



Received: 05 October 2016
Accepted: 09 December 2016
First Published: 18 December 2016

*Corresponding author: Onyinye U. Anyanwu, Department of Pediatrics, Federal Teaching Hospital Abakaliki, Abakaliki, Ebonyi State, Nigeria
E-mail: onyinyeanyanwugc@gmail.com

Reviewing editor:
Udo Schumacher, University Medical Center Hamburg-Eppendorf, Germany

Additional information is available at the end of the article

PEDIATRICS | RESEARCH ARTICLE

Pattern of substance abuse among adolescent secondary school students in Abakaliki

Onyinye U. Anyanwu^{1*}, Roland C. Ibekwe² and Ngozi C. Ojinnaka²

Abstract: *Background:* Substance abuse is a rising public health problem especially among adolescents the worlds over. Abuse of substances exposes the youth to several physical and psychological consequences. *Objectives:* To determine the prevalence and pattern of substance abuse amongst secondary school students in Abakaliki and identify factors predisposing to substance abuse. *Methods:* A cross section survey of 620 senior secondary students (SS2 and 3) using the WHO drug use questionnaire. *Results:* A prevalence of substance abuse was 32.9% alcohol being the most commonly abused substance. Substance abuse was more amongst males, older students, persons from divorced home and orphans. It was however less amongst those who frequently participated in religious activities. *Conclusion:* Substance abuse is high among secondary school students in Abakaliki and alcohol is the most commonly abused substance.

Subjects: Child & Adolescent Psychiatry & Clinical Psychology; Pediatrics & Child Health; Child & Adolescent Psychiatry

Keywords: substance abuse; pattern; students

1. Introduction

Substance abuse is a complex behavior seen amongst young people all over the world (Abdulkarim, 2004). Reports from epidemiological studies in Nigeria (Anochie & Nkanginieme, 2000; Ayuba & Audu, 2003; Okwaraji, 2006), Ghana (Lamptey, 2005), South Africa (Betencourt & Herrera, 2006; Bronwyn & Charles, 2005), Kenya (Ngesu, Ndiku, & Masese, 2008), and the United States (Wu, Woody, Yang, Pan, & Blazer, 2011) have shown alarming figures of substance abuse among young people. Abuse of substance is now recognized as a significant public health problem worldwide (Belfer, 2003).

ABOUT THE AUTHOR

Onyinye U. Anyanwu is a young Paediatric consultant with special interest in Adolescent medicine. She has worked severally with the youth especially on issues such as sexual maturation, sexual behaviours and teenage pregnancy issues, substance use and abuse, sleep problems and various addictions in adolescents. She is a mother of 6 daughters, 4 of which are adolescents. She is involved in various advocacy teams and for young people especially in Abakaliki, Ebonyi State, South-east Nigeria where she practices with the Department of Pediatrics Federal Teaching Hospital Abakaliki (FETHA). She holds fellowships with the West African College of Physicians (WACP) as well as the Nigerian National Postgraduate Medical College (NPMC).

PUBLIC INTEREST STATEMENT

Young people who abuse drugs are exposed to many consequences. This article tries to find out the number of secondary school students who abuse drugs and also seeks to know those things which causes them to do so. We found that a large number of the participants' abuse drug and it was more among boys and those from divorced homes. However those who participated regularly in religious activities did not abuse drugs. Therefore exploring means of engaging young people may reduce the number of those who may abuse drugs.

Adolescence is characterized by increased adventurous tendencies and peer influences (United Nations Population Fund, 2003). Adolescents tend to form gangs, and are often seen “hanging” around with peers experimenting with new things including the use of substance (Greydanus & Patel, 2003). Young people often start by taking “gateway” substances like cigarette and alcohol from which they gradually progress to other substances to degrees that control their behavior (McArdle, 2004). Substances are used for several reasons such as suppression of anxiety or mustering courage to speak to the opposite sex, a way of fitting into the desired gang or social clubs, and as a means to feeling “high” at all times. Substance availability, and parental influence, also contribute to their use.

Adolescent substance abuse has been shown to be more common in males, however reports have shown increasing female participation in the vice as well as a trend towards multiple substance use (Egbunu, Ezechukwu, Chukwuka, & Unakwe, 2004; Fatoye, 2003; Fatoye & Morakinyo, 2002; Obot, 1993). Adolescents’ who abuse substances are exposed to risks and consequences that can manifest physically, psychosocially and behaviorally (Goodman & Huang, 2002).

This main objective of the study was to describe the pattern of substance abuse in Abakaliki the capital of Ebonyi State in Eastern Nigeria so that findings can be used to proffer solutions for this rising problem.

2. Methodology

A 2015 cross sectional study of 620 adolescents in senior secondary (SS) 2 and 3 was done. Institutional ethical approval was obtained from the medical and ethics committee of the Federal Teaching Hospital Abakaliki. Approval was also obtained from the secondary education board of the state ministry of education, Ebonyi state. Similarly, informed written consent was also obtained from the Principals, selected students and their parents/guardian before commencement of the study. Participants were drawn from 5 secondary schools in the area in a multistage manner. There were 10 approved secondary schools in Abakaliki. Schools were stratified by gender into male, female, and coeducational schools. Two schools were girls only, two were boys only, while six were coeducational. All schools had their names written on sheets of paper for blinding and subsequently grouped into strata. The mixed schools were grouped into three strata with two schools in each stratum. The fourth and fifth strata consist of the boys only and the girls only schools respectively. One school was subsequently selected from each stratum by ballot method. One male, one female and three mixed, schools were therefore selected participants were subsequently selected from each school pro rata. The sample size studied constituted 10% of the total population of the students as recommended by WHO (Smart, Hughes, & Johnson, 1980). WHO drug use questionnaire was the tool of study although it was simplified in the language the respondents understood and included the use of the local names for the substances. It took participants 20 minutes to complete the questionnaire anonymously in the absence of their teacher to avoid victimisation afterwards. 5 substances were surveyed; alcohol, cigarette, cannabis, cocaine, coffee and kola nut. A participant was selected as a substance abuser if he/she had an uncontrollable (excessive), current use of licit substances like alcohol, coffee, cigarette and kola nut or currently used any illicit substance like cannabis or cocaine. Parental highest educational attainment and occupation were used to stratify participants into upper, middle and lower socioeconomic classes. Participation in religious activities was graded as frequently (>once a week), averagely (once a week->once a month) and rarely (≤once a month). Data was analysed using SPSS version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp 2011), and descriptive statistics were used to determine the prevalence of substance abuse. A level of $p < 0.5$ was accepted as significant.

3. Results

Six hundred and twenty students were surveyed (297 males and 323 females). The mean age of the participants was 16.57 ± 1.39 years with a male: female ratio of 1:1.09. The proportion of respondents aged 10–14 years were 6.9% while 93.1% were aged 15–19 years. SS2 students constituted 51.5% of respondents while 48.5% were in SS3. Respondents who were from divorced/separated

homes constituted 12.5% of total respondents while 16.1% were orphans. About 26.3% of participants participated frequently in religious activities.

Prevalence rate of substance abuse obtained was 32.9%. Alcohol was the most commonly abused substance with a prevalence rate of 29.0% while cocaine was the least abused with a rate of 2.1% (Table 1). Table 2 shows the proportion of respondents and the number of substances used. About 15.5% were abusers of more than one substance.

Abuse of alcohol, cigarette and kolanut were significantly more in 15–19 years olds (90.8, 44.6 and 76.9% respectively). There were no significant differences in the ages of those who abused cannabis, cocaine, and coffee.

More males (99.2, 46.7, and 7.5%) were abusers of alcohol, cigarette and cocaine respectively. There were 63.1% female coffee abusers while 36.7% males were coffee abusers. There was a significant gender difference in abusers of alcohol ($p = 0.012$), cigarette ($p = 0.045$), cocaine ($p = 0.042$) and coffee (0.031). The respondents who abused the various substances had their first use of substances at ≤ 14 years There was no significant difference in the frequencies of abusers of alcohol, cannabis, cocaine and coffee in the various socioeconomic classes.

Cannabis and cigarette abusers were more amongst those who were orphaned ($p = 0.042$ and 0.027 respectively). Cigarette, alcohol, cannabis and kola nut showed a significantly higher frequency amongst those who belonged to divorced families ($p = 0.002, 0.046, 0.006$ and 0.024 respectively). The findings are shown in Table 3.

Cannabis and cocaine abuse was not found among those who participated in regular religious abuse. Alcohol, Cigarette and Kolanut abuse were also significantly lower among those who participated frequently in religious activities (7.2, 4.2, and 3.4% regularly). There was no significant association between coffee abuse and frequent participation in religious activities.

Table 1. Prevalence of substance abuse

Substances abused	Freq (%)*
Alcohol	180 (29.0)
Kolanut	152 (24.5)
Coffee	97 (15.6)
Cigarette	89 (14.4)
Cannabis	32 (5.2)
Cocaine	13 (2.1)

*Some subjects abuse more than one substance.

Table 2. Number of respondents and number of substances abused

Number of substances abused	N (%)
0	416 (67.1)
1	108 (17.4)
2	62 (10.0)
3	21 (3.4)
4	10 (1.6)
5	1 (0.2)
6	2 (0.3)
Total	620 (100.0)

Table 3. Family structure of total respondents and its association with abuse of various substances

Substances abused	Divorced/separated?		Fishers exact	p-value
	Yes (N = 78)	No (N = 542)		
Alcohol	60 (76.9)	120 (22.1)	3.423	0.046*
Cannabis	25 (32.1)	7 (1.3)	9.342	0.006*
Cigarette	51 (65.4)	38 (7.0)	7.232	0.002*
Cocaine	2 (2.6)	11 (2.0)	1.283	0.521
Coffee	14 (17.9)	83 (15.3)	1.670	0.142
Kolanut	51 (65.4)	101 (18.6)	6.345	0.024*
	Orphan?			
	Yes (N = 100)	No (N = 520)		
Alcohol	36 (36.0)	144 (27.7)	2.421	0.323
Cannabis	18 (18.0)	14 (2.7)	6.236	0.042*
Cigarette	49 (49)	40 (7.7)	10.748	0.027*
Cocaine	3 (3)	10 (1.9)	3.271	0.243
Coffee	20 (20)	77 (14.8)	2.346	0.421
Kolanut	31 (31)	121 (23.3)	1.634	0.224

Note: N = total number of respondents in the group.

*Significant.

4. Discussion

The prevalence rate of substance abuse obtained from this study is 32.9% which is comparable to a previous study (Anochie, Nkanginieme, & Alikor, 1999) done five years ago in this environment that obtained a prevalence of 27.1%. In keeping with previous studies in south eastern Nigeria (Anochie et al., 1999; Egbuonu et al., 2004; Igwe, Ojinnaka, Ejiofor, Emechebe, & Ibe, 2009; Okike, 2009; Okonkwo, Ezeani, Ihezue, & Nwagbo, 1999), alcohol was the most commonly abused substance. This finding, may be attributable to the availability of various brands of alcoholic beverages in the study area. However, reports from western (Abiodun, Adelekan, Ogunremi, Oni, & Obayan, 1994a; Odejide & Olatawura, 1977) and northern (Shehu & Idris, 2008), Nigeria showed that cigarette was the most commonly abused substance. The difference in finding may be due to cultural differences between the South Eastern, Northern and Western Nigeria.

It is pertinent to note that 47% of substance abusers, abused more than one substance. Substance abuse disorders therefore may be causing significant morbidity amongst our adolescent population. As a result, more efforts need to be exerted to bring the use and abuse of substances to the barest minimum. Substance abuse is more common among male adolescents. This is consistent with observed trend in Nigeria (Anochie & Nkanginieme, 2000; Egbuonu et al., 2004; Fatoye & Morakinyo, 2002; Igwe et al., 2009; Okike, 2009; Okwaraji, 2006) and globally (Betencourt & Herrera, 2006; Greydanus & Patel, 2003; McArdle, 2004). The reason may be attributable to the more adventurous nature of males especially during adolescence (Okike, 2009).

Cigarette and kola nut abuse were more amongst adolescents of lower socioeconomic class. The abuse of other substances did not show any significant association with socioeconomic class. This observation contrasts with the findings of (Abiodun, Adelakan, Ogenremi, Oni, and Obayan (1994b) in Ilorin, and Odejide, Ohaeri, Adelakan, and Ikuesan (1989) in Ibadan, Western Nigeria. They reported that adolescents from upper socioeconomic class abused substances more than those from other socioeconomic classes. Abiodun et al. (1994b) as well as Odejide et al. (1989) attributed this to increased availability of these substances to this class of adolescents based on costs. The reason for the preponderance of cigarettes and kola nut abuse among the adolescents of lower socioeconomic

class in Abakaliki may be economic. Kola nuts and cigarettes are cheap and readily available. The practice of giving kolanut as a sign of acceptance of a visitor among the Igbos could also account for a high preponderance of kolanut abuse in Abakaliki. Another possible contributing factor could be parenting style. Adolescents with permissive parents; and those whose parents abuse substance are more likely to abuse substances (Okike, 2009). Parents of the lower socioeconomic classes have been reported to have less supervision of their adolescent students. This may make them vulnerable to negative peer influences at school (Okike, 2009).

Age of the respondent was found to be significantly associated with the abuse of cigarettes and alcohol. Most of the abusers were older and in the late adolescence. Ngesu et al. (2008) in Kenya and Fatoye and Morakinyo (2002) Adelakan and Ndom in Nigeria made similar observations. Older students have stayed longer in school, and therefore have been exposed to stronger and sustained peer influences. Adolescents found to be substance abusers were observed to have had their first use of these substances in early adolescence. This is because the use of substance has strong appeal for those beginning their independence as they search for identity (Abiodun et al., 1994b; Odejide et al., 1989; Okwaraji, 2006). Early adolescence is characterized by innate curiosity and thirst for new experiences. They are therefore susceptible to experimentation with drugs at this age (Obot, 1993). Furthermore, because adolescents at this stage lack the knowledge of consequences of actions and self-will, they may progress from experimentation with substances to addiction in later years (Obot, 1993; Odejide et al., 1989).

Adolescents who were orphaned were more likely to abuse cannabis and cigarettes while the abuse of cigarettes, alcohol, cannabis and kola nuts were more in adolescents from divorced homes. Similar findings of high prevalence of substance use and or abuse among students from dysfunctional homes have been reported severally in the literature (Abiodun et al., 1994b; Anochie et al., 1999; Okike, 2009). This may be due to lack of discipline, poor supervision and poor personality development which is often associated with single parenting (Abiodun et al., 1994b; Egbuonu et al., 2004; Okwaraji, 2006).

Frequent participation in religious activities maybe a deterrent to substance abuse since there was a decreased proportion of abusers among those who participated frequently in religious activities. This may be due to the fact that adolescents who participate frequently in religious activities were preoccupied or that the teachings of the religion makes it morally wrong for one to use or abuse substances.

The objectivity of detecting recent substance use by urine testing in adolescents is undisputed, however this does not provide information about the adolescent's history of substance use problems. More over some substances require quick assessment in order to detect it in the urine. It therefore supposes that self-report, especially when confidentiality is ensured and no legal contingency is attached, in describing pattern and factors affecting substance use and abuse is reliable. Studies carried out with self-report are cheap, easily accepted and the refusal rate has been found to be minimal.

5. Conclusion

Substance abuse is high among secondary school students in Abakaliki and alcohol is the most commonly abused substance. There was increased prevalence of substance abuse in those whose age of substance use was early and in those from divorced families. On the other hand, the prevalence of substance abuse was lower amongst those who frequently participated in religious activities. Therefore efforts should be made to engage adolescents in meaningful activities especially in early ages an act which may deter them from exposure to substance use.

Funding

The authors received no direct funding for this research.

Authors contributions

All three authors contributed to the conceptualization of the study. OUA (Department of Pediatrics, Federal Teaching Hospital Abakaliki) was the project leader. OUA led in data collection and wrote up the initial draft of the manuscript while NCO (University of Nigeria Teaching Hospital Enugu) and RCI (University of Nigeria Teaching Hospital Enugu) supervised the process of data collection and write-up, reviewed the statistics and corrected the reviewed manuscript. The final manuscript was read and approved by all authors.

Competing Interests

The authors declare no competing interests.

Author details

Onyinye U. Anyanwu¹
E-mail: onyinyeanyanwugc@gmail.com

Roland C. Ibekwe²
E-mail: roland_ibekwe@yahoo.com

Ngozi C. Ojinnaka²
E-mail: ngojimed@yahoo.com

¹ Department of Pediatrics, Federal Teaching Hospital Abakaliki, Abakaliki, Ebonyi State, Nigeria.

² Department of Paediatrics, University of Nigeria/University of Nigeria Teaching Hospital Ituku Ozala Enugu, Ituku Ozalla, Enugu State, Nigeria.

Citation information

Cite this article as: Pattern of substance abuse among adolescent secondary school students in Abakaliki, Onyinye U. Anyanwu, Roland C. Ibekwe & Ngozi C. Ojinnaka, *Cogent Medicine* (2016), 3: 1272160.

References

- Abdulkarim, A. A. (2004). Opinion of adolescents on how best to tackle the problem of drug abuse among students. *Nigerian Journal of Paediatrics*, 31, 144–145.
- Abiodun, O. A., Adelekan, M. L., Ogunremi, O. O., Oni, G. A., & Obayan, A. O. (1994). Pattern of substance use amongst secondary school students in Ilorin, Northern Nigeria. *West African Journal of Medicine*, 13, 91–94.
- Abiodun, O. A., Adelakan, M. L., Ogenremi, O. O., Oni, G. A., & Obayan, A. O. (1994b). Psychosocial correlates of alcohol, tobacco and cannabis use amongst secondary school students in Ilorin Nigeria. *West African Journal of Medicine*, 3, 213–217.
- Anochie, I. C., & Nkanginieme, K. E. O. (2000). Social correlates of drug use among secondary school students in Port Harcourt, Southern Nigeria. *Sahel Medical Journal*, 3, 87–92.
- Anochie, I. E., Nkanginieme, K. E. O., & Alikor, E. A. D. (1999). Drug abuse among secondary school students in Port-Harcourt Metropolis. *Nigerian Medical Journal*, 8, 17–23.
- Ayuba, N. L., & Audu, D. M. (2003). Illicit drug abuse among children and adolescents in Jos Nigeria. *Highland Medical Research Journal*, 1, 18–22.
- Belfer, M. L. (2003). *International child and adolescent mental health review* (pp. 17–22). Geneva: WHO, Department of Mental Health and Substance Dependence.
- Betencourt, O. A., & Herrera, M. M. (2006). Alcohol and drug problems and sexual and physical abuse at three urban high schools in Mthatha. *South African Family Practice*, 48, 17–17c.
- Bronwyn, M., & Charles, D. H. P. (2005). Access to substance abuse treatment services for black South Africans: Findings from audits of specialist treatment. *African Journal of Psychiatry*, 8, 15–19.
- Egbuonu, I., Ezechukwu, C. C., Chukwuka, J. O., & Unakwe, R. (2004). Substance abuse among female secondary school students in Anambra State, South Eastern Nigeria. *Nigerian Journal of Clinical Practice*, 7, 53–55.
- Fatoye, F. O. (2003). Psychosocial correlates of substance use amongst secondary school students in South Western Nigeria. *East African Medical Journal*, 80, 154–158.
- Fatoye, F. O., & Morakinyo, O. (2002). Substance use among secondary school students in rural and urban communities in South Western Nigeria. *East African Medical Journal*, 79, 299–305.
- Goodman, E., & Huang, B. (2002). Socioeconomic status, depressive symptoms, and adolescent substance use. *Archives of Pediatrics & Adolescent Medicine*, 156, 448–453. <http://dx.doi.org/10.1001/archpedi.156.5.448>
- Greydanus, D. E., & Patel, D. R. (2003). Substance abuse in adolescents: A complex conundrum for the clinician. *Pediatric Clinics of North America*, 50, 1179–1223. [http://dx.doi.org/10.1016/S0031-3955\(03\)00079-8](http://dx.doi.org/10.1016/S0031-3955(03)00079-8)
- Igwe, W. C., Ojinnaka, N., Ejiogor, S. O., Emechebe, G. O., & Ibe, B. C. (2009). Socio-Demographic correlates of psychoactive substance abuse amongst secondary school students in Enugu Nigeria. *European Journal of Social Sciences*, 12, 277–283.
- Lamptey, J. J. (2005). Socio-demographic characteristics of substance abusers admitted to a private specialist clinic. *Ghana Medical Journal*, 39, 2–7.
- McArdle, P. (2004). Substance abuse by children and young people. *Archives of Disease in Childhood*, 89, 701–704. <http://dx.doi.org/10.1136/adc.2003.040584>
- Ngesu, L. M., Ndiku, J., & Masese, A. (2008). Drug dependence and abuse in Kenyan secondary schools: Strategies for intervention. *Educational Research and Reviews*, 3, 304–308.
- Obot, I. S. (1993). The epidemiology of tobacco and alcohol abuse in Nigeria. In I. S. Obot (Ed.), *Epidemiology and control of substance abuse in Nigeria* (pp. 67–87). Jos: Centre for Research and information on Substance Abuse (CRISA).
- Odejide, A. O., & Olatawura, M. O. (1977). Alcohol use in a Nigerian rural community. *African Journal of Psychiatry*, 12, 69–74.
- Odejide, A. O., Ohaeri, J. U., Adelakan, M. L., & Ikuesan, B. A. (1989). Alcohol treatment system in Nigeria. *Alcohol Alcoholism*, 24, 347–353.
- Okike, C. O. (2009). *Prevalence of substance abuse among secondary school adolescents in Abakaliki, Ebonyi state, South Eastern Nigeria*. Dissertation: West African College of Physicians.
- Okonkwo, K. O. B., Ezeani, P. O., Ihezue, U. H., & Nwagbo, D. F. E. (1999). Psychoactive substance abuse amongst an urban secondary school population in Enugu, Nigeria: Prevalence and pattern of use. *Journal of Medical College*, 4, 24–26.
- Okwaraji, F. E. (2006). Substance abuse among secondary school adolescents in Enugu. *Journal of Medical College*, 1, 130–155.
- Shehu, A. U., & Idris, S. H. (2008). Marijuana smoking among secondary school students in Zaria, Nigeria: Factors responsible and effects on academic performance. *Annals of African Medicine*, 7, 175–179. <http://dx.doi.org/10.4103/1596-3519.55657>

Smart, R. G., Hughes, H. S., & Johnson, L. D. (1980). *A methodology for students' drug use surveys* (pp. 35–52). Geneva: Who Offset Publications, WHO.

United Nations Population Fund. (2003). *State of the world population. Making 1 billion count: Investing in adolescent's health and rights*. Retrieved August 3, 2012, from <http://www.unfpa.org/swp/2003/english/ch1/index.htm#1>

Wu, L., Woody, G. E., Yang, C., Pan, J., & Blazer, D. G. (2011). Racial/ethnic variations in substance-related disorders amongst adolescents in the United States. *Archives of General Psychiatry*, 68, 1176–1185.
<http://dx.doi.org/10.1001/archgenpsychiatry.2011.120>



© 2016 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



Cogent Medicine (ISSN: 2331-205X) is published by Cogent OA, part of Taylor & Francis Group.

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

