



## Research Article

# Drug Use Intervention Needs among University Students

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### Abstract

**Objectives:** Use of psychoactive substances among adolescents and young adults is a universal problem and contributes enormous health burden. Many studies have determined the prevalence rates of psychoactive substances among university students but there is paucity of data on the prevalence of hazardous use and corresponding drug use intervention needs of the students. This study aimed to determine the two among university students.

**Methods:** The study design was cross-sectional survey. The World Health Organization's Alcohol, Smoking and Substance Involvement Screening Test was used to categorize the participants into no/low risk, moderate risk and high risk drug users among 5722 undergraduates.

**Results:** The mean age of the participants was 18.8 years. The commonly ever-used substances were alcohol (33.6%), Tobacco products (4.3%), Amphetamine or other stimulant (2.8%) and Opioids (2.6%); while the commonly used substances in the past three months were alcohol (11.7%), Opioids (1.4%) and Tobacco products (1.2%). None of students who participated used any drug at high risk level, requiring referral for intensive treatment; but 1.2% used at least one substance at moderate risk / hazardous level.

**Conclusions:** While all the students in the university need universal and selective preventive measures, at least 1.2% of the students need indicated preventive program against alcohol and drug use.

**Keywords:** Drug; Psychoactive substance use; Prevalence; Risk level; Intervention needs; Undergraduates; Nigeria

### Introduction

Alcohol and Drug use disorders are global problems. They contribute immensely to health burden among adolescents and young adults [1]. About 246 million (5.2%) people globally used illicit drugs in the past year. About twenty-seven million (0.6%) of the people aged 15-64 years suffer from problem drug use. Depending on the country, between 3.4% and 7% of the population aged 15-64 years used illicit drugs in the past year [2].

About 5% of the global burden of disease and injury is attributable to alcohol. Its harmful use is a component cause of more than 200 disease and injury conditions. It results in about 3.3 million deaths each year and 5.9% of all deaths worldwide are attributable to alcohol consumption [3]. Direct and second-hand consumption of Tobacco is a leading cause of preventable deaths in the world, with estimated 6 million people dying annually from the consumption. The consumption contributes to 7% and 12% of all female and males deaths worldwide [4].

For young people aged 20-24 years, alcohol use disorder is the highest risk factor (7.0%) for "healthy" life lost to disability and premature death, otherwise called Disability Adjusted Life Years (DALYs); while drug use disorders account for 2.7% [5]. Within this age group, alcohol and illicit drug use are responsible for 14% of total health burden [6].

According to the 2015 Global Burden of Disease data [7], the DALYs due to Drug use disorders (DUDs) relative to the DALYs due to HIV/AIDS increased sharply in the age group 15-19 years and peaked in the age group 20-24 years: Across all ages, the DALYs due to HIV/AIDS and DUDs were 904.75 and 229.4 per 100,000 respectively, giving a ratio of 10:3. The ratio was 10:5 in the age group 15 - 19 years. The peak was 10:7 in the age group 20-24 years. The relative health burden of DUDs and HIV/AIDS underscores the need for interventions targeted at Drug use among the adolescents and young adults between ages 15 and 24 years. This is approximately the age group of university undergraduates.

Interventions at a point in time for any disorder, including substance use among undergraduates, can either be preventive or treatment [8]. Preventive measures can be universal, selective or indicated [8,9]. Universal intervention is a measure applicable to the general population without the disorder and without identified increased risk of developing the disorder. A good universal intervention, like any other, must have benefit of reducing the risk of developing the disease and the benefit must significantly outweigh the intervention's risk of adverse effects and cost of implementation.

Selective intervention is applicable to a subpopulation with identified increased risk of developing the disease by reason of certain characteristics of the subpopulation, such as gender, social status and age. Indicated intervention is applicable for "persons who, on examination, are found to manifest a risk factor, condition or abnormality that identifies them, individually, as being at sufficiently high risk"[8] for developing the disorder.

These individuals do not yet have the disorder. They include people who do not have drug use disorder but are already experimenting with drugs [9]. In the field of drug use disorder prevention, depending on the level of involvement with drug use experimentation, indicated interventions differ. Simple feedback of their assessed level of risk, drug use information and advice may suffice for some of them, while a 10 to 15 minute systematic intervention is recommended for others [10]. Indicated intervention measure appears similar to treatment but operationally is not equal to the latter and taking note of the distinction between them is necessary to appropriately apply each [8].

In an effort to address the health burden of drug use among the students in a Nigerian university, each student was required to submit urine for drug screen as part of registration for the academic session from 2012. Those who screened positive were required to receive

“treatment” before returning to school. What form of “treatment” is needed by those who screened positive is a question that cannot be answered with only urine drug screen. Therefore, In 2013/2014 academic session, Alcohol Smoking and Substance Involvement Screening Test (ASSIST) was introduced alongside urine drug test to determine the appropriate drug use interventions needs of the students, which is the aim of this study.

## Materials and Methods

### Design and participants

The study was a cross-sectional survey conducted in 2013 among students in a Nigerian university in the south-west region of the country. It is part of a larger study reported elsewhere [11,12]. All registered students for the 2013/2014 academic session in the university were eligible to participate. The study was a census, but only those who gave written informed consent were recruited into the study, which was approved by the university’s research ethics committee.

### Variables

The variables assessed included socio-demographic data, lifetime and 3-month prevalence rates of 10 classes of psychoactive substances and the levels of risk associated with the use of the substances.

### Data sources/ measurement

**The socio-demographic questionnaire:** The socio-demographic questionnaire consisted of items on age, sex, marital status, ethnicity, religion and academic level.

**WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST, version 3):** The World Health Organization’s Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) version 3 [13] was used to elicit data on substance use and associated levels of risk. ASSIST is an interviewer-administered, self-report substance use instrument designed by the World Health Organization for use across countries and cultures at primary health care settings.

The ASSIST (v3.0) consists of eight items. The first 7 items cover ten substances: tobacco, alcohol, marijuana, cocaine, amphetamine-type stimulants, inhalants, sedatives, hallucinogens, opioids and other drugs. Item 1 elicits information on lifetime use of substances. The second item asks about frequency of use during the prior three months.

Items 3-5 and 7 elicit information in line with International Classification of Disease (CD-10) diagnostic criteria for substance dependence, namely, strong desire or urge to use, use leading to health problems, failure to do was normally expected because of substance use, and loss of control over substance use. Item 6 is about friend or relative’s expression of concern about the individual’s use of substances. The last item elicits information on non-medical use of drugs by injection.

The internal consistency is over 0.80 for the majority of domains and ASSIST items correlates well with similarly worded items of other questionnaires. The concurrent and construct validity properties are acceptable and the instrument can discriminate between substance use and abuse and between abuse and dependence [13]. In this study, the Cronbach’s alpha for Global continuum of substance risk scale was 0.812 while specific substance involvement scale ranged between 0.63

and 0.85. One of the advantages of ASSIST over most of other similar screening instruments is that it can classify participants into low, moderate and high risk groups and link appropriate intervention to each group [14].

**Quantitative variables:** Responses to the questions 1 and 2 on ASSIST were used respectively as measures of lifetime and three-month drug use prevalence. The substance involvement score for each substance (except tobacco) was determined by adding the scores of questions 2 to 7.

For tobacco products question 5 was excluded from the addition [13]. For all the substances (except alcohol), the Substance Involvement score of 0-3 indicates no/low risk level, 4-26 indicates moderate risk level while 27 and above indicates high risk level. For alcohol, 0-10 indicates low risk level, 11-26 indicates moderate risk level, and 27 and above indicates high risk level [14].

### Data analysis

Initial data exploration was done to check for values outside of expected range. Such values were corrected by referencing the corresponding ASSIST questionnaire. The missing values in the socio-demographic variables were not replaced. The data was analyzed with Statistical Package for Social Sciences (SPSS) version 16. Frequency, mean and standard deviation were used for descriptive analysis.

Weighting adjustment with sex variable was done using the university’s record of 41.76% males to 58.24% females of the registered students for 2013/2014 academic session. The weighting for each sex was calculated by dividing the population proportion by the sample proportion for the sex [15].

## Results

### Socio-demographic variables

The number of students who participated was 5938 but only 5722 could be analyzed. Their age range was 15-31 years. The weighted mean age was 18.8 years (sd=1.97). The mean age of the males (19.1 years) compare with that of females (18.6 years) was significantly higher ( $t=9.5$ ,  $df=5720084$ ,  $p<0.001$ ). As depicted in [Table 1](#), majority (78%) were aged 15-19 years, 58% were females, and each academic level, 100 to 400, contributed 18% - 25% of the participants.

### Lifetime and Past 3-month substance use

[Table 2](#) shows the prevalence rates of substance use by the students. The most commonly ever-used substance was alcohol (33.6%), followed by tobacco products (4.3%), Amphetamine-type stimulants (2.8%) and Opioids (2.5%). The lifetime prevalence of Cannabis was 2.1%. The most commonly used substance in the past three months was alcohol (11.7%), followed by Heroin/Morphine/Pain Medication (1.4%) and Tobacco products (1.2%).

### Drug use levels of risk

[Table 3](#) shows the levels of risk occasioned by the substance use. No participant used any drug at high risk level. Sixty-three (1.2%), 49 (1.0%) and 43 (0.7%) of the participants used alcohol, tobacco and cannabis at a moderate risk level (also called hazardous level), respectively.

Total = 5722				
Variable		N	% (Unweighted)	% (weighted)
Age group	15-19 years	4450	77.8	77.5
	20-24 years	1177	20.6	20.8
	> 24 years	95	1.7	1.7
Sex	Male	2006	35.1	41.8
	Female	3716	64.9	58.2
Marital status	Married	6	.1	.1
	Single	5716	99.9	99.9
Religion	Christianity	2796	48.9	48.0
	Islam	258	4.5	4.5
	Others	3	0.1	0.0
	No response	2665	46.6	47.5
Academic level	100 level and pre-degree	1421	24.8	24.6
	200 level	1132	19.8	19.8
	300 level	1245	21.8	21.8
	400 level	1051	18.4	18.4
	500 level	126	2.2	2.1
	No response	747	13.1	13.3

**Table 1:** Socio-demographic variables.

Total=5722						
	Lifetime			3-month		
	n	%	%	n	%	%
		(unweighted)	(weighted)		(unweighted)	(weighted)
Tobacco products	219	3.8	4.3	62	1.1	1.2
Alcoholic beverage	1834	32.1	33.6	627	11	11.7
Cannabis	104	1.8	2.1	30	0.5	0.6
Cocaine or Crack	14	0.2	0.3	7	0.1	0.1
Amphetamines or Stimulants	164	2.9	2.8	40	0.7	0.7
Inhalants	24	0.4	0.4	5	0.1	0.1
Sedatives or Sleeping Pills	99	1.7	1.8	40	0.7	0.7
Hallucinogens	6	0.1	0.1	1	0	0
Heroin, Morphine, Pain Medication	144	2.5	2.5	83	1.5	1.4
Other substances	29	0.5	0.5	12	0.2	0.2

**Table 2:** Lifetime and 3-month prevalence of substance use.

Total=5722						
	No / low risk			Moderate risk*		
	N	%	%	n	%	%
			(weighted)			(weighted)
Tobacco products	5673	99.1	99	49	0.9	1
Alcoholic beverage	5659	98.9	98.8	63	1.1	1.2
Cannabis	5688	99.4	99.3	34	0.6	0.7
Cocaine or Crack	5718	99.9	99.9	4	0.1	0.1
Amphetamines or Stimulants	5689	99.4	99.4	33	0.6	0.6
Inhalants	5719	99.9	99.9	3	0.1	0.1
Sedatives or Sleeping Pills	5695	99.5	99.5	27	0.5	0.5
Hallucinogens	5722	0	0	0	0	0
Heroin, Morphine, Pain Medication	5686	99.4	99.4	36	0.6	0.6
Other substances	5717	99.9	99.9	5	0.1	0.1

**Table 3:** Levels of risk according to alcohol and drug use \*Otherwise called hazardous use.

## Discussion

### Prevalence of substance use

The lifetime prevalence rates of alcohol and drugs in this study are similar or more or less than corresponding rates reported from other parts of the world. Among adolescents aged 15-19 years in Canada, lifetime prevalence rate of tobacco is 4% [16]. Among adolescents aged 14-18 years in US, lifetime rate of tobacco is 32.3%, alcohol is 63.2%, cannabis is 38.6%, cocaine is 5.2%, heroine is 2.1, methamphetamine 3.0% and inhalant is 7.0% [17]. In Kosovo among people aged 17 to 19 years old, lifetime rates of tobacco, cocaine, cannabis, heroin, sedatives and inhalants are 38.3%, 1.1%, 6.3%, 0.7%, 9.6%, and 6.1% respectively [18]. In an Ethiopian university, the rates for tobacco and alcohol are 11.4% and 25.1% respectively among students mostly (90%) within the age 18-24 years [19]. Among college students aged 18-24 years in a National Brazilian sample, lifetime rates of alcohol, tobacco, cannabis, inhalants, cocaine, sedatives, opiate analgesic and amphetamine are 89.3%, 45.5%, 26.9%, 21.6%, 5.3%, 1.1%, 4.6%, and 10.0% respectively [20]. Reports on substance use among Nigerian university students indicate varying prevalence rates: Alcohol (66.0%), Marijuana (44.0%), and Diazepam (32.9%) were the most commonly ever-used substances in university located in the Eastern part of Nigeria [21]; Mild stimulants (67.9%), alcohol (38.0%) and sedatives (27.0%) were the most commonly ever-used in a university in the Northern part of the country [22].

Many studies reported one-month prevalence rates of drug use among different populations. Few studies have reported 3-month substance use prevalence rate, fewer among young students and adolescents [23].

### Level of risk and treatment need

Depending on the substance, rate of hazardous use ranged from 0.1 to 1.2, alcohol being the substance with the highest rate, followed by tobacco. This figures is very low compared to rates of hazardous use reported among the 18-24 year-old in Brazil which ranged between 0.1 and 24.3% for different substances [20]. It is also low compared with 7.3% (88/1213) hazardous alcohol use among youths and adults in a rural community in Nigeria. The relative low rate observed might be due in part to the “zero tolerance” policy to alcohol and drug use implemented by the university authority about 4 years prior to this study [12]. Another plausible explanation for the low rate is that due to disability attributable to alcohol and drug high level of use, students actively affected were likely absent from school programme.

From this study, about 1 in 100 students needs indicated intervention for alcohol and tobacco. For cannabis, it is about 7 in a thousand students. The intervention need for the rest of the students is universal preventive measure. An effective indicated intervention measure is brief intervention [14] which has been implemented in many settings [23,24]. In situation in which there is a need for an intervention that is more intensive than brief intervention but which will allow academic program alongside, co-curricular drug abuse treatment is an option [12].

### Strengths

The study used an international instrument which offers the opportunity to compare the results across countries. The screening with ASSIST along with the integral client feedback is a form of universal intervention. For the students at moderate level of risk, brief intervention, an indicated preventive measure was administered.

## Conclusions

At least 1.2% of the students need indicated preventive intervention. The rest of the population, need, in addition to universal preventive intervention measure, selective intervention due to the relative health burden of drug misuse of 7:10 that of HIV/AIDS among people aged group 19-24-year.

## Recommendations

Universal and selective substance use preventive intervention programme is recommended for all the university students. Indicated preventive measure, that is Brief intervention program, needs to be planned to take care of student who screened positive for hazardous use of psychoactive substance, as is implemented among students in an American university counseling center [24].

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