

## **SUBSTANCE ABUSE AMONG SECONDARY SCHOOL STUDENTS IN AN URBAN AND A RURAL LOCAL GOVERNMENT AREA IN ANAMBRA STATE, NIGERIA.**

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### **ABSTRACT**

**INTRODUCTION:** Substance abuse refers to the harmful or hazardous use of psychoactive substances including alcohol, opioids, cannabinoids, hypnotics, cocaine, hallucinogens, tobacco, caffeine, nicotine. A psychoactive (psychotropic) substance is any substance which after absorption has influence on mental process, both cognitive and affective. Several studies have shown that young people are increasingly engaging in substance abuse to their detriment.

**AIM:** This study was carried out to assess the pattern of substance abuse among secondary school students in an urban and a rural Local Government Area of Anambra State, Nigeria.

**METHODOLOGY:** It was a Comparative Descriptive Study. Multistage sampling was applied in selecting 212 students (108 from secondary schools in the urban LGA and 104 from secondary schools in the rural LGA.) an self administered questionnaire was used to interview the

respondents. Data was analysed using SPSS version 20. The level of significance was set at  $p < 0.05$ .

**RESULTS:** Two hundred and twelve questionnaires were shared out and all were retrieved giving a response rate of 100.0%. Of all the respondents, 50.9% were from the urban L.G.A and 49.1% were from the rural L.G.A. Majority of students (67%) belong to the 14-17year age group. All the respondents (100%) reported that they knew what substance abuse meant. The commonest source of knowledge was their teachers (70.2% in the rural L.G.A.) and (42.6% in the urban L.G.A.). Forty three (39.8%) of the urban respondents have taken or sniffed any drug/substance while 36 (34.6%) of the rural respondents have taken or sniffed any substance however the difference was not statistically significant ( $X^2=1.898$ ,  $p=0.387$ ). A higher proportion of the rural respondents (47.2%) abuse alcohol compared with the urban respondents (37.2%), also a higher proportion of the urban respondents (7.0%) abuse cigarette compared with the rural respondents (2.8%). This difference was statistically significant ( $X^2 = 3.988$ ,  $p = 0.040$ ). Majority of both the urban (41.9%) and the rural (44.4%) respondents were introduced by their friends. This difference was not statistically significant ( $X^2 = 0.257$ ,  $p = 0.612$ ).

**CONCLUSION:** Substance abuse exists among secondary school students in both the urban and the rural areas in Anambra State of Nigeria, even though the students know what substance abuse meant, they still engage in the practice. Public health education on the substance abuse should be intensified among adolescents in both the urban and the rural areas of Anambra State.

## INTRODUCTION

Substance abuse refers to the harmful or hazardous use of psychoactive substances including alcohol, opioids, cannabinoids, hypnotics, cocaine, hallucinogens, tobacco, caffeine, nicotine<sup>1</sup>. A psychoactive (psychotropic) substance is any substance which after absorption has influence on mental process, both cognitive and affective. These influences could be stimulative, suppressive, hallucinogenic.

Young people start to use substances singly or in combination at early ages and they report many reasons for using them<sup>2</sup>. The critical period of adolescence is marked by several physical, psychological and social changes. One of these changes in the adolescent period is

experimentation. The socio-medical phenomenon of drug use and abuse among adolescents remain among the most critical issues facing our society today<sup>3</sup>.

This behaviour has been found to lead to the trying out of new experiences such as drugs, sex, sometimes with dire consequence for the adolescent. This behaviour warrants urgent scrutiny in Nigeria as studies carried out over the last two decades have identified adolescents as a major group involved in the misuse of psychoactive substances<sup>4</sup>.

In many urban areas, psychoactive substances can be easily obtained from kiosks, bars, restaurants, and street vendors. With an increase in demand and ever growing population of users, human trafficking and associated crimes are rising. In many countries, psychoactive substance use appears closely linked to an increase in availability and access to the substances by a large proportion of the community<sup>4</sup>. Intoxication, accidental or violent injury, self-harm, sexually transmitted diseases, teenage pregnancy, abortion and psychiatric disorder are on the increase in our world today<sup>5</sup>. Substance abuse has both psychological, health, and social effects to the individual. In 2002, the world health organization estimated that 140 million people were alcohol-dependent and another 400 million suffered alcohol related problems<sup>6</sup>. In 2008, the mortality due to tobacco smoking was estimated to be more than 5million deaths annually<sup>7</sup> and by 2020, it is projected to be 10 million<sup>8</sup>. A study among students in Poland showed that 99.5% of students used alcohol. There was statistically higher frequency of beer consumption in males than in females<sup>9</sup>. The overall rate of smoking was found to be 29.6% among adolescent students in Kolkata, India while 37% of males and 13.5% of females were found to be current smokers<sup>10</sup>. In a study done in Enugu, Nigeria, among secondary school adolescents, prevalence rate of substance abuse was 71.7%. About 82% (81.5%) of the adolescent substance users were males against 18.4% that were females, giving a male-female ratio of approximately 4:1<sup>11</sup>.

This study was carried out to assess the pattern of substance abuse among secondary school students in Nnewi North and Ekwusigo Local Government Areas of Anambra State.

## **METHODOLOGY**

### **STUDY AREA**

This study was conducted in secondary schools in Nnewi North Local Government Area and Ekwusigo Local Government Areas of Anambra state , Nigeria.

Nnewi North is an urban Local Government Area in Anambra State. South-east Nigeria. Nnewi is the only town in Nnewi North L.G.A. It has four villages (sub-town) that make up the one-town local government which includes: Otolu, Uruagu, Umudim and Nnewi-ichi<sup>12</sup>. It has an estimated population of 391,227 according to the 2006 census of the Federal Republic of Nigeria. The city spans over 1,096.9 square miles (2789km<sup>2</sup>)<sup>12</sup>. It is predominantly inhabited by businessmen.

Ekwusigo is a rural local government Area in Anambra state, South-east Nigeria. Towns that make up the local government include: Ozubulu, Oraifite, Ichi, and Ihemboi<sup>12</sup>. It has an estimated population of 158,429 according to the 2006 census of the Federal republic of Nigeria<sup>12</sup>.

### **STUDY POPULATION**

The population of study included every student in all the secondary schools in Nnewi North and Ekwusigo local Government Areas of Anambra state.

### **STUDY DESIGN**

It was a Comparative descriptive study.

#### SAMPLE SIZE CALCULATION

The minimum sample size was calculated using the formula<sup>13</sup>

$$n = \frac{2z^2pq}{d^2}$$

where:

n= minimum sample size

d= degree of accuracy desired = 0.05

z= Standard normal deviate = 1.96 at 95% confidence level

p= proportion of secondary school students in the target population who have abused psychoactive substances. The prevalence rate of substance abuse was 6.5% in a study done in Dopoma Municipality, Tanzania<sup>14</sup>.

Thus  $p = 6.5/100 = 0.065$

q= proportion of persons in the population without factors under study

thus  $q = 1 - p$

$$= 1 - 0.065$$

$$= 0.935$$

Therefore  $n = \frac{2(1.96^2) \times 0.065 \times 0.935}{0.05^2}$

$$= \frac{2 \times 3.84 \times 0.065 \times 0.935}{0.0025}$$

$$= \frac{0.466752}{0.0025}$$

=186.7 approximately 187

Applying expected attrition of 10%

$187 \times 10/100$

=18.7 approximately 19

The calculated minimum sample size=  $187 + 19 = 206$

Therefore the minimum sample size for the study was 206 students, giving 103 students per LGA.

#### SAMPLING TECHNIQUE

Multistage sampling technique was applied as follows:

In Nnewi North LGA, there were 8 public secondary schools and 43 approved private secondary schools while in Ekwusigo LGA, there were 8 public secondary schools and 18 approved private secondary schools.

Stage 1: By simple random sampling Nnewi North LGA was selected out of the 7 urban LGAs in Anambra State. Also by simple random sampling Ekwusigo LGA was selected out of the 14 rural LGAs of Anambra State.

Stage 2: Got the lists of secondary schools in Nnewi North LGA( 8 public schools and 43 approved private secondary schools) and got the lists of secondary schools in Ekwusigo LGA(8 public schools and 18 approved private secondary schools).

Worked out the ratio and the ratio was 2:1

Making it 4 secondary schools to be selected from Nnewi North LGA and 2 secondary schools to be selected from Ekwusigo LGA.

Did simple random sampling and selected the 4 schools in Nnewi North LGA which were: Queen of Angels secondary school, Christ the Way secondary school, Maria Regina comprehensive secondary school and Okongwu Memorial Grammar school. In the rural LGA (Ekwusigo) simple random sampling was used to select 2 secondary schools: Ozubulu Community secondary school and Ozubulu Girls' secondary school.

Stage 3: In Nnewi North, the number of students sampled in each school was calculated thus:  $103/4 = 26$  students (because there were 4 schools). In Ekwusigo LGA, the number of students sampled in each school was calculated thus  $103/2=52$  students (because there 2 schools).

Stage 4: In Nnewi North LGA; in each school the number of the students sampled per class was calculated thus:  $26/6= 4$ students (because there were 6 classes in each school). Thus 4 students were randomly selected from each class and the remaining 2 were added to the 2 highest classes. Making it 4 students for J.S.S.1- S.S.S.1 students and 5 students for S.S.S.2 and S.S.S.3 students, and a total of 104 students in the LGA.

In Ekwusigo LGA, the number of students to be sampled in each class was calculated thus  $52/6= 8$  students. Thus 8 students were randomly selected from each class and the remaining 6 were evenly distributed to all the classes. Making it 9students selected from each class and a total 108 students sampled in the LGA.

Stage 5: The class register was used as sampling frame for the balloting in order to get the individual students in each of the classes.

## STUDY INSTRUMENT

The study instrument was a self administered questionnaire. It was designed by the researchers. The questionnaire was divided into 4 sections:

Section A: Personal data

Section B: Knowledge about the substances

Section C: Substances used and circumstance of use

Section D: Family and social history

## INCLUSION CRITERIA

The study involved all secondary school students, J.S.S. 1 to S.S.S 3 students in Nnewi North and Ekwusigo Local Government Areas of Anambra state who gave their consent.

## DATA ANALYSIS

Data was analysed using SPSS version 20. Frequencies and percentages were determined. Chi square test of independence was used to determine association between categorical variables. P value less than 0.05 was considered statistically significant.

## ETHICAL CONSIDERATION

Ethical approval for the study was sought and obtained from the Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC). Permission for the study was obtained from the management of the schools. Each respondent also gave his/her consent before he/she was interviewed.



## RESULTS

Two hundred and twelve questionnaires were shared out and all were retrieved giving a response rate of 100.0%.

Table 1: Socio-demographic characteristics of the respondents.

		Local Govt Area					
		Urban		Rural		Total	
		Frequency	%	Frequency	%	Frequency	%
Age (years)	10-13	19	17.6	27	26.0	46	21.7
	14-17	71	65.7	71	68.3	142	67.0
	18-20	18	16.7	6	5.8	24	11.3
	Total	108	100.0	104	100.0	212	100.0
Sex	Male	56	51.9	28	26.9	84	39.6
	Female	52	48.1	76	73.1	128	60.4
	Total	108	100.0	104	100.0	212	100.0
Class	JSS 1	16	14.8	18	17.3	34	16.0
	JSS 2	16	14.8	16	15.4	32	15.1
	JSS 3	16	14.8	19	18.3	35	16.5
	SSS 1	19	17.6	18	17.3	37	17.5
	SSS 2	20	18.5	18	17.3	38	17.9
	SSS 3	21	19.4	15	14.4	36	17.0
	Total	108	100.0	104	100.0	212	100.0
State of origin	Abia	2	1.9	2	1.9	4	1.9
	Anambra	71	65.7	83	79.8	154	72.6
	Ebonyi	5	4.6	5	4.8	10	4.7
	Imo	9	8.3	3	2.9	12	5.7
	Enugu	18	16.7	7	6.7	25	11.8

	others	3	2.8	4	3.9	7	3.3
	Total	108	100.0	104	100.0	212	100.0
Religion	Christianity	107	99.1	104	100.0	211	99.5
	Islam	1	0.9	0	0.0	1	0.5
	ATR	0	0.0	0	0.0	0	0.0
	Total	108	100.0	104	100.0	212	100.0
Father's highest educational level	Primary	23	21.3	33	31.7	56	26.4
	Secondary	42	38.9	36	34.6	78	36.8
	Tertiary	38	35.2	32	30.8	70	33.0
	no education	5	4.6	3	2.9	8	3.8
	Total	108	100.0	104	100.0	212	100.0
Father's occupation	Banker	2	1.9	2	1.9	4	1.9
	Clergy	0	0.0	1	1.0	1	0.5
	Artisan	14	13.0	13	12.5	27	12.7
	Trading	57	52.8	59	56.7	116	54.7
	civil servant	13	12.0	14	13.5	27	12.7
	Farming	4	3.7	2	1.9	6	2.8
	Driver	8	7.4	6	5.8	14	6.6
	Professionals	10	9.2	7	6.7	17	8.0
	Total	108	100.0	104	100.0	212	100.0
Mother's highest educational level	Primary	18	16.7	19	18.3	37	17.5
	Secondary	47	43.5	52	50.0	99	46.7
	Tertiary	41	38.0	33	31.7	74	34.9
	no education	2	1.9	0	0.0	2	0.9
	Total	108	100.0	104	100.0	212	100.0
Mother's	Banker	4	3.7	1	1.0	5	2.4

occupation	None	2	1.9	2	1.9	4	1.9
	Artisan	4	3.7	4	3.8	8	3.8
	civil servant	11	10.2	15	14.4	26	12.3
	Professionals	11	10.2	6	5.8	17	8.0
	Farming	3	2.8	0	0.0	3	1.4
	Trading	73	67.6	76	73.1	149	70.3
	Total	108	100.0	104	100.0	212	100.0

Table 1 shows the socio-demographic characteristics of the respondents. Table1 shows that 50.9% of respondents were from the urban L.G.A and 49.1% were from the rural L.G.A. and majority of students (67%) belong to the 14-17year age group.

**Table 2. Knowledge of respondents regarding substance abuse**

		Local Govt Area				X <sup>2</sup>	p-value
		Urban		Rural			
		Frequency	%	Frequency	%		
Do you know what substance abuse means?	Yes	108	100.0	104	100.0		
	No	0	0.0	0	0.0		
	Total	108	100.0	104	100.0		
If yes, what is your source of knowledge?	Radio	7	6.5	2	1.9	19.874	0.003
	Television	6	5.6	5	4.8		
	Newspaper	3	2.8	4	3.8		
	Friends/peers	19	17.6	10	9.6		
	Parents	11	10.2	5	4.8		
	Teachers	46	42.6	73	70.2		

	Internet	16	14.8	5	4.8		
	Total	108	100.0	104	100.0		

Table 2 shows the knowledge of the respondents regarding substance abuse. All the respondents (100%) reported that they knew what substance abuse meant. The commonest source of knowledge was their teachers (70.2% in the rural L.G.A.) and (42.6% in the urban L.G.A.).

**Table 3: Substances identified by the respondents as substances that can be abused.**

	Local Government Area				
		Urban		Rural	
		Frequency	%	Frequency	%
Alcohol	Yes	96	88.9	96	92.3
	No	12	11.1	8	7.7
	Total	108	100.0	104	100.0
Nicotine	Yes	96	88.9	86	82.7
	No	12	11.1	18	17.3
	Total	108	100.0	104	100.0
Marijuana	Yes	99	91.7	99	95.2
	No	9	8.3	5	4.8
	Total	108	100.0	104	100.0
Kolanut	Yes	21	19.4	29	27.9
	No	87	80.6	75	72.1
	Total	108	100.0	104	100.0
coffee/caffeine	Yes	36	33.3	42	40.4
	No	72	66.7	62	59.6

	Total	108	100.0	104	100.0
Cocaine	Yes	99	91.7	94	90.4
	No	9	8.3	10	9.6
	Total	108	100.0	104	100.0
solution (glue)	Yes	31	28.7	30	28.8
	No	77	71.3	74	71.2
	Total	108	100.0	104	100.0
Others	Yes	9	8.3	14	13.5
	No	99	91.7	90	86.5
	Total	108	100.0	104	100.0

Table 3 shows the substances identified by the respondents as substances that can be abused. Substances identified by the respondents included alcohol, cigarette, marijuana and cocaine.

**Table 4: Prevalence of substance abuse among the respondents.**

		Local Govt Area				X <sup>2</sup>	P
		Urban		Rural			
		Frequency	%	Frequency	%		
Have you ever used any of the substances?	yes	43	39.8	36	34.6	1.898	0.387
	no	65	60.2	68	65.4		
	Total	108	100.0	104	100.0		

Table 4 shows the prevalence of substance abuse among the respondents. Forty three (39.8%) of the urban respondents have taken or sniffed any drug/substance while 36 (34.6%) of the rural

respondents have taken or sniffed any substance however the difference was not statistically significant ( $X^2=1.898$ ,  $p=0.387$ ).

**Table 5. Types of substances used by the respondents.**

		Local Govt Area				X <sup>2</sup>	p-value
		Urban		Rural			
		Frequency	%	Frequency	%		
Alcohol	Yes	16	37.2	17	47.2	3.988	0.040
	No	27	62.8	19	52.8		
	Total	43	100.0	36	100.0		
Nicotine/cigarette	Yes	3	7.0	1	2.8		
	No	40	93.0	35	97.2		
	Total	43	100.0	36	100.0		
Marijuana (indian hemp)	yes	1	2.3	1	2.8		
	no	42	97.7	35	97.2		
	Total	43	100.0	36	100.0		
Kolanut	yes	23	53.5	26	72.2		
	no	20	46.5	10	27.8		
	Total	43	100.0	36	100.0		
Coffee/Caffeine	yes	28	65.1	13	36.1		
	No	15	34.9	23	63.9		
	Total	43	100.0	36	100.0		
Cocaine	Yes	0	0.0	0	0.0		
	No	43	100.0	36	100.0		

	Total	43	100.0	36	100.0		
solution (glue)	yes	2	4.7	0	0.0		
	no	41	95.3	36	100.0		
	Total	43	100.0	36	100.0		
others substances	yes	2	4.7	0	0.0		
	no	41	95.3	36	100.0		
	Total	43	100.0	36	100.0		

Table 5 shows that a higher proportion of the rural respondents (47.2%) abuse alcohol compared with the urban respondents (37.2%), also a higher proportion of the urban respondents (7.0%) abuse cigarette compared with the rural respondents (2.8%). This difference was statistically significant ( $X^2 = 3.988$ ,  $p = 0.040$ )

**Table 6: The person that introduced respondents to substance abuse.**

Person	Local Government				$X^2$	p-value
	Urban		Rural			
	Frequency	%	Frequency	%		
Friends	18	41.9	16	44.4	0.257	0.612
Father	7	16.3	6	16.7		
Mother	2	4.7	1	2.8		
Siblings	2	4.7	3	8.3		
Relation	10	23.3	8	22.2		
Others	4	9.3	2	5.6		
Total	43	100.0	36	100.0		

Table 6 shows the persons that introduced respondents to the substances they abuse. Majority of both the urban (41.9%) and the rural (44.4%) respondents were introduced by their friends. This difference was not statistically significant ( $X^2 = 0.257$ ,  $p = 0.612$ ).

Table 7: Reasons for abusing substances (multiple responses).

	Local Government				X <sup>2</sup>	p-value
	Urban		Rural			
	Frequency	%	Frequency	%		
To keep awake	26	60.5	22	61.1	1.427	0.20
To elevate mood	11	25.6	11	30.6		
To enable reading	26	60.5	22	61.1		
To feel among	8	18.6	4	11.1		
To satisfy friends	5	11.6	3	8.3		
To satisfy urge	7	16.3	3	8.3		
To overcome tiredness	13	30.2	9	25.0		
Curiosity	6	14.0	5	13.9		
Others	2	4.7	0	0.0		

Table 7 shows the reasons given by the respondents for abusing substances. The commonest reason given by both the urban (60.5%) and the rural (61.1%) respondents was “to keep awake”. This difference in proportion was not statistically significant ( $X^2 = 1.427$ ,  $p = 0.20$ ).

## DISCUSSION

This study was carried out in six (6) secondary schools. There were 212 respondents. There were 108 respondents from the urban schools, while there were 104 respondents from the rural schools. Out of all the respondents, 84 (39.6%) were males while 128 (60.4%) were females. All the respondents (100%) knew the meaning of substance abuse. The commonest source of knowledge was their teachers (42.6% for urban respondents) and (70.2% for the rural respondents). This difference was statistically significant. This shows that teachers have a very large role to play in the character moulding of secondary school students.



The prevalence of substance abuse was 39.8% among the urban respondents and 34.6% among the rural respondents. However the difference was not statistically significant. A higher prevalence (71.1%) was reported among secondary school students in Enugu, Nigeria.<sup>11</sup>

The commonly used substances among the urban respondents were coffee or caffeine (65.1%), kolanut (53.5%), alcohol (37.2%), cigarette (7.0%), glue (4.7%) and other substances (4.7%), marijuana (2.3%), while those for the rural respondents were kolanut (72.2%), alcohol (47.2%), coffee or caffeine (36.1%), marijuana (2.8%) and nicotine (2.8%). This difference was statistically significant. A study done in Dopoma Municipality, Tanzania reported that the commonest substance abused by the high school students studied was inhalants (7.6%), followed by alcohol (6.8%).<sup>15</sup> Also in Limpopo South Africa, the commonest substance abused by the students studied was alcohol.<sup>16</sup>

In this study, the commonest reason for abusing substances was to keep awake (61.1% of rural respondents and 60.5% of urban respondents) and the difference was not statistically significant. This contrasts with a study done among high school students in Ethiopia which reported that the commonest reason for substance abuse was relaxation (21.6%). In this study most of the respondents were introduced to the substances by their friends (41.9% for urban respondents and 44.4% for the rural respondents) and the difference was not statistically significant. Similarly in Ethiopia among high school students 45% of them were introduced to substances by their friends.<sup>17</sup> This is not a surprising finding because it has been established by research that adolescent who have friends that use alcohol are usually more likely to engage in alcohol use.<sup>18</sup>

## **CONCLUSION**

It can be concluded from this study that substance abuse exists among secondary school students in both the urban and the rural areas in Anambra State of Nigeria, even though the students know what substance abuse meant, they still engage in the practice. The students in both the urban and the rural secondary schools had good knowledge of the substances that are commonly abused. Most of the students (both the urban and the rural) abuse substances because they want to stay awake and they were introduced to those substances by their friends.

We therefore recommend that public health education on the substance abuse should be intensified among adolescents in both the urban and the rural areas of Anambra State. The rural areas should not be considered to be free of substance abuse among adolescent. Also peer educators should be utilized since adolescents are easily influenced by their peers.

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