

WESTERN NIGERIA JOURNAL OF MEDICAL SCIENCES (WNJMS)

PREVALENCE, PATTERN AND CORRELATES OF SUBSTANCE USE AMONG ADOLESCENTS IN SELECTED PUBLIC SECONDARY SCHOOLS, IN ADO EKITI, SOUTHWEST NIGERIA

Western Nigeria Journal of Medical Sciences

ORIGINAL ARTICLE

Publication Date: December 31, 2023; Vol. 6, Issue 2

PREVALENCE, PATTERN AND CORRELATES OF SUBSTANCE USE AMONG ADOLESCENTS IN SELECTED PUBLIC SECONDARY SCHOOLS, IN ADO EKITI, SOUTHWEST NIGERIA

Solomon OA¹, Solomon OO², Ajiboye AS³, Adeyemo TA⁴

- 1. Family Medicine Department, Ekiti State University, Ado Ekiti, Nigeria
- 2. Community Medicine Department, Ekiti State University, Ado Ekiti, Nigeria
- 3. Psychiatry Department, Ekiti State University Teaching Hospital, Ado Ekiti, Nigeria
 - 4. Administration Department, Ekiti State University Teaching Hospital, Ado Ekiti.

Correspondence to: Solomon OA, Family Medicine Department, Ekiti State University, Ado Ekiti, Nigeria. **Telephone:** +234-8033470483; **E-mail:** abide7000@gmail.com

ABSTRACT

Introduction: This study sought to determine the prevalence, pattern and factors associated with substance use among adolescents in three secondary schools within Ado Ekiti, Ekiti state, Nigeria.

Methods: The study was a descriptive study conducted in Ado Local Government of Ekiti State. A total of 249 adolescents were sampled from three secondary schools selected using multistage sampling technique. An adopted questionnaire (ASSIST) developed by the World Health Organization was used in screening adolescents for substance use. Data was analyzed with SPSS version 22, and results presented with texts, tables and figures. Inferential statistics were done using chi square and regression analysis.

Results: One hundred and forty-five (58.2%) of the respondents were males, 123 (49.4%) were between the ages of 14 - 16 years with mean age of 14.40 ± 2.13 years. More than half of the adolescents, 134 (53.8%), were in senior secondary school. Overall prevalence of substance use was 108 (43.4%) while 53 (21.3%) use alcohol. The respondents in school 2 were three times at risk of substance use with AOR of 3.49 and p value of 0.001

while the risk was generally less with those in senior secondary school with AOR of 0.48 and p value of 0.010.

Conclusion: The type of school adolescent attends and the class were highly predictive of exposure to substance use. Health education on substance use should start at an early stage in secondary schools while there should be high index of suspicion to aid timely detection and treatment.

Key Words: Substance Use, Prevalence, Pattern, Adolescents, Secondary School, Southwest Nigeria

INTRODUCTION

Adolescence is a demanding developmental period for young people as they go through many transitions such as biological, cognitive, social, and psychological transitions. This period brings about rapid change marked by the onset of puberty, a growth spurt, and the development of secondary characteristics.^{1,2} Socially, adolescents tend to spend more time with their peers and move their family from and environments due to their schooling or social interests. More so, they try to develop their identity while living in the same household

Date Submitted: 24 February, 2023

Date Accepted: 27 June, 2023

with parents and grandparents. Their mode of thinking changes from concrete operational thinking to abstract thinking. Psychologically, adolescents develop a sense of identity and a self-concept. Owing to different challenging developmental transitions experienced, they tend to practice risky behaviours (like substance use) capable of bringing harm to their physical, medical, psychological, and social well-being.^{3,4,5}

Adolescence period has been recognized as a time when most substance use begins.^{5,6} Ninety percent of substance use disorders begin when youths are between 12 and 20 years of age.⁷ Early age onset use of psychoactive drugs among young people interrupts the key process of their brain development. Young people are more likely to experience substance use disorder more than older age groups due to developmental processes still ongoing in their brains.^{4,8} To prevent the early onset of substance use among young people, it is highly necessary to assess and organize prevention for those yet to commence substance use and treatment program for those already using psychoactive substances, as it has been documented that if treatment starts at adolescent stage, recovery is quicker and sustainable.9

Different patterns of drug abuse have been documented in Nigeria from different part of the country. From North central, cannabis was the highest 46.7% followed by codeine 27.8%; in the Southeast: alcohol 29%, tobacco 14.4%; and alcohol 8.9%, tobacco 2.5%, cannabis 2.2% and codeine 1.5% in the Southwest of Nigeria. 10-12

Most adolescents are practicing risky behaviours due to unsettled family systems. Conflicts in families may result in marital discord, divorce, single parenting, absence of paternal/maternal control, poorer supervision for the children, children deprivation, etc. All these manifestations serve as risk factors capable of increasing the likelihood of adolescent substance use. Substance abuse problems have been linked to negative

relationship between parents and children, and inadequate social support.¹³ Children of alcoholics have been observed to have a greater risk of becoming involved with drug abuse than do children of those who do not take alcohol buttressing the effect of inadequate social support coupled with peer associations, stressful life events, societal pressures, and physical or sexual abuse among other factors as major contributors to the increasing burden of substance use by adolescents.^{14,15}

Substance use among adolescents is a great challenge to our society leading to unrest, social, political and community tensions.¹⁶ According to WHO, substance abuse has been identified as one of three major health risks can lead to devastating consequences for adolescents. Substance abuse can lead to major debilitating illness and even death; it is also related to accidents, violence, and loss of productivity. 16 Other risky behaviours interrelated to substance abuse, include eating disorders, delinquency and conduct disorders such as, rape and unprotected sexual intercourse that could result in sexually transmitted infections. 16,17,18,19.

There are a lot of co-morbid conditions, such as memory loss, liver cirrhosis, heart disease, stomach ulcers, intestinal cancers, osteoporosis, and impotence in men and infertility in women associated with substance abuse. 9,20 Similarly, academic performance of adolescents using drugs will be badly affected due to behaviours like missing classes, truancy, and addiction they exhibit. 20

Despite all the harms caused by substance abuse, counseling facilities and rehabilitation centers are scarce in Nigeria thereby increasing the burden on already strained medical and psychiatry facilities. ²¹ The awareness of the burden of substance use within the community may stimulate the interest of family physicians and others practicing within primary settings with consequent higher index of suspicion on the

symptoms and effects of substance use which hitherto are under-recognized among young people in most primary care settings in Nigeria, with its resultant physical, emotional, and social harms among adolescents.²² This study therefore aimed to determine the prevalence, pattern of substance use and its associated socio-demographic factors among adolescents in some selected secondary schools within Ado Local Government of Ekiti State, Nigeria.

METHODS

Study Area

This study was carried out in Ado Local Government, one of the 16 Local Government Areas (LGAs), and the capital of Ekiti State, Nigeria. The population of Ado Local Government based on the projection from 2006 population census and annual growth rate of 3% is 446,749.²³ Ado LGA could be regarded as a one town local government with many farm settlements. The people of Ado Ekiti are of the Ekiti sub-ethnic group of Yoruba.

Study design

The study was a descriptive cross-sectional study.

Study Population

Adolescents were recruited from three (3) secondary schools within Ado Local Government located in the three broad areas of development within the Local Government viz traditional /ancient settlement (school 1), currently developing settlement (school 2) and 2nd generation settlements that have grown into slum (school 3). The students were aged between 10 and 19 years.

Inclusion Criteria

Assenting adolescents below 18 years whose parents consented to their participation in the study and those 18 years and above who consented were recruited into the study.

Exclusion Criteria

Adolescents observed not to be psychologically stable as determined by the clinical Psychologist in the team.

Sample Size Determination

The Leslie Fisher's formula for estimating single proportions was used to calculate the sample size.²⁴ Assuming a 95% level of confidence, 17.3% was used as an estimated proportion of adolescents using drugs from a previous study.¹² Given a maximum acceptable difference from true proportion of 5%, the minimum estimated sample size was 219. However, an additional 10% was added (in case of incompletely filled questionnaires) and 241 was the final minimum sample size calculated for the study. A total of 270 respondents eventually participated.

Sampling Technique

Multistage sampling technique was used. Stage one was random selection of three public secondary schools out of the existing seventeen, by balloting. Stage two was random selection of a class each from the arms in the school by balloting. Stage three was the selection of the adolescents in the class. This was a proportionate sampling done through systematic random sampling.

Data Collection Instrument and Procedure

WHO questionnaire, Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) was adopted to screen all the participants.²⁵ Sociodemographic data and data on the family type and drug(s) use was also collected. The questionnaire was pretested in another secondary school different from the selected ones, and it was distributed by trained research assistants and was self-administered by the participants, to enhance confidence of the respondents to freely declare their substance usage without shame or guilt.²⁶

Participants exposure to psychoactive drugs were graded according to above-mentioned questionnaire and based on their scores at the end of the screening, they were classified into not using, low, moderate, and high use of psychoactive drugs.

Participants were asked if they were using any of these nine (9) substances (tobacco, alcohol, cannabis, cocaine, amphetamine, inhalants, sedatives, hallucinogens, opioids) and any other specific ones apart from the listed nine. After indicating use of any of the 9 substances, further questions were then asked on: frequency of use of the substance mentioned, frequency of strong desire or urge to use the substance mentioned, frequency of the use of the substance mentioned resulted to health, social, legal, or financial problem in the past 3 months.

The answers were in five options (Never, once a monthly, twice a month, weekly, daily). Each answer had different points attached to it. For each substance the scores were added up, the minimum score was 0 while the maximum score was 39. Based on the score for each participant, they were classified into three different risk levels (Low, Moderate and High). Zero to 3 was classified as low risk, 4-26 as moderate risk, 27+ as high risk with the exception of alcohol that is classified as follows, 0-10 low risk, 11-26 moderate risk and 27+ as high risk.²⁵

Data Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 22. Univariate variables were presented in form of tables and graph while bivariate variables were presented in form of two-bytwo tables. Association between sociodemographic variables and the expected outcome measures (prevalence of substance use) was determined using the Chi-square test; adjusted odd ratio was also determined through regression analysis. Level of significance was put at p value < 0.05.

Ethical Issues

Ethical clearance was obtained from Ekiti State University Teaching Hospital Ethics and

Research Committee. Approval was gotten from the Ministry of Education and the authority of the schools. The respondents 18 years and above consented while those younger than 18 years also got their parent assent; questionnaires were filled anonymously. Confidentiality of information collected was ensured by the researchers.

RESULTS

Sociodemographic characteristics

Out of the 270 adolescents that participated, a total of 249 adolescents filled the questionnaire appropriately and this resulted in 92.2% response rate. One hundred and forty-five (58.2%) were males, 123(49.4%) were between the age of 14-16 years (mid adolescent) with mean age of 14.40 ± 2.13 . More than half of the adolescents were in senior secondary school, 134(53.8%). The population of sampled adolescents was highest in School 1, 51.0%. (Table 1)

Family History

The adolescents from polygamous family were 47(18.9%) while 49(19.7%) were from single parents. Thirteen (5.2%) of their parents were divorced while 25(10.1%) were separated. Among the respondents, 20(8.0%) of them had parents that were using drugs. (Table 2)

Pattern of Substance use

Alcohol is the most used psychoactive substance by the respondents 53(21.3%), followed by cocaine 36(14.5%) and sedatives 31(12.4%); the least used drug among the adolescents in this study was tobacco 6(2.4%), (Table 3). The prevalence of substance use in this study was 108 (43.4%) (fig.1), and they were classified as low (25.0%), moderate (69.4%) and high (5.6%) risk of substance use (fig. 2).

Table 1: Sociodemographics of the Respondents

CHARACTERISTICS Frequency Percentag			
	n = 249	1 cr centuge	
Gender			
Male	145	58.2	
Female	104	41.8	
Age (Years)			
10 - 13	88	35.3	
14 - 16	123	49.4	
17 – 19	38	15.3	
X Mean Age	$14.40 \pm 2.$	134	
Respondents' school			
School 1	127	51.0	
School 2	38	15.3	
School 3	84	33.7	
Respondents' Class			
Junior Secondary School	115	46.2	
Senior Secondary School	134	53.8	
Fathers' Level of Education			
Above secondary School	190	76.3	
Secondary School	47	18.9	
Below secondary School	6	2.4	
No formal education	6	2.4	
Mothers' Level of Education			
Above secondary School	180	72.3	
Secondary School	51	20.5	
Below secondary School	6	2.4	
No formal education	12	4.8	
Fathers' Occupation			
Government employed	104	41.8	
Private employed	6	2.4	
Self employed	136	54.6	
Unemployed	3	1.2	
Mothers' Occupation			
Government employed	74	29.7	
Private employed	3	1.2	
Self employed	163	65.5	
Unemployed	9	3.6	
- ·			

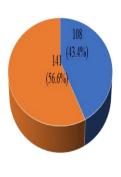
Factors associated with Substance Use

Looking at the association between sociodemographic characteristics, family history and prevalence of substance use with bivariate analysis, using Chi square test, tables 4 & 5 revealed that early adolescents, aged 10 – 13 years in junior classes use psychoactive drugs more than the older ones, however this was not statistically significant (Table 4)

The respondents' class, type of schools, parental marital status, and those whose mothers use psychoactive substances were statistically significant out of all the factors assessed. The prevalence of substance use was higher among the students in junior secondary school 65(56.5%), compared to those in senior secondary school 43(32.1%); p-value of 0.001.

Table 2: Family History of the Respondents

CHARACTERISTICS	Frequency (249)	Percentage (100%)
Is any of your parent using any psychoactive drug?		
Yes	20	8.0
No	229	92.0
Which of them is using		
psychoactive drug?		
None	229	92.0
Father	15	6.0
Mother	3	1.2
Both parents	2	0.8
Are you living with your parents?		
Yes	224	90.0
No	25	10.0
Family type		
Polygamous family	47	18.9
Monogamous family	153	61.4
Single parent	49	19.7
Parental marital status		
Together	197	79.1
Divorced	13	5.2
Separated	25	10.1
One parent is late	14	5.6
Family size		
> 4	45	18.1
≤ 4	204	81.9
\overline{X} : 5.85 ± 1.992		



■ Yes ■ No

Figure 1: Prevalence of Substance Use among adolescents

Table 3: Pattern of Drug Use

Variables	Frequency	Percentage
Tobacco		
Yes	6	2.4
No	243	97.6
Alcohol		
Yes	53	21.3
No	196	78.7
Cannabis		
Yes	9	3.6
No	240	96.4
Cocaine		
Yes	36	14.5
No	213	85.5
Amphetamine		
Yes	19	7.6
No	230	92.4
Inhalants		
Yes	18	7.2
No	231	92.8
Sedatives		
Yes	31	12.4
No	218	87.6
Hallucinogens		
Yes	11	4.4
No	238	95.6
Opioids		
Yes	11	4.4
No	238	95.6

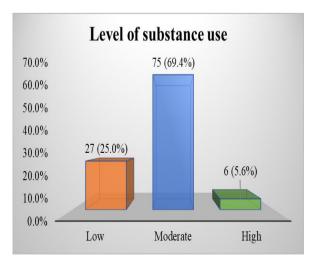


Fig 2: Levels of Adolescents Substance Use

Prevalence of Substance Use

The prevalence of substance use was higher in School 3, 56 (66.7%), compared to schools 1 and 2; 40, (31.5%) and 12 (31.6%) respectively, with p value of 0.001. The prevalence was higher among those whose mothers were using drugs (100%), followed by those whose fathers were using drugs (60%); this was statistically significant with p value of 0.027. As shown in table 5, 10 (76.9%) of the adolescents whose parents were divorced used psychoactive substances, this is statistically significant with p value of 0.028.

All the factors that were significant at the level of bivariate analysis (respondents' class, school, parental marital status), were imputed in the regression analysis. Results showed that the adolescents in the senior secondary school were less likely to use substances compared to those in the junior class with AOR of 0.43 and p value of 0.010. Those in school 2 were about three times more likely to use psychoactive substance compared with those in school 1 and this was statistically significant with p-value of 0.001.(Table 6)

DISCUSSION

The proportion of adolescents sampled in the study was highest in School 1, 51.0% this is because school 1 located in the traditional settlement has highest student population that almost quadrupled and doubled the populations of Schools 2 and 3 respectively. The highest prevalence of substance use among respondents in School 3 could be due to its location in the slum and the nearness of the school to a market.

The prevalence of psychoactive substance abuse in the sampled population was 43.4%. This is similar to the finding in a systematic review of 27 studies across sub-Saharan

Table 4: Association between sociodemographic characteristics and pattern of substance use

Characteristics	Substance Use		χ2	p-value
	Yes N = 108(%)	No N = 141 (%)		
Gender				
Male	62 (42.8)	83 (57.2)	0.053	0.817
Female	46 (44.2)	58 (55.8)		
Age (Years)				
10 – 13	42 (47.7)	46 (52.3)	1.399	0.497
14 – 16	52 (42.3)	71 (57.7)		
17 – 19	14 (36.8)	24 (63.2)		
Respondents' Class				
JSS	65 (56.5)	50 (43.5)	15.041	0.001*
SSS	43 (32.1)	91 (67.9)		
Respondents' school				
School 1	40 (31.5)	87 (68.5)		
School 2	12 (31.6)	26 (68.4)	28.222	0.001*
School 3	56 (66.7)	28 (33.3)		
Fathers' Level of Education				
Above secondary school	83 (43.7)	107 (56.3)		
Secondary school	21 (44.7)	26 (55.3)	2.097	0.552**
Below secondary school	1 (16.7)	5 (83.3)		
No Formal Education	3 (50.0)	3 (50.0)		
Mothers' Level of Education				
Above secondary school	78 (43.3)	102 (56.7)		
Secondary School	24 (47.1)	27 (52.9)		
Below secondary school	2 (33.3)	4 (66.7)		
No Formal Education	4 (33.3)	8 (66.7)	1.039	0.792**
Fathers' Occupation				
Government employed	44 (42.3)	60 (57.7)		
Private employed	3 (50.0)	3 (50.0)	0.814	0.846**
Self employed	59 (43.4)	77 (56.6)		
Unemployed	2 (66.7)	1 (33.3)		
Mothers' Occupation				
Government employed	35 (47.3)	39 (52.7)		
Private employed	1 (33.3)	2 (66.7)		
Self employed	70 (42.9)	93 (57.1)		
Unemployed	2 (22.2)	7 (77.8)	2.368	0.500**

^{*}Significant p value < 0.05, ** Likelihood Ratio

Africa, which reported a prevalence rate of 41.6%.²⁷ This is quite higher than the lifetime use and current use of 17.3% and 11.7%

respectively in the study by Obadeji et al. in the same region of the country.¹² This could be as a result of increasing substance use

Table 5: Association between family history and prevalence of drug use

Is any of your parent using any psychoactive drug?	N = 108 (%)	N = 141 (%)		
any psychoactive drug?				
Yes	12 (60.0)	8 (40.0)	2.448	0.118
No	96 (41.9)	133 (58.1)		
Which of them is using				
psychoactive drug?				
None	96 (41.9)	133 (58.1)		
Father	9 (60.0)	6 (40.0)	9.154	0.027*
Mother 3	3 (100)	0 (0)		
Both parents (0.0)	2 (100.0)		
Are you living with your				
parents?				
Yes	95 (42.4)	129 (57.6)	0.842	0.359
No 1	13 (52.0)	12 (48.0)		
Family type				
Polygamous family	20 (42.6)	27 (57.4)		
Monogamous family	65 (42.5)	88 (57.5)	0.316	0.854
Single parent	23 (46.9)	26 (53.1)		
Parental marital status				
Together 8	84 (42.6)	113 (57.4)		
Divorced	10 (76.9)	3 (23.1)		
Separated	11 (44.0)	14 (56.0)	9.095	0.028*
One parent is late	3 (21.4)	11 (78.6)		
Family size (people)				
≤4	83 (40.7)	121 (59.3)	3.319	0.068
> 4	25 (55.6)	20 (44.4)		

^{*}Significant p value

Solomon OA et al. - Prevalence, Pattern and Correlates of Substance Use among Adolescents in selected Public Secondary Schools, in Ado Ekiti, Southwest Nigeria

Yes 65 (56.5) 43 (32.1)	No 50 (43.5)					
	50 (43.5)					
	50 (43.5)					
43 (32.1)		1				
	91 (67.9)	0.477	0.254 - 0.894	0.021*		
I						
40 (31.5)	87 (68.5)	1				
12 (31.6)	26 (68.4)	3.486	1.842 - 5.870	0.001*		
56 (66.7)	28 (33.3)	2.539	0.987 – 6.536	0.053		
Which of them is using psychoactive drug?						
96 (41.9)	133 (58.1)	1				
9 (60.0)	6 (40.0)	0.000	0.000	0.999		
3 (100.0)	0 (0.0)	0.000	0.000	0.999		
0 (0.0)	2 (100.0)	0.000	0.000	0.999		
tus						
84 (42.6)	113 (57.4)	1				
10 (76.9)	3 (23.1)	0.422	0.106 – 1.679	0.221		
11 (44.0)	14 (56.0)	0.123	0.018 - 0.846	0.033*		
3 (21.4)	11 (78.6)	0.302	0.062 - 1.468	0.138		
	40 (31.5) 12 (31.6) 56 (66.7) ing psychoact 96 (41.9) 9 (60.0) 3 (100.0) tus 84 (42.6) 10 (76.9) 11 (44.0)	40 (31.5) 87 (68.5) 12 (31.6) 26 (68.4) 56 (66.7) 28 (33.3) ing psychoactive drug? 96 (41.9) 133 (58.1) 9 (60.0) 6 (40.0) 3 (100.0) 0 (0.0) tus 84 (42.6) 113 (57.4) 10 (76.9) 3 (23.1) 11 (44.0) 14 (56.0)	40 (31.5) 87 (68.5) 1 12 (31.6) 26 (68.4) 3.486 56 (66.7) 28 (33.3) 2.539 ing psychoactive drug? 96 (41.9) 133 (58.1) 1 9 (60.0) 6 (40.0) 0.000 3 (100.0) 0 (0.0) 0.000 tus 84 (42.6) 113 (57.4) 1 10 (76.9) 3 (23.1) 0.422 11 (44.0) 14 (56.0) 0.123	40 (31.5) 87 (68.5) 1 12 (31.6) 26 (68.4) 3.486 1.842 – 5.870 56 (66.7) 28 (33.3) 2.539 0.987 – 6.536 Ing psychoactive drug? 96 (41.9) 133 (58.1) 1 9 (60.0) 6 (40.0) 0.000 0.000 3 (100.0) 0 (0.0) 0.000 0.000 10 (0.0) 2 (100.0) 0.000 0.000 tus 84 (42.6) 113 (57.4) 1 10 (76.9) 3 (23.1) 0.422 0.106 – 1.679 11 (44.0) 14 (56.0) 0.123 0.018 – 0.846		

^{*}Significant p value

among adolescents in recent times, and especially among those in junior secondary schools, and it calls for urgent attention. This finding is lower compared to the range of 49.8% and 66% in other studies within the country. Environmental and sociocultural differences might account for this. Out of the 108 (43.4%) substance users, 25% were classified as low risk while 69.4% were classified to be moderately at risk. This reveals that at this level of abuse the

consequences of substance abuse (health, social and psychological harms) will be rampant among the adolescents. For example, the harm psychoactive substances cause to the brain is higher among the adolescents than young adults because the brain of adolescent is not fully developed.³⁰

Substance use among adolescents is of public health importance. As seen in this study, all the psychoactive substances assessed (tobacco, alcohol, cannabis, cocaine, amphetamine, inhalants, sedatives, hallucinogens, opioids) were being used among the respondents in consonant with the findings from other researches. 31, 32 Thus, it should not be assumed that adolescents use only some certain psychoactive substances while neglecting others. Surprisingly, in this study, cocaine, a supposedly expensive and non-frequent/illegal substance was part of the psychoactive substances being used by the respondents in higher proportion. 32

This finding on cocaine use among adolescents, 14.5%, is quite high compared with other works documented in this environment. 11,33 The increase observed could be because the respondents were free to express their use of psychoactive substances without fear, shame or guilt.²⁷ It was also possible for the respondents to take it for "Banku", the inferior cocaine used locally or as a result of social desirability which is a common bias in cross-sectional study.³⁴ This calls for a quick intervention by all stakeholders because cocaine is highly addictive and presents significant acute and long-term medical and psychological effects.32

Considering the pattern of psychoactive substance use among the adolescents in this study, legal psychoactive substance alcohol ranks higher than the illegal psychoactive substances (cocaine, cannabis etc.). This study showed 21.3% use alcohol, followed by cocaine 14.5%. About one in ten of the adolescents used sedatives. Many adolescents find it easy using sedatives because they are readily available in pharmacy or countertops, and people may not notice when they use them.³⁵ For example, the prescription drugs/sedatives do not smell like cannabis or cigarettes that may easily attract attention. So, the easy access to, and odourless nature of sedatives, may prompt the adolescent to use the sedatives more than other psychoactive substances. Alcohol is a legal substance for age 18 and above in Nigeria but binge drinking has been reported among people under age 18.^{36,37} In Nigeria, alcoholic substances are packaged in sachets which are less expensive, and give chance for the underage to buy, carry them around and use them at will.

Age contributes to the problematic pattern of psychoactive substance use among the adolescents. Respondents of 10 -13 years of age (47.7%) use psychoactive substances more than adolescents of 14 - 16 years of age (42.3%) and 17 - 19 years of age (36.8%), though these differences were not statistically significant. These figures revealed early age of onset which studies have shown has implication on the health, social functioning and psychology of the early adolescents.³⁸ Worthy of note is that population of adolescents aged 10 - 13 years that were engaged in psychoactive substances use (47.7%) in this study, which was higher than those of 17 - 19 years of age (36.8%). Though this is contrary to the results by Ogunsola et al. where it was reported that with increase in age the prevalence increases.²⁸ The reason for this difference is not farfetched; the subjects in this study were both from junior and senior secondary school while their subjects were from senior secondary school only. This finding shows that younger adolescents get involved in psychoactive substances use more than older adolescent and this may be due to ignorance, immature adolescent brain, poor judgement, or misconception at this age.³⁸ This brings to fore the need for health education intervention at a much earlier age.

Respondents' class, parental marital status, and type of school were predictive factors for psychoactive substance use among the respondents in this study. These factors were statistically associated with problematic pattern of psychoactive substance use. Respondents' class significantly contributes to the pattern of substance use among the adolescents. In this study, the risk of substance use in the population of adolescents in Junior Secondary School was higher

compared to those in Senior Secondary School. This finding is signal of early age of onset of substance use especially among vounger adolescents as was also found by National Institute on Drug Abuse.⁶ This is in contrast to the findings by Adade in Ghana where the adolescents in upper grade were more likely to abuse drug.³⁹ The difference might be because the younger adolescents in this study lack the social support from parents and will power at this young age to say no to the peer pressure. The prevalence of drug abuse was higher in school 3 in this study. School 3 is located in the urban slum and beside a market, this location most likely might be responsible for this high prevalence.

Additionally, parental marital status significantly contributed to the problematic pattern of substance use among adolescents. This study shows that adolescents whose parents were divorced or separated use psychoactive substances more than those whose parents were staying together, and this was statistically significant. This reveals that the presence of both parents at home with good social support and proper supervision is prevent protective and psychoactive substance use tendency in the adolescents.⁴⁰

CONCLUSION

This study revealed that early adolescents, age 10-13 years in junior classes use psychoactive drugs more than the older ones and the school environment also had influence on the prevalence of psychoactive substance use. This study showed that adolescents with divorced or separated parents were more involved with substance use which is an indication that both parents intentionally watching out for the welfare of their children is protective.

RECOMMENDATIONS

Based on the findings in this study the following recommendations are given:

- i. People that relate with the adolescents (schools, parents, religious body, youth friendly settings and government) should see psychoactive substance use among adolescent as health and social harms that need urgent and reasonable actions.
- ii. Family Physicians and those providing health care for adolescents should be intentional in eliciting history of psychoactive substances use at all encounters.
- iii. As shown in this study, there was early onset of substance use among the adolescents; so well planned, catch them young programmes, should be rolled out to prevent early onset of substance use in our society.
- iv. Drug free clubs should be raised in schools and communities to create awareness on dangers of substance abuse.
- v. Peer educators can be generated from the drug free clubs to help educate and impart positively on other adolescents.
- vi. In tackling substance abuse problems, attention should not only be paid to illegal/hard drugs, legal drugs that people abuse should also be prioritized in curbing substance abuse in our community.
- vii. Parenting styles that will encourage good lifestyle should be exhibited by the parents.

LIMITATIONS

This study was conducted among selected public secondary schools within Ado Ekiti, hence may not be readily generalized.

ACKNOWLEDGEMENT

The authors appreciate the research assistants that joined in the collection of data and the students and staff of the schools that were part of this study.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FUNDING

This work was fully funded by the authors.

REFERENCES

- 1. Adetokunbo S, Elegbede OE, Durowade KA, Ojo O, Ibirongbe DO, Solomon OO et al. Parental Knowledge and Attitude of Adolescent Sexuality Education in Rural and Urban Communities of Ekiti State, Nigeria. Afr J Health Sci. 2022; 35(2):158-68.
- **2.** Solomon OO, Emmanuel EE, Solomon OA, Amu EO, Amodu O. Association between High Body Mass Index and High Blood Pressure among Adolescent in Ado-Ekiti, Ekiti State, Nigeria. J Pub Health Res. 2017; 7(4):85–90.
- 3. Bonnie RJ, Backes EP, Alegria M, Diaz A, Brindis CD. Fulfilling the promise of adolescence: realizing opportunity for all youth. J Adol Health. 2019; 65(4):440-2.
- 4. Akanbi MI, Augustina G, Theophilus AB, Muritala M, Ajiboye AS. Impact of Substance Abuse on Academic Performance among Adolescent Students of Colleges of Education in Kwara State, Nigeria. J Edu Pract. 2015; 6(28):108-12.
- 5. Obiechina GO, Isiguzo BC. Curbing the menace of drug use among secondary school students in Nigeria. Euro J Res Reflect Educ Sci. 2016;4(1):53-64.
- 6. Degenhardt L, Stockings E, Patton G, Hall WD, Lynskey M. The increasing global health priority of substance use in young people. The Lancet Psychiatry. 2016; 3(3):251-64. doi: 10.1016/S2215-0366(15)00508-8

- 7. Johnston LD, Miech RA, O'Malley PM, Bachman JG, Schulenberg JE, Patrick ME. Monitoring the Future National Survey Results on Drug Use, 1975-2018: Overview, Key Findings on Adolescent Drug Use. Institute for Social Research. 2019.
- 8. Volkow ND, Koob GF, Croyle RT, Bianchi DW, Gordon JA, Koroshetz WJ, et al. The conception of the ABCD study: From substance use to a broad NIH collaboration. Developmental cognitive neuroscience. 2018; 32:4-7. doi:10.1016/j.dcn.2017.10.002
- 9. Saldana L. An integrated intervention to address the comorbid needs of families referred to child welfare for substance use disorders and child neglect: Fair pilot outcomes. Child welfare. 2015; 94(5):167.
- 10. Otorkpa OJ. Pattern of Drug Abuse among Adolescents in Lokoja Metropolis of Kogi State, Nigeria. JALSI. 2019; 20(3):1-9. DOI: 10.9734/JALSI/2019/v20i330084
- 11. Anyanwu OU, Ibekwe RC, Ojinnaka NC. Pattern of substance abuse among adolescent secondary school students in Abakaliki. Cogent Med. 2016; 3:1. http://dx.doi.org/10.1080/2331205X.2016.12 72160
- 12. Obadeji A, Kumolalo BF, Oluwole LO, Ajiboye AS, Dada MU, Ebeyi RC. Substance Use among Adolescent High School Students in Nigeria and Its Relationship with Psychosocial Factors. J Res Health Sci. 2020; 20(2):e00480. doi: 10.34172/jrhs.2020.14
- 13. Brown SM, Shillington AM. Childhood adversity and the risk of substance use and delinquency: The role of protective adult relationships. Child Abuse & Neglect. 2017; 63:211-21. DOI: 10.1016/j.chiabu.2016.11.006
- 14. Hoffmann JP, Jones MS. Cumulative stressors and adolescent substance use: A review of 21st-century literature. Trauma, Violence, & Abuse. 2022; 23(3):891-905. DOI: 10.1177/1524838020979674

- 15. Zeng X, Chen Y. Associations of deviant peer affiliation with youths' substance use disorder abstention motivation: The mediating role of perceived social support and the moderating role of collective identity. Journal of ethnicity in substance abuse. 2022; 21(2):402-24. DOI: 10.1080/15332640.2020.1777608
- 16. Khanh N. Drugs of Abuse and Addiction-Overview and Current Status. J Neurol Neurol Disord. 2018; 4(1):106.
- 17. Quiterio N, Harris BL, Borba CPC, Henderson DC. Substance use and sexual risk behaviours amongst in-school youth and young adults living in Liberia. African Journal of Drug and Alcohol Studies. 2013; 12(2):75-91.
- 18. Hingson RW, Zha W, Weitzman ER. Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18-24, 1998-2005. J Stud Alcohol Drugs Suppl. 2009; (s16):12-20. doi: 10.15288/jsads. 2009. s16:12.
- 19. 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. Annu Rev Public Health. 2005; 26:259-79. doi: 10.1146/annurev.publhealth.26.021304.1446
- 20. Lai HM, Cleary M, Sitharthan T, Hunt GE. Prevalence of comorbid substance use, anxiety and mood disorders in epidemiological surveys, 1990–2014: A systematic review and meta-analysis. Drug and alcohol dependence. 2015; 154:1-3. DOI: 10.1016/j.drugalcdep.2015.05.031
- 21. Arria AM, Caldeira KM, Bugbee BA, Vincent KB, O'Grady KE. The academic consequences of marijuana use during college. Psychology of Addictive Behaviors. 2015; 29(3):564. doi: 10.1037/adb0000108

- 22. Dickard N, Downs T, Cavanaugh D. Recovery/Relapse Prevention in Educational Settings For Youth With Substance Use and Co-occurring mental health disorders. 2010 Consultative Sessions Report. U.S. Department of Education: Working Draft. 2011. Available at https://www.ojp.gov/ncjrs/virtuallibrary/abstracts/recoveryrelapse-preventioneducational-settings-youth-substance-use (Date accessed 14.01.2023)
- 23. Oyedepo O, Makinde J, Oluyemisi O. Inter-Trip Characteristics Model for Ado-Ekiti Township, Southwest Nigeria. An International Multi-Disciplinary Journal, Ethiopia. 2010; 4(2):1-14.
- 24. Jeckel JF, Katz DL, Elmore JG, Wild DMG, Lucan SC. The study of causation in epidemiologic investigation and research. In: Jeckel JF, ed. Epidemiology, Biostatistics and Preventive Medicine, 3rd Edn. Philadelphia, PA: Saunders Elsevier. 2007; pp64–6.
- 25. WHO. The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

https://www.who.int/publications/i/item/978 924159938-2 (Date accessed 05.06.2022)

- 26. Ndumwa HP, Njiro BJ, Francis JM, Kawala T, Msenga CJ, Matola E, et al. Prevalence and factors associated with potential substance use disorders among police officers in urban Tanzania: a cross-sectional study. BMC psychiatry. 2023; 1623(1):175.
- 27. Olawole-Isaac A, Ogundipe O, Amoo E O, Adeloye D. Substance use among adolescents in sub-Saharan Africa: A systematic review and meta-analysis. South African Journal of Child Health 2018; 12(2b):79-83.

doi:10.7196/SAJCH.2018.v12i2b.1524

28. Ogunsola OO, Fatusi AO. Risk and protective factors for adolescent substance

- use: a comparative study of secondary school students in rural and urban areas of Osun State, Nigeria. Int J Adol Med Health. 2016; 29(3): /j/ijamh.2017.29.issue-3/ijamh-2015-0096/ijamh-2015-0096.xml. doi: 10.1515/ijamh-2015-0096
- 29. Opakunle T, Opakunle O, Toki D, Aloba O, Nwozo C. Drug abuse among Nigerian high-school adolescents: Exploring the relationship with problematic internet use, suicidality, anxiety, depression, and self-esteem. Int J Med Health Dev 2022; 27:277-84. doi: 10.4103/ijmh.IJMH_17_22
- 30. Partnership to End Addiction (2022). Adolescent brain development, teen behaviour, and preventing drug use. Available online from: https://drugfree.org/article/brain-development-teen-behavior (Accessed 4/4/2023).
- 31. Jiloha RC. Prevention, early intervention, and harm reduction of substance use in adolescents. Indian J Psychiatry. 2017; 59(1):111-118. doi: 10.4103/0019-5545.204444
- 32. Ryan SA. Cocaine Use in Adolescents and Young Adults. Pediatr Clin North Am 2019; 66(6):1135-1147. doi: 10.1016/j.pcl.2019.08.014
- 33. Adesida SA, Quadri MO, Adedeji AM. Use of psychoactive substances among students in a Nigerian University: An imperative for intervention programs. Scientific Africa. 2022; 16(1):1131; https://doi.org/10.1016/j.sciaf.2022.e01139
- 34. Latkin CA, Edwards C, Davey-Rothwell MA, Tobin KE. The relationship between social desirability bias and self-reports of health, substance use, and social network factors among urban substance users in Baltimore, Maryland. Addict Behav. 2017; 73:133-136. doi: 10.1016/j.addbeh.2017.05.005

- 35. Algren MH, Deen L, Tolstrup JS, Thygesen LC. Associations between healthrisk behaviours and non-condom use among 28,620 Danish students: a cross-sectional study. The European Journal of Contraception & Reproductive Health Care. 2022; 27(1):45-52
- https://doi.org/10.1080/13625187.2021.2005 018
- 36. Ajayi AI, Owolabi EO, Olajire OA. Alcohol use among Nigerian university students: prevalence, correlates and frequency of use. BMC Public Health 2019; 19;752. https://doi.org/10.1186/s12889-019-7104-7
- 37. Dawson DA, Goldstein RB, Chou SP, Ruan WJ, Grant BF. Age at first drink and the first incidence of adult-onset DSM-IV alcohol use disorders. Alcohol Clin Exp Res. 2008; 32(12):2149-60. doi: 10.1111/j.1530-0277.2008.00806.x
- 38. Winters KC, Arria A. Adolescent Brain Development and Drugs. Prev Res. 2011; 18(2):21-24.
- 39. Adade AE, Owusu Ansah K, Dey NEY, Arthur-Holmes F, Duah HO, Pascal A. Exposure to substance and current substance among school-going adolescents in Timor-Leste. PLOS Glob Public Health. 2022; 2(8): e0000797. https://doi.org/10.1371/journal.pgph.0000797
- 40. Shek DT, Zhu X, Ma CM. The influence of parental control and parent-child relational qualities on adolescent internet addiction: A 3-year longitudinal study in Hong Kong. Frontiers in Psychology. 2018; 9:642. https://doi.org/10.3389/fpsyg.2018.0064