Changing Trend of Psychoactive Drug Abuse among Adolescent Students in South Eastern Nigeria

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Abstract

Background: Recent report suggests a new trend of psychoactive substance abuse among the youths. Cocktail of candies and beverages, methylated spirit and soda, Tramadol, "Lacatomtom", "Msquared", "Skoochies", "Omi Gutter", "Ginko", and other lethal cocktail of beverages, drugs and candies, food additives and soft drinks are gradually taking over from earlier documented substances of abuse. These materials appear harmless but on a closer evaluation of their abusers, varying degrees of poor school functioning (school absenteeism, poor academic performance, and even outright drop-out), deteriorating physical health and increase rate of psychopathology will be observed.

The United Nations Office on Drugs and Crime (UNODC) report of 2014 estimated that 12% of the world's population used one or more drugs in the preceding year and this accounts for 39 million people greater than the previous year. Despite concerted efforts at reducing this worrisome trend, newer and difficult to detect substances of abuse are now been abused/. Materials seen before now as safe have become key instruments used by adolescents in lethal combinations to feel high.

These materials are difficult to detect as available test kits are unable to pick them. Relying on self-reported account of substance abusers may under-estimate the prevalence of substance abuse among this group of individuals. This study was aimed at describing the trend of psychoactive drug abuse in the south-eastern part of Nigeria, to enable policy makers tailor preventive efforts at curbing the worrisome trend of adolescent substance abuse appropriately. This would ensure an effective reduction of adolescent substance abuse in the region and the country at large.

Objective: To determine the pattern of psychoactive substance abuse among adolescent students in Umuahia.

Methods: A cross-sectional descriptive study of 400 adolescent school students in urban and rural communities in Umuahia. Substance abuse status was established by self-report (using a modified WHO student drug use questionnaire) and urine toxicology screen (using Icup 6 test kits). Data obtained were analyzed using SPSS Version 20. These data were presented in prose, tables, and figures. P values ≤0.05were accepted as significant.

Results: Out of 400 participants, a total of 209 (52.3%) were boys and 191 (47.8%) respondents were girls. Only participants who completed their questionnaires were encouraged to submit their UDT.

The study revealed that the life time prevalence of psychoactive substance abuse was 91.3%, current prevalence 56.8% and UDT obtained rate was 38.5%.

Coffee was the most abused by self-report with a current rate of 32.0%, followed by kolanut and cannabis at 18.8% each and cocaine being the least at 0.8%.

Oxycodone was the most abused by UDT at 24.8%, followed by cannabis at 19.3%, Tramadol at 6.3% and cocaine at 1.5%.Cannabis was the most combined drug and 31.2% of abusers, abused multiple substances.

Pattern of abuse by current self-report revealed that coffee, kolanut, cannabis, Lacatomtom, Tramadol, Alcohol, Tobacco and cocaine were most abused while UDT showed Oxycodone, cannabis, methamphetamine, opioid and cocaine were most abused.

Coffee, kolanut and cannabis were most self-reportedly abused substance among rural students while oxycodone and methamphetamine were the most abused drugs among this group of students.

Conclusion: The study revealed that the prevalence of self-reported lifetime and current abuse of psychoactive substances were 91.3% and 56.8% respectively with coffee as the most currently abused and UDT obtained prevalence of 38.5% with oxycodone as most obtained. The pattern of abuse of psychoactive substances is gradually changing from previously known and detectable substances to cheaper and other difficult to detect cocktail of psychoactive materials.

Recommendation: Policy makers need to urgently incorporate drug preventive measures and random urine drug screening programs in the school curriculum to reduce drug demand by our adolescents in school.

Keywords: Adolescent, Substance abuse, Secondary school students

Introduction

The United Nations Office on Drugs and Crime (UNODC) report of 2014 estimated that 12% of the world's population used one or more drugs in the preceding year and this accounts for 39 million people greater than the previous year. Despite concerted efforts at reducing this worrisome trend, newer and difficult to detect substances of abuse are now been abused. Materials seen before now as safe have become key instruments used by adolescents in lethal combinations to feel high. Tramadol, "Lacatomtom", "Msquared", "Skoochies", "Omi Gutter", "Ginko", and other lethal cocktail of beverages, drugs and candies, food additives and soft drinks are gradually taking over from earlier documented substances of abuse.

In 2009 in Enugu [1-3], reported alcohol, coffee, kolanut, cigarette, inhalants, tranquilizers, and cannabis as most abused at rates of 31.6%, 20.7%, 15.7%, 14.3%, 9.0%, 7.4%, and 4.1% respectively. Manyike and colleagues few years later reported a different pattern in same Enugu metropolis with Kolanut being the most abused and cannabis as the least.

This change in the pattern of adolescent drug abuse may have continued with recent melodious jingles and "jamz" on our airwaves like Olamide's See Mary See Jesus, Science student, Zlatan's Codeine diet and Marlian's Mafo among others that subtly promote substance abuse. [4-6]

This study therefore aimed to highlight the changing pattern of psychoactive drug abuse among adolescents in the sub-region to enable our healthcare planners tailor preventive approaches to this menace appropriately and efficiently reduce the scourge of adolescent drug abuse in our society.

Methodology

This is a cross-sectional study that studied the current trend of psychoactive drug abuse among adolescents in a south eastern city. It was carried out among 400 secondary school students in six urban and rural secondary schools in Umuahia, Abia State, Nigeria.

The WHO student drug use questionnaire as adapted and UDT were used to obtain data on substance abuse from study participants.

Data were analyzed using SPSS 20.Chi-square and logistic regression, were used as a test for qualitative variables. P-value less than 0.05 were accepted as significant for each statistical test.

Results

Study Participants

A total of 400 students, aged 10-19years, were recruited for the study. The students self-administered a modified WHO student drug use questionnaire on themselves. Of the 400 students, 213 attended urban schools and resided in urban areas while 187 who attended rural schools, resided in the rural area. Three hundred

and fifty-four of them were in mixed schools and forty-six in single sex schools. Two hundred and forty-five of these students were schooling in public schools while one hundred and fifty-five were in private schools. Also 136 students were boarders while 264 students were non-boarders.

Demographic characteristics of the study population

The socio-demographic characteristics of the study participants is shown in **Table 1**. Ages of participants ranged from 12 years to 19 years, with a mean age of 15 ± 3 years and a median age of 15 years. There were 209 (52.2%) male and 191 (47.8%) female participants, with a male to female ratio of 1.09:1. Majority (96%) of the participants were Christians and equal number of students were from the upper and lower socio-economic class.

Prevalence of substance abuse among study population

Table 2 shows the prevalence of substance abuse among male and female students by self-report and confirmed urine drug testing. Using the WHO student drug use questionnaire, 365 (91.3%) students were lifetime substance users (mostly coffee or kolanut) while 227 (56.8%) were current substance abusers. For the urine drug test, 154(38.5) students tested positive for substances. Therefore, the overall prevalence for lifetime and current substance users were 91.3% and 56.8% respectively. The overall rate of substance abuse among the students by urine drug testing was 38.5%.

Lifetime substance use was reported in 199 males' students compared to 166 females and the difference in the sex prevalence was significant with $\chi2$ =8.62 and p≤0.01. Of the 209 male students studied, 129(61.7%) were current abusers while a total of 98(49.7%) of the 191 females currently abused substances. There was a statistically significant difference in the prevalence of current substance abuse among the male and female students. ($\chi2$ = 2.89; p= 0.023).

For the urine testing, 88 (42.1%) male students and 66 (34.6%) female students tested positive for substance. There was no significant difference between the number of males and female that tested positive with $\chi2$ = 2.40; p=0.121.

Pattern of substance abuse by self-report (current) and urine drug testing

Table 3 shows the type of substances currently abused by the subjects and their prevalent rates using self-report and urine drug testing. For the current abusers, using self-report, the commonest licit substance reported was coffee in 128 (32.0%) participants followed by kola nut in 75 (18.8%) participants. Among the illicit substances, cannabis had a prevalence of 18.8%. The least abused substance was cocaine with a prevalence of 0.8%.

Substances detected by urine drug testing among students in Umuahia were oxycodone, cannabis, opioid, methamphetamine and cocaine. Oxycodone was the commonest substance detected by UDT with a rate of 24.8% while cocaine was detected in six students with a rate of 1.5%. Coffee, kola nut, alcohol, tobacco and lacatomtom were not detectable by the Icup 6 urine drug test kits used.

Pattern of substance abuse using urine drug testing

Table 4 shows the pattern of substance abuse (singly or multiple) among the students using drug testing. A total of 106 (68.8%) students were single substance abusers while 48 (31.2%) students were multiple substance abusers. For single drug abusers, oxycodone was the most abused with a prevalent rate of 37.7% while opioid was detected in one student with a prevalence of 0.6%. Mostly combined drug was cannabis, either with oxycodone, oxycodone and opioids or opioids at rates of 16(10.4%), 10(6.5%) and 8(5.2%) respectively.

Table 1: Socio-demographic characteristics of study participants.

Variables		
Age group Variables	**Frequency**	**Percent**
10-13 yrs	13	3.2
14-16 yrs	234	58.5
17-19 yrs	153	38.3
Sex		
Female	191	47.8
Male	209	52.3
Religion		
Christianity	384	96
Islam	4	1
Traditional	6	1.5
None	6	1.5
Social class		
Upper	137	34.25
Middle	126	31.5
Lower	137	34.25
Total	400	100

Table 2: Prevalence of substance abuse by self-report and urine drug testing.

Tools	Male n=209	Female n=191	Total N=400	χ2	P
Self-report					
Lifetime	199(95.2)	166(86.8)	365(91.3)	8.62	**0.003***
Current	129(61.7)	98(49.7)	227(56.8)	2.89	**0.023***
Urine drug test	88(42.1)	66(34.6)	154(38.5)	2.4	0.121

Percentages in parenthesis
*Statistically significant

Table 3: Pattern of substance abuse by self-report (current) and UDT.

Substances	Current abusers	Percentage	Urine drug Testing	Percentage
Coffee	128	32	***	***
Kola nut	75	18.8	***	***
Cannabis	75	18.8	77	19.3
Lacatomtom	46	11.5	***	***
Tramadol (opioid)	39	9.8	25	6.3
Alcohol	30	7.5	***	***
Tobacco	25	6.5	***	***
Cocaine	3	0.8	6	1.5
Oxycodone	0	0	99	24.8
Methamphe-tamine	0	0	16	4

*** Not detectable by Icup 6 urine drug test kits
Some were multiple abusers

Table 4: Pattern of single and multiple drug abuse by UDT.

Pattern of abuse	Frequency	Percentage
Single drugs		
OXY (oxycodone)	58	37.7
THC (cannabis)	40	26
mAMP (methamphetamine)	7	4.5
Opioids	1	0.6
Mulitple drugs		
THC-OXY	16	10.4
THC-OXY-Opioids	10	6.5
OXY-Opioids	8	5.2
THC-COC (cocaine)	4	2.6
THC – OXY- Opioids- mAMP	3	1.9
OXY- mAmp-COC	2	1.3
THC-Opioids	2	1.3
THC-mAMP	1	0.6
THC-OXY –mAMP	1	0.6
OXY – Opioids- mAMP	1	0.6
Total	**154**	**100**

Relative frequencies of substance abuse among male and female students by UDT

Figure 1 below shows the frequency and order of substances abused by gender. Abuse of only one substance occurred in 74% and 65% of the female and male subjects, respectively. The rates of abuse of two, three or four drugs were 27%, 10% and 3% in males, and 18%, 8% and 0% in female participants, respectively.

Age and sex distribution of self-reported current and UDT obtained substance

Table 5 shows the age and sex distribution of substance abuse among students by self-report (current) and urine drug testing.

The proportion of male current abusers was 59.4% and 54.5% in the mid and late adolescent age groups, respectively. For the females in the same groups, proportion was 40.6% and 45.5% respectively. There were statistically significant differences in the proportion of male and female current abusers in the mid and late adolescent age groups (χ2 = 15.06, p≤0.01; χ2 =13.9, p≤ 0.01). The difference in the proportion of male and female students in the early adolescent age group was not statistically significant with Fisher' test = 0.51.

For urine testing, mid-adolescent age group (14-16yrs) accounted for the highest number of abusers among the students. The difference in the proportion of the male and female students in this age group was not statistically
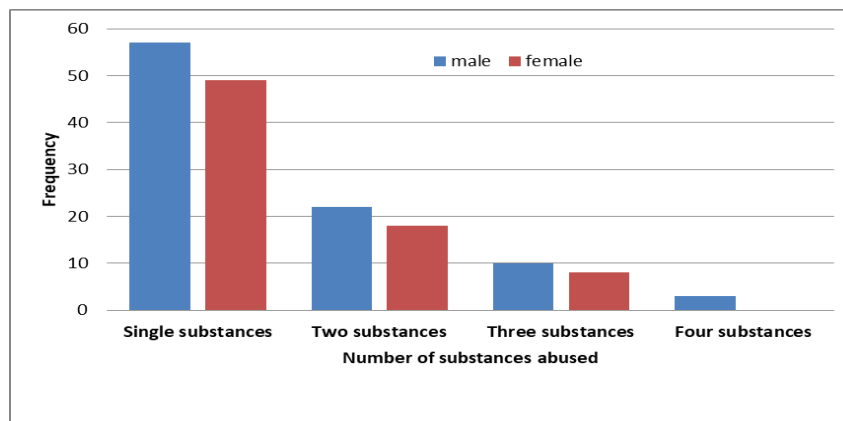
Figure 1   Frequency and order of substances abused by gender using UDT.

Table 5: Age and sex distribution of self-reported current and UDT obtained substance.

| | Age (yrs) | | | | | Substance Abuse | | | | |
| | Group | Self-report (current abuse) | | | | Urine testing | | | | |
	Male	Female	Total	χ2	P	Male	Female	Total	χ2	P
10-13	3 (60.0)	2 (40.0)	5 (38.5)	+	0.51+	6 (66.7)	3 (33.3)	9 (69.2)	+	0.73+
14-16	60 (59.4)	41(40.6)	101 (43.2)	15.06	≤0.01*	34 (32.7)	42 (32.3)	76 (32.5)	0.004	0.950
17-19	66 (54.5)	55(45.5)	121 (79.1)	13.90	≤0.01*	48 (50.5)	21 (36.2)	69 (45.1)	2.980	0.084
Total	129 (56.8)	98 (43.2)	227 (56.8)	2.89	0.02*	88 (42.1)	66 (34.6)	154 (38.5)	2.400	0.121

Percentages in parenthesis

+ Fisher's test

*Statistically significant

significant (χ2 = 0.004, p= 0.950). Also, in the late adolescent period, the difference in the proportion of male and female students was also not statistically significant with χ2 = 2.40, p= 0.121.

Prevalence of current substance abuse by self-report according to gender

Table 6 shows the prevalence of current substance abuse among adolescent male and female secondary school students in Umuahia. Male students predominated in all substances abused with coffee being the most abused substance. There were statistically significant differences in the prevalence rates of lacatomtom and cannabis for male and female students with χ2= 6.25, p=0.01; χ2= 4.01 and 0.04 respectively.

Pattern of current substance abuse by self-report among urban and rural students

Table 7 shows the pattern of current substance abuse by self-report among adolescent students in urban and rural secondary schools in Umuahia. A total of 213 students attended the urban school while 187 students were in the rural schools. The proportions of rural students that abused coffee, kolanut, cannabis and tobacco were higher than those from the urban schools (47.1% vs 18.8%; 26.7% vs 11.7%; 23.5% vs 14.6%; 8.02%

vs 4.7% respectively). The difference in the proportions of the students in the urban and rural schools for coffee, kolanut and cannabis was statistically significant with p= 0.00001, 0.0001 and 0.02 respectively.

None of the students from the rural schools abused of cocaine.

Pattern of adolescent substance abuse by urine testing in urban and rural schools

Table 8 shows the pattern of substance abuse by urine drug testing in urban and rural secondary schools in Umuahia. Of the 213 students attending urban schools, 96 (45.1%) tested positive for substances while 125 (66.4%) students, out of the 187students in the rural schools, tested positive for substances. For individual substances, 37 (17.4%), 34 (16%), 18 (8.5%), 4 (1.9%) and 3 (1.4%) students attending urban schools tested positive for oxycodone, marijuana, opioids, methamphetamine, and cocaine, respectively. For those attending rural schools, 62 (33.2), 43 (23%), 13 (7.0%), 7(3.2) and 0 (0.0%) students tested positive for oxycodone, marijuana, methamphetamine, opioids, and cocaine, respectively. The difference in the prevalent rates of oxycodone, opioid and methamphetamine abuse among students in urban and rural schools were statistically significant with p=0.001, 0.042 and 0.004, respectively.

Table 6: Prevalence of current substance abuse by self-report according to gender.

Substance	Male	Female	Total	χ^2	P
Coffee	71(34.0)	57(29.8)	128(32.0)	0.22	0.64
Kola nut	43(12.4)	32(16.8)	75(18.8)	0.01	0.91
Cannabis	47(22.5)	28(14.7)	75(18.8)	4.01	**0.04***
Lacatomtom	32(15.3)	14(7.3)	46(11.5)	6.24	**0.01***
Tramadol	25(12.0)	14(7.3)	39(9.8)	2.43	0.2
Tobacco	17(8.1)	8(4.2)	25(6.3)	2.65	0.1
Cocaine	2(1.0)	1(0.5)	3(0.8)	0.25	0.99

Table 7: Pattern of current substance abuse by self-report in urban and rural schools.

Substance	Urban		Rural		Total			
	n	(%)	n	(%)	N	%	χ^2	P
Coffee	40	18.8	88	47.1	128	32.0	36.59	**≤0.01***
Kolanut	25	11.7	50	26.7	75	18.8	14.71	**≤0.01***
Cannabis	31	14.6	44	23.5	75	18.8	5.26	**0.02***
Lacatomtom	30	14.1	16	8.6	46	11.5	2.99	0.08
Tramadol	25	11.7	14	7.5	39	9.8	2.04	0.15
Alcohol	21	9.9	9	4.8	30	7.5	3.15	0.07
Tobacco	10	4.7	15	8.0	25	6.3	1.88	0.17
Cocaine	3	1.4	0	0.0	3	0.8	2.65	0.25

Table 8: Pattern of substance abuse by urine drug testing in rural and urban schools.

SubstanceAbused	Urban	Rural	Total (%)	χ^2	P
	n (%)	n (%)			
OXY	37 (17.4)	62 (33.2)	99 (24.8)	13.32	**0.001***
THC	34 (16.0)	43 (23.0)	77 (19.3)	3.16	0.075
Opioid	18 (8.4)	7 (3.2)	25 (6.3)	3.76	**0.042***
Mamp	3 (1.4)	13 (7.0)	16 (4.0)	7.96	**0.004***
COC	6 (1.9)	0 (0.0)	6 (1.5)	3.54	0.126

*Statistically significant

Table 9: Relationship between self-reported drug abuse and urine drug testing.

	Self-reported					
	Cannabis		Cocaine		Tramadol	
Urine test	Spearman rho	p	Spearman rho	p	Spearman rho	P
THC	0.03	0.541				
COC			0.01	0.862		
Opioids					0.03	0.456

Relationship between self-report and urine drug testing in diagnosing substance abuse

Table 9 shows the correlation between self-report and urine drug testing for substance abuse among the students. The three drugs that were commonly self-reported and detected in confirmatory urine tests were cannabis, cocaine and opioid (Tramadol). There was a weak association between the ranks obtained by these tools (p=0.456).

Discussion

In present study, the self-reported life-time prevalence of substance abuse by the WHO student drug use questionnaire was 91.3%. This was remarkably higher than most previous studies on substance abuse in the south-eastern region of the country [7]. Majority (95.2%) of the respondents in this study were in the middle and late adolescent age groups who may have established substance dependence by now. Prevalence of substance abuse in these groups of adolescents may be higher than the rate in all adolescents. Also, the use of coffee and kola nut especially by those in the rural schools was very high. It is not surprising because kolanut use is quite acceptable in Igbo culture and there is no age restriction. In addition, older students may be bold enough to volunteer information bothering on substance use, especially when left with neutral investigators as done in this study. If teachers were to administer the WHO student drug use questionnaire used in present study, a lower rate may have been obtained as demonstrated by Muma in Kenya and Onifade [8,9] in Nigeria.

A prevalence of 56.8% was obtained by self-report for current substance abuse in this study. This is also higher than the rate reported by Anyanwu and colleagues in Abakiliki among

adolescents most of whom were from the low socio-economic class. Manyike in 2016, documented current substance use rate of 34.9%. The study was among adolescent secondary school students in Enugu metropolis. This may suggest a rising trend of psychoactive drug abuse in the region. However, students in rural schools were not included in the study by Manyike and colleagues. Igwe in 2009, more than a decade ago, documented a prevalence of 33.8%. Both studies (Igwe's and Manyike's) were in the same city where a lot of health education on substance abuse has been enforced and included in the school curriculum. More so, previous studies [10-14] that left out some licit drugs like coffee, painkillers, kolanut or alcohol in administered questionnaires, recorded lower prevalence.

The pattern of substances abused in current study was at variance with commonly reported pattern by many authors [13-15]. It was interesting to note that coffee and kolanut were the commonest substances abused by the participants. Oshodi [16] had noted that the commonest substance used was caffeine (kolanut and coffee) with 56.5% and 85.7% of current and lifetime users, respectively. Reason could be the use of both substances as stimulant to keep awake during studies. Manyike in 2016, in Enugu, reported kolanut as the most abused substance among boarding secondary school students. Alcohol and nicotine are often reported as the most abused licit drugs. These are gateway drugs for substance abuse among the adolescents [17]. However, the current prevalence of alcohol in this study was 7.5%. This was lower than reports by previous authors [18-22] Abdulmalik from Northern Nigeria documented low alcohol prevalence of 4.1% for lifetime use [23,24]. This was attributed to the cultural and religious inclination of the area. It was noted that Islamic Faith which prohibits the use of alcohol was most likely responsible for the low prevalence. The lacatomtom prevalence of 11.5% in present study might indicate the preference of this beverage to alcoholic drink by these students. It is easier to deceive the uniformed parents and guardians with "lacasera" drink than with an outright alcoholic drink. On the other hand, Fatoye [25] in 2002, studied substance use among adolescent secondary school students in rural and urban communities in Ilesa, South Western Nigeria and showed a different pattern where salicylate analgesic was the drug of most abuse. It is therefore likely that substance use by adolescents depends on the immediate environment and availability of substance.

The current prevalence of cannabis in this study was 18.8%. This is remarkably high compared to similar studies in Nigeria [26,27] Asante in Ghana found a past month marijuana use prevalence of 72%. This was among street children who lacked parental supervision and with ready availability of such illegal substances on the street being responsible for such a high abuse rate.

It was observed that 31. 2% were multiple substance abusers using urine drug testing. Oshodi noted that 57.4% engaged in multiple substance use using self-report while Igwe noted that 24.8% of their participants were multiple substance abusers. Earlier studies [28] had also reported multiple substance abuse among adolescents. The reason for multiple drug abuse has been linked to variations in the chromosome 15 nicotinic receptor subunit gene cluster. However, the direction of this effect may vary across substances [29].

Using urine testing, the prevalence of substance abuse in this study was 38.5%. This corroborates with 36% reported by James and Moore [30] in USA and self-reported prevalence by Manyike and Igwe in Enugu but higher than previous report by Onifade. The high prevalence from self-report is most likely a pointer to high rate of substance abuse amongst these children which reflected in the UDT results. The lower rate by UDT compared with self-report is not a surprise as there is a limited detection window of drug metabolites due to their short half-lives. Cannabis, cocaine, and codeine are no longer detected in the urine of their abusers after 2-10days, 2-4days and 2days, respectively.

Prevalence of oxycodone, cannabis, opioids, methamphetamine, and cocaine abuse by UDT were higher than the previously reported rates in our environment. Presence of oxycodone in participants' urine despite no report from the questionnaires could be due to the use of the chemical name. A lot of these analgesics come in combination forms with different brand names. For instance, Co-codamol is a combination of codeine and paracetamol. These substances are illegally dispensed freely across the counter in patent medicine stores, especially in the rural areas. Opioid had a prevalence of 6.3% by UDT. This is lower than 8.8% documented by Bassiony in Egypt. There was no pre-information regarding the urine testing, so the students screened by Bassiony [31] were taken unawares. Early knowledge of such tests might result in abstinence from the use of such a substance for the period of the study. Study participants in current study were pre-informed about the test and this may have resulted in the refusal of some current abusers to participate.

There is however an alarming report on the rising trend of opioid (tramadol) uses by youths in Africa. In addition, no student reported the use of meta-amphetamine (a derivative of amphetamine) in this study. Over-the-counter medications such as antihistamines, nasal decongestants, Vicks inhaler and herbal supplements have been previously reported in the literature to cause a false-positive result for amphetamines on urine drug screen [32] Onifade screened the urine of students for psychoactive substances and documented a prevalence of 0.1%, 0.1% and 0.4% for cannabis, methamphetamine, and opiates, respectively.

Current abuse rate (past month drug use) was used to study the relationship with urine drug testing since it is positively related to urine drug testing. The reason is because most drug metabolites are cleared from the system within a month of their abuse [33-35]. However, a similar study done by Onifade and colleagues in Nigeria compared the lifetime and past 3-month self-reported drug use of study participants, with their urine drug tests. That may have erroneously given a poor estimate of their subjects self-reported current drug use, compared to drug testing, which measures current drug use status of participants.

Conclusion

The study revealed that the prevalence of self-reported lifetime and current abuse of psychoactive substances were 91.3% and 56.8% respectively with coffee as the most currently abused and UDT obtained prevalence of 38.5% with oxycodone as the most obtained. The pattern of abuse of psychoactive substances

is gradually changing from previously known and detectable substances to cheaper and other difficult to detect cocktail of psychoactive materials.

Recommendation

This brings to bare the need for a mandatory random objective estimation of substance abuse and incorporation of preventive measures by policy makers in our schools to limit the rising drug demand among adolescents.

References

1. Sue D, Sue DW, Sue S, Sue DM (2016). Understanding Abnormal Behaviour.11th ed. Boston. Houghton Mifflin Company. pp: 5-9.

2. Manyike PC, Chinawa JM, Chinawa AT, Obu HA, Nwokocha ARC, et al. (2016) Correlates for Psychoactive Substance Use among boarding Secondary School Adolescents in Enugu South East Nigeria. BMC Pediatrics 16: 78.

3. Igwe WC, Ojinnaka NC, Ejiofor SO, Emechebe GO, Ibe BC (2009). Socio-demographic correlates of psychoactive substance abuse among secondary school students in Enugu, Nigeria. Eur J Soc Sci 12(2): 277–283.

4. Anyanwu OU, Ibekwe RC, Ojinnaka NC (2016). Academic performance of Substance Abusing adolescents in Abakiliki Metropolis. IOSR J Dental and Medical Services 15(11): 86-90.

5. Dayo B (2018). How Anti-Drug Pop Songs Are Only Making Drug Culture Look cool. The Guardian.

6. Abraham AA (2019). Nigeria: Drug Addiction in Music Videos- Who's to Blame? Leadership Newspaper.

7. Chinawa JM, Manyike PC, Obu HA, Odetunde OI, Aniwada EC, et al. (2014) Behavioural Disorder amongst Adolescents Attending Secondary School in Southeast Nigeria. Behav Neurol : 705835.

8. Muma HM. (2008) Influence of Substance abuse among Students of Public Secondary Schools in Nakuru Municipality, Kenya. Master of Education thesis. Maseno University, Kenya.

9. Onifade PO, Bello AO, Abiodun O, Sotunsa JO, Ladipo OA, et al. (2014) Psychometric Properties of Alcohol, Smoking and Substance Involvement Screening Test (ASSIST V3.0) among university students. J Addict Behav Ther Rehabil 3: 3.

10. Famuyiwa O, Aina OF, Bankole-Oki OM. (2011) Epidemiology of psychoactive drug use amongst adolescents in metropolitan Lagos, Nigeria. Eur Child Adolesc Psychiatry 20(7): 351–359.

11. New drug abuse discovery tom-tom,maggi, lacasera drink, mixture have higher effects of intoxication than real hard drugs or alcohol. Available at https://msquarenewsonline.wordpress.com/2019/11/30/new-drug-abuse-discovery-tom-tommaggi-lacasera-drink-mixture-have-higher-effects-of-intoxication-than-real-hard-drugs-or-alcohol/amp/ Accessed on: November 29, 2019.

12. Levy S, Schizer M. (2015) Committee on Substance abuse. Adolescent Drug Testing Policies in Schools. Pediatrics 135(4): e1107-e1112.

13. Peacock A, Leung J, Larney S, Colledge S, Hickman M, Rehm J, et al. (2018) Global statistics on alcohol, tobacco, and illicit drug use: 2017 status report. Addiction 113(10): 1905-1926.

14. Igwe WC, Ojinnaka NC. (2010) Mental health of adolescents who abuse psychoactive substances in Enugu, Nigeria - A cross-sectional study. Ital J Pediatr 36: 53.

15. Sarangi L, Acharya HP, Panigrahi OP. (2008) Substance Abuse among Adolescents in urban slums of Sambalpur. Indian J Community med 33(4): 265-267.

16. Oshodi OY, Aina OF, Onajole AT. (2010) Substance use among secondary school students in an urban setting in Nigeria: prevalence and associated factors. Afr J Psychiatry 13: 52-57.

17. Otu SE. (2013) The "War on Drugs" in Nigeria: How effective and beneficial is it in dealing with the problem. Afr J Drug Alcohol stud 12(2): 119-135.

18. Eneh AU, Stanley PC. (2004) Pattern of substance use among secondary school students in Rivers state. Nig J Med 13: 36–39.

19. Ekpenyong, SN. (2012) Drug Abuse in Nigerian Schools: A Study of Selected Secondary Institutions in Bayelsa State, South-South, Nigeria. IJSRE 5: 260-268.

20. Fatoye FO, Morakinyo O. (2002) Substance use amongst secondary school students in rural and urban communities in south western Nigeria. East Afr Med J 79(6):299-305.

21. Baba TA, Ganai AM, Quadri SS, Margoob MA, Iqbal QM, et al. (2013) An epidemiological Study on Substance abuse among College Students of North India (Kashmir Valley).Int J Med and public health 2(3): 562-567.

22. Anochie IC, Nkanginieme KE. (2000) Social Correlates of Drug use among secondary school students in Port Harcourt, Southern Nigeria. Sahel Med J. 3(2): 87-92.

23. Oshodi OY, Aina OF, Onajole AT. (2010) Substance use among secondary school students in an urban setting in Nigeria: prevalence and associated factors. Afr J Psychiatry 13: 52-57.

24. Abdulmalik J, Omigbodun O, Beida O, Adedokun B. (2009) Psychoactive substance use among children in informal religious schools (Almajiris) in Northern Nigeria. Ment Health Relig Cult. 12(6): 527-542.

25. Fatoye FO, Morakinyo O. (2002) Substance use amongst secondary school students in rural and urban communities in south western Nigeria. East Afr Med J. 2002; 79(6): 299-305.

26. 26. Ljubotina D, Galić J, Jukić V. (2004) Prevalence and Risk Factors of Substance Use among Urban Adolescents: Questionnaire Study. Croat Med J. 45: 88-98.

27. Asante KO, Meyer-weitz A, Peterson I. (2014) Substance use and risky sexual behaviours among street connected children and youth in Accra, Ghana. Subst Abuse Treat Prev Policy. 9: 1-9.

28. Boys A, Farrell M, Taylor C, Mardson J, Goodman R, et al. (2003) Psychiatric morbidity and substance use in young people aged 13-15years: result from the Child and Adolescent Survey of Mental Health. Br J Psychiatry 182: 509-517.

29. Sherva R, Kranzier, Yu Y, Logue MW, Poling J, Arias AJ et al. (2010)Variation in Nicotinic Acetylcholine Receptor Genes is Associated with Multiple Substance dependence phenotypes. Neuropsychopharmacology 35 (9): 1921-1931.

30. James WH, Moore DD. (1998) Adolescents, and drug abuse: Clinical use of urine drug screening. J Child Adolesc Subst Abuse. 7(2): 19–36.

31. Bassiony MM, El-deen GMS, Youset U, Raya Y, Abdel-Ghani MM, et al. (2015) Adolescent Tramadol use and abuse in Egypt. AmJ Drug Alcohol Abuse. 41(3): 206-211.

32. Fenderson JL, Stratton AN, Domingo JS, Matthews GO, Tan CD. (2013) Amphetamine positive urine toxicology screen secondary to atomoxetine. Case Rep Psychiatry. 2013: 381261.

33. Ashrafi S, Aminisani N, Soltani S, Sarbakhsh P, Shamshirgaran SM, et al. (2018) The validity of self-reported drug use with urine test: results from the pilot phase of Azar cohort study. Health Promt Perspect 8(3): 225-229.

34. McDonell MG, Graves MC, West II, Ries RK, Donovan DM, et al. (2016) Utility of Point of care Urine Drug Tests in the Treatment of Primary Care Patients with Drug Use Disorders. J Addict Med 10(3): 196–201.

35. Poikolainen K, Podkletnova I, Alhotl. (2002) Accuracy of quantity-frequency and graduated frequency questionnaires in measuring alcohol intake: Comparison with daily diary and commonly used laboratory markers. Alcohol Alcohol 37(6): 573-576.