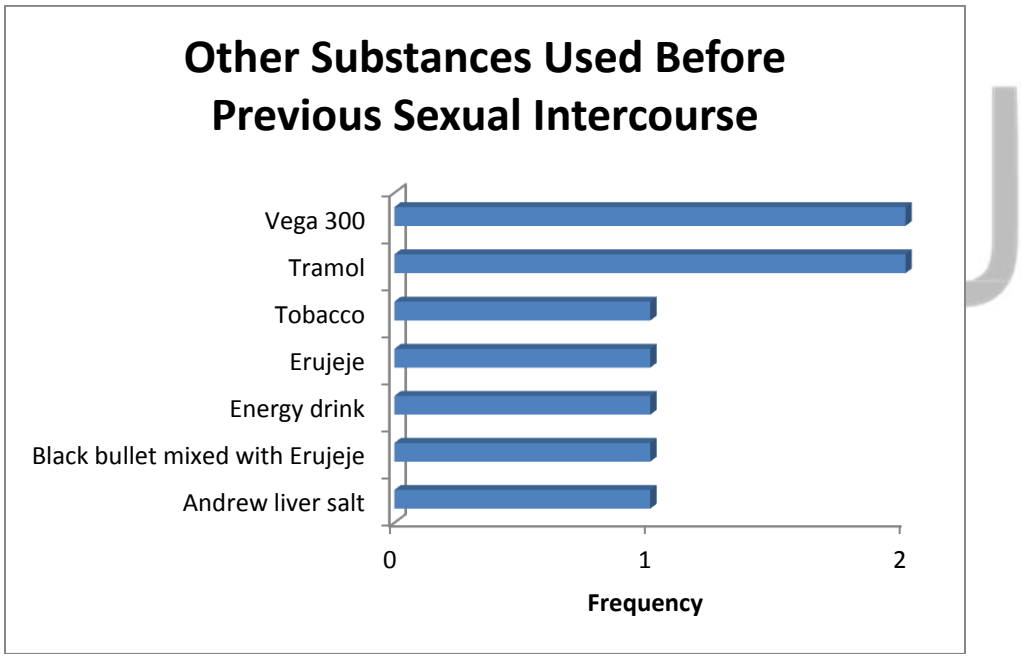


Fig. 2: Other substances used before previous sexual intercourse

Other substances used before previous sexual intercourse included Vega 300, “Erujeje”, black bullet mixed with “erujeje”, tramol, amongst others. (Fig. 4)

The predictors of risky sexual behaviours following multivariate logistic regression include marital status, accommodation status, age at sexual debut and substance use as shown in table 8. Increasing age (AOR=0.903, C.I. = 0.856, 0.953) and Faculty of law (AOR=0.174, C.I. = 0.035, 0.857) are both associated with low risk of indulging in risky sexual behaviours. (Table 8)

Table 8: Predictors of Risky Sexual Behaviour

Predictors of risky Sexual Behaviour			
Variable	Odds ratio	95%C.I.	p-value
Marital status	5.237	1.540, 5.848	0.014
Living with parents	2.475	1.128, 5.427	0.024
Living in students' hostel	2.921	1.543, 5.527	0.001
Age at sexual debut	1.271	1.129, 1.430	0.001
Use of other substances	3.763	3.763, 3.763	0.001
Faculty of Law	0.174*	0.035, 0.857	0.032
Age	0.903*	0.856, 0.953	0.001

*Less likely associations

Discussions

The study recorded a response rate of 97.1%. This was similar to what was obtained previously in the same institution,[16] due to similar methodology and the nature of the respondents, being University students. However, it was lower than a study with 100% and higher than another with 86.8% [17]. There were slightly more males than females as reported by similar Nigerian studies,[31, 19] unlike others [16, 17] that reported more females than males. The ages of respondents ranged between 16 - 38 years. This is similar to a previous study in the same University with an age range of 18-41 years.[16]. The males were significantly older, similar to what was obtained in the same population two years ago.[16] Studies from Northern parts of the country showed Islam as the more common religion as Islam is the predominant religion in that region.[18,19] Respondents hail from 35 states of the federation depicting the regulations guiding the admission

exercise in the University. Most of the respondents were from the North Central geopolitical zone and the FCT. Majority were single or never married and the remaining few were married as seen in most studies done among undergraduates.[16, 17, 18, 19] More of the respondents had fathers with tertiary education compared those who had mothers with tertiary education as seen in similar studies.[16]

In this study, majority of the male and about half of female respondents reported lifetime use of any psychoactive substances, and more males than females reported previous year substance use, and current substance use, with values significantly higher among males than females. These values were higher than those obtained in a previous study in the same university 2 years ago.[16] This is most likely because the previous study assessed only alcohol use among 3rd and 4th year students of six faculties only, while we studied nine other substances in addition to alcohol across 1st to 6th year students among all (10) faculties of the University. However, both studies used similar study design and sampling technique; and also showed significantly higher values among males. A study in Southwestern Nigeria reported a result with similar lifetime psychoactive substance use.[17] Studies from the Northwestern and Northeastern parts of the country showed remarkably lower values of lifetime substance use of 52.6% and 23.7% respectively[18,19], likely due to religious disposition in that part of the country. Previous year use in selected Private. This is probably due to differences in the socioeconomic status of the respondents compared to a public University like ours, making substances affordable and readily available. Lower values were reported in Nigerian secondary schools, with lifetime use of 33.8%.[20] The most commonly used substances identified in this study were coffee (38.8%),

energy drinks (33.9%), alcohol (30.3%) and kola nut (28.1%); which are similar to the findings of various studies.[9, 12, 16]

Sudanese study reported "curiosity" as a major reason for initiating substance use.[21] This is to show that reasons for initiating substance use among youth are principally the same all over the world. The predictors of substance use using multinomial logistic regression analysis were accommodation status and faculties while increasing age was associated with lower tendency for initiating substance use. We could not compare these findings with ours because some of the parameters were not featured in our study. Sudanese study showed male gender as the principal predictor for substance use,[21] unlike our study that showed the association not to be significant.

We found a prevalence of sexual experience of 51.5% and risky sexual activity of 41.6%, that is 80% of those who have ever experienced sex have been involved in one form of risky sexual behaviour or another. This is less than what was reported in Enugu [22] which could be due to different cultural backgrounds making it easier for the participants to report the true values of their sexual activities. Many studies reported a lower mean age at sexual debut compared to what we have.[22, 24] This is most likely due to the fact that the adolescents were the majority in those study populations. We also found that males significantly used condoms more consistently than females as reported by the Nigeria Demographic and Health Surveys (NDHS).[23]

Use of alcohol and other substances was associated with failure to use protection. However, this association was not significant. Similar studies also reported no significant association between these variables.[25] This is because there are contributions from other predictors of risky sexual behaviour that are required to give a significant association especially when most respondents used coffee and kola nut.

Similar to what was reported from University of Lagos, marital status, accommodation status, age at sexual debut and use of other substances (Erujeje, Vega 300, etc) were significant predictors of risky sexual behaviours.[25] On the other hand, respondents' age and faculty (Law) were both significantly associated with low risk of indulging in risky sexual behaviours. It is expected that as the respondents become older, their chances of indulging in risky sexual behaviours decreases significantly as the ability to make rational decisions and better judgment become enhanced. Similarly, a study from Osun State revealed that accommodation status, poverty and peer influence were significant predictors of risky sexual behaviours among undergraduates.[26]

Conclusion

The study has revealed a high burden of substance use and risky sexual behaviours among the students of University of Abuja. However, there was no statistically significant association between the two.

Recommendations

In view of the above findings, it is recommended that further studies need to be conducted to quantify the substances used and extent of the impact of substance use on students' lives. It is also recommended that researchers determine other deviant behaviours apart from risky sexual behaviours that are associated with substance use. Further studies will also enable planning and implementation of appropriate programmes and interventions to improve health and well-being of students.

References

1. Andualem D, Assefa S, Chalachew M. Assessment of Substance Use and Risky Sexual Behaviour among Haramaya University Students, Ethiopia. *Science Journal of Public Health*. 2014; 2(2): 102-110. doi:10.11648.
2. Foundation THJKF. Substance Use and Risky Sexual Activity: The Henry J. Kaiser Family Foundation2002.
3. Dawit A, Debela A, Dejene A, Abebe A, Mekonnen Y, Degefa A, et al. Is khat-chewing associated with HIV risk behaviour? A community-based study from Ethiopia. *African Journal of AIDS Research*. 2006; 5(1): 61-9.
4. Cloninger CR, Sigvardsson S and Bohman M. Alcoholism: Childhood personality predicts alcohol abuse in young adults. *Clinical and Experimental Research.* 1988; 12(1): 494-505.
5. Adekeye OA. Knowledge Level and Attitude of School Going Male Adolescents towards Drug Use and Abuse. *Kotangora Journal of Education. Kotangora, Niger State.* (2012); 12(1): 122-130.
6. Ekpenyong NS, Aakpege NY. Alcohol Consumption Pattern and Risky Behaviour: A Study of University of Port Harcourt. *IOSR Journal of Humanities and Social Science (IOSR-JHSS).* 2014; 19(3, 1): 25-32. Retrieved from www.iosrjournals.org
7. Smart L. Alcohol and human health. *Oxford: Oxford University Press.* 2007
8. Obot IS. The measurement of drinking patterns and alcohol problems in Nigeria. *Journal of Substance Abuse*. 2000; 12(1): 169-181.

9. Awoyinfa JO. An Investigation into the Incidence of Alcohol Usage and Abuse among Female Student of the University of Lagos, Nigeria, West Africa. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS).* 2012; 3(2):174-178.
10. Ukwayi JK, Ambekeh LU, Uwanede CC, Undelikwo VA. Alcohol abuse as a cause of poor academic performance among Social Science Students of the University of Calabar, Nigeria. *Mediterranean Journal of Social Sciences*, 2013; 4(1), 413-22.
11. Hingson R, Heeren T, Winter M, Wechsler H. Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24: changes from 1998 to 2001. *Annual Review of Public Health.* 2002; 26(1) 259-279.
12. Kypri K, Paschall MJ, Langley J, Baxter J, Cashell-Smith M, Bourdeau B. Drinking and alcohol-related harm among New Zealand university students: findings from a national Web-based survey. *Alcoholism: Clinical and Experimental Research*. 2009; 33(2): 307-314.
13. Chick CF, Reyna VF. A fuzzy trace theory of adolescent risk taking: Beyond self-control and sensation seeking. *The Adolescent Brain* 2012; (1) 379-428. Washington, DC: American Psychological Association.
14. Institute of Medicine & National Research Council. *The science of adolescent risk-taking: Workshop report.* Committee on the Science of Adolescence. Washington, DC: The National Academies Press. 2011.
15. Elkington, K. S., Bauermeister, J. A., & Zimmerman, M. A. Psychological distress, substance use, and HIV/STI risk behaviours among youth. *Journal of Youth and Adolescence.* 2010; 39(1): 514-527. doi:10.1007/s10964-010-9524-7

16. Chikezie UE, Uchendu I. U. Alcohol Use among Full-Time Students of the University of Abuja. *International Journal of Emergency Mental Healthand Human Resilience.* 2015; 17(1): 283-287.

17. Emmanuel OB, Adegboyega O, Akin A. Pattern of psychoactive substance among University students in South-Western Nigeria. *Journal of Behavioural Health.* 2013; 2(4): 334-342.

18. Yunusa F, Obembe A, Madawaki A, Asogwa F. A Survey of psychostimulant use among University students in North-Western Nigeria. *Nigerian Journal of Psychiatry.* 2011; 9(3): 40-45

19. Tawasu S, Prevalence of drug abuse among medical students of the University of Maiduguri. *Dissertation submitted to the National Postgraduate Medical College of Nigeria.* 8

20. Ekpenyong SN. Drug abuse in Nigerian schools: a study of selected secondary institutions in Bayelsa State, South-South Nigeria. *International Journal of Scientific Research in Education.* 2012; 5(3): 260-268.

21. Usman TO, Victor C, Abdulmoneim A, Mohammed H, Abdallah F, Ahmed A et al. Epidemiology of substance use among University students in Sudan. *Journal of Addiction.* 2016; 2016(2476164): 1-9.

22. Odimegwu OD. Ethnicity gender and risky sexual behaviours among Nigerian youths: an alternative explanataion. *Reproductive health.* 2017; 14(16).

23. Imaledo JA, Peterkio OB, Asuquo AQ. Pattern of risky sexual behaviours and associated factors among undergraduates students of the University of Port Harcourt. *Pan African Medical Journal.* 2012; 12(97): 01-09.

24. Kassa GM, Degu G, Yitayew M, Misaganaw W, Muche M, Demelash T, et al. Risky sexual behaviours and associated factors among Jiga High School and Preparatory School students, Amahara Region, Ethiopia. *Hindawi Publishing Corporation, International Scholarly Research Notices.* 2016; 2016(4315729): 1-8.

25. Bassey UM, Makinde B, Ajani IR, Olumide OM. Relationship between drug abuse and deviant behaviour among undergraduate students of University of Lagos, Nigeria. *American International Journal of Social Science.* 2013; 2(6): 63-69.

26. Yusuf FA. Predisposing factors influencing risky sexual behaviours as expressed by undergraduates in Osun State in Nigeria. *Proceedings of INCEDI 2016 Conference.* 2016; 591-599.

27. The official website of University of Abuja. Available from: *https://portal.uniabuja.edu.ng [Accessed 8th July 2017].*