ALCOHOL AND PSYCHOACTIVE SUBSTANCE USE AMONG MEDICAL STUDENTS OF THE UNIVERSITY OF ILORIN, NIGERIA

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Abstract

The study was aimed at determining the prevalence and predictive factors associated with alcohol and other psychoactive substance use among medical students of the University of Ilorin. A self administered interview schedule consisting of WHO Students Drug Use Survey Questionnaire, and the General Health Questionnaire-12 were administered to a weighted proportionate sample of the respondents. The most currently used substances were mild stimulants (19.4%), alcohol (12.5%), hypnosedatives (3.4%), tobacco (1.7%), cannabis (1.7%), opioids (0.9%) and organic solvents (0.4%). Parents' alcohol use, respondents perceived harm of alcohol use, level of religiosity, peers' influence were found to have significant association with current alcohol use. There was no significant association between respondent's perceived harm of substance use and current use of tobacco, hypnosedatives, mild stimulants and cannabis.

Eighty five percent of respondents had a GHQ score of 0-2 (negative) while 14.7% had a score of 3-12 (positive). There was no significant association between psychiatric morbidity on one hand and current or lifetime substance use on the other. We concluded that while the prevalence of current use of some psychoactive substances has reduced over the past 6 years, others have increased. It was suggested that planners of medical education should continue to lay emphasis on the risks of psychoactive substance use as part of the medical school curriculum. Other governmental and non-governmental bodies should also continue to plan and implement campaigns against substance use, not only among medical students, but the society in general.

Keywords: Alcohol and substance use, medical students, Ilorin, Nigeria

Introduction

Globally, substance use has become a major public health issue (Owoaje & Bello, 2010). The United Nations Office for Drugs Control and Prevention estimated that between 155 and 250 million people or 3.5% to 5.7% of the world's population aged 15-64 have used drugs at least once in the last 12months (UNODC 2010). For most of European and Asian countries, opiates continue to be the main drug of abuse and account for 62% of all treatment demands. In South America, drug related treatment continues to be mainly linked to the use of cocaine (59% of all treatment demand). However, in Africa, the bulk of all treatment demand is linked to cannabis (64%) (WHO 2004).

There is an increasing trend in psychoactive substance use and abuse in many African countries (Adelekan et al, 2000, Reddy et al, 2007). In Nigeria, for example, where substance abuse was uncommon many decades ago, there are today ample visual evidence of drugs use on the roadsides and motor parks of most urban centers where young adults could be seen using marijuana (Rasheed & Ismaila 2010). Industrialization, urbanization and increased exposure to western life style has been noted to contribute to the increasing trend of substance use in Nigeria with alcohol and cigarette acting as gateway drugs to the use of other substances like cocaine, heroin, amphetamine, inhalants and hallucinogens (Abiodun et al, 1994).

Youths have been identified as a high risk group for the use of psychoactive substances. The use of these substances is not only a threat to their health but also to the health and social wellbeing of their families and society (UNODC, 2004, Owoaje & Bello, 2010). Substance experimentation is common in adolescence and substantially elevates the risk for persistent substance use disorders and other comorbid disorders in later life stages (Riggs et al, 2007, Winters et al, 2008). Among the youth, students are particularly involved and several studies have reported alarming rates of substance abuse in students' populations (Makanjuola et al, 2007, Oshodi et al 2010). Some factors have been associated with substance use among the youths and include; substance availability, accessibility, poor mental health, high social class, unhealthy family background, perceived adult drug use, peer's use of substances, poor academic achievement, desire to remain awake at night, conflicts with parents, emotional distress, low sense of social responsibility, its use in local films and videos and low level of religiosity (Aina & Olorunshola, 2008; Rasheed, 2010). The risk of substance use is further increased in the university environment which provides young people with freedom from parental supervision, thus providing the opportunity to experiment with different harmful practices (Owoaje & Bello, 2010).

Abuse of alcohol and other psychoactive substances has been reported to contribute to the increase in incidence of some psychosocial

problems among the youth (Olfson et al, 2000). Adolescent substance use is also associated with numerous functioning difficulties at age 30 years, some of which appear to be related to recurrent substance use disorder, co-morbid adolescent psychiatric disorder or functioning problems which were already evident in adolescent (Rhode et al, 2007).

Among undergraduates, due to alcohol and substance use, nearly 25% of them have reported academic difficulties such as poor test performance, excessive absences from class, poor concentration, and lower grade point. Also, people who drink and use drugs are more likely to engage in risky behaviours such as unprotected sexual encounters, driving under the influence, and engaging in violent behaviours. More importantly, individuals who regularly engage in drug and alcohol are more likely to die at an earlier age (USDEOSDFS, 2002). Studies have shown that people with substance use disorder are more likely to have a psychiatric disorder than people without substance use disorder (Regier et al, 1990).

In Nigeria, despite the preventive governmental policies, substance use has continued to increase among the youth especially among university students (Owoaje & Bello, 2010). Drug use has also been associated with unplanned sexual activity, physical and sexual assault, criminal activities, poor academic performance and cognitive impairment (Hanson & Ihezue, 1988, Engs 1992, Presley et al, 1993). An understanding of the prevalence, factors associated with substance use, and its effects is therefore necessary in order to implement more effective treatment and prevention programmes that will discourage substance use. This study therefore strives to, one; determine the prevalence of substance use and psychiatric morbidity among medical students of the University of Ilorin and, two; determine the socio-demographic factors associated with the use of psychoactive substances among the students.

Method:

The study setting: The study was carried out at the University of Ilorin, a federal government owned tertiary institution located in Ilorin, Kwara state, north central Nigeria. Ilorin, the capital of Kwara state and has a population of 777,667 (NPC, 2006). The University of Ilorin has 12 faculties, two of which are in the medical school (faculties of Basic medical sciences and faculty of clinical sciences). There are 7 departments in the faculty of Basic Medical Sciences and 11 departments in the faculty of Clinical Sciences with a total student enrolment of 2,175 for 2011/2012. The faculty of Basic medical sciences had an enrolment of 558 (336 males and 222 females) while the faculty of Clinical sciences had an enrolment of 1617 (1142 males and 475 females). The undergraduate degree programmes in the medical school run for 5 or 6 years depending on mode of entry.

Sampling frame: All registered undergraduate students (2,175) of the faculties of basic medical sciences and clinical sciences of the University of Ilorin for 2011/2012 academic year constituted the study population.

Sample size determination: For drug surveys among student population, 10% of the study population has been recommended (Smart et al, 1980). Since the total undergraduate enrolment for the medical school for the 2011/2012 academic year was 2,175 students, approximately 218 medical students were therefore targeted to participate in the study. However, this figure was raised to 240 (218+22) to adjust for 10% attrition rate.

At the level of the faculties, a weighted sample of respondents was determined. At each level, after due consultations and arrangement for suitable time, a random sample of respondents who consent to partake in the study were interviewed using the sociodemographic data collection sheet, the WHO Students Drug Use Survey Questionnaire (Smart et al, 1980), and the General Health Questionnaire -12 (GHQ-12) (Goldberg et al, 1988). The WHO Students Drug Use Survey Questionnaire and the 12-item version of GHQ has been previously used and validated in Nigeria (Adelekan & Odejide, 1989). In this study, scores were calculated using the GHQ scoring method (0-0-1-1) with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1. A cut-off point of 3 and above was indicative of probable psychiatric morbidity as recommended in previous studies (Abiodun & Parakoyi, 1992).

Biomedical ethical considerations: Approval for the study was obtained from the Ethics and Research Committee of the University of Ilorin Teaching Hospital, Ilorin (Ref UITH/CAT/189/14/278 dated 29/11/2011). Permission to carry out the study was obtained from the management of University of Ilorin. The Informed consent of each respondent was also sought and only those who gave formal consent were recruited into the study.

Pilot test: A pilot study was carried out among 20 students of Kwara state polytechnic, Ilorin (another tertiary institution in the town), who gave consent to participate in the study. This was to determine the acceptability, clarity or ambiguity of the questionnaire items.

Data analysis: Data was analyzed using Epi-info version 6.0.4. Frequency tables were generated. The level of statistical significant was set at 5% confidence limit for two tailed test. The outcome variables (psychiatric morbidity) were categorized into presence or absence of psychiatric morbidity using a cut-off point of 3. Chi-square test and odds ratio were used to determine the association between substance use and psychiatric morbidity.

Result

Sociodemographic characteristics: Table 1 shows the sociodemographic characteristics of the respondents. Two hundred and thirty two respondents completed the interview. Two hundred and thirty two respondents gave consent to partake in the study. This comprised of 152 (65.5%) clinical students and 80 (34.5%) basic medical students. One hundred and fifty seventy (67.7%) were males while 75 (32.3%) were females. Their ages ranged from 16-32 with a mean of 22.3±2.9years. One hundred and fifty two (65.5%) were in the clinical year while 80 (34.5%) were in the basic medical school. Majority of the students had both parents belonging to the upper socioeconomic class (groups I and II). Majority (70%) of the students' parents also completed tertiary school education and were married and living together (72%) in a monogamous family (79%). About 85% had friendly relationship with their fathers while 95% had friendly relationship with their mothers. A higher proportion of the students (54%) claimed they had study difficulty while 46% claimed they did not.

Prevalence of substance use: Table 2 shows the prevalence of substance use among the respondents. In decreasing order, the most currently used substances were mild stimulants (19.4%), alcohol (12.5%), hypnosedatives (3.4%), tobacco (1.7%), cannabis (1.7%), opioids (0.9%) and organic solvents (0.4%). None of the respondents reported the use of cocaine and hallucinogens. The lifetime use of mild stimulants was the most frequent (46.1%) followed by alcohol (39.7%) and tobacco (6%).

Table 3 shows the current use pattern of psychoactive substances among the respondents. None of the respondents claimed to use any of the drugs daily except one respondent who claimed to use opioid daily. The use of the psychoactive drugs was therefore limited to weekly and monthly use. Among those who use tobacco, 2 (50%) used it weekly, 4 (13.8%) used alcohol weekly while 6 (13.3%) used mild stimulants weekly.

Psychosocial factors associated with current use of psychoactive substances: The association between current use of substances and sociodemographic characteristics of respondents listed in Table 1 was done. There was significant association between current tobacco use and father's occupation (χ^2=18.4; p=0.005). Current alcohol use was significantly associated with level of religiosity (χ^2=26.17; p=0.000) and order of birth (χ^2=10.5; p=0.014). Current mild stimulant use was significantly associated with relationship with father (χ^2=6.7; p=0.035) and academic level (χ^2=12.7; p=0.002). Hypnosedative use was significantly associated with age (χ^2=11.95; p=0.003), father's level of education (χ^2=8.12; p=0.04) and relationship with colleagues (χ^2=6.01; p=0.014). There was significant association between current cannabis use and relationship with colleagues (χ^2=6.3; p=0.012).

Relationship between substance use by respondents and substance use by relatives and peers:
Respondents current use of alcohol was significantly associated with father's alcohol use (χ^2=16.8; p=0.000), mother's alcohol use (χ^2=39.2; p=0.000), sibling's alcohol use (χ^2=22.1; p=0.000) and best friend's alcohol use (χ^2=40.3; p=0.000).

Respondents current use of tobacco was significantly associated with father's tobacco use (χ^2=60.52; p=0.000), mother's tobacco (χ^2=125.1; p=0.000), sibling's tobacco use (χ^2=32.3; p=0.000) and best friend's tobacco use (χ^2=12.64; p=0.002).

Respondents current use of hypnosedatives was significantly associated with siblings hypnosedative use (χ^2=19.9; p=0.000), respondents cannabis use was significantly associated with siblings' cannabis use (χ^2=12.8; p=0.002) while respondents current stimulant use was significantly associated with best friend's stimulant use (χ^2=13.4; p=0.001).

Relationship between respondents current substance use and perceived harm of substances by respondents: There was significant association between respondents current use of alcohol and respondents perception that alcohol is harmful (χ^2=13.02; p=0.005). There was no significant association between respondents current use of tobacco and its perceived harm (χ^2=0.41; p=0.09); current use of hypnosedatives and its perceived harm (χ^2=3.11; p=0.34); current use of mild stimulants and its perceived harm (χ^2=3.3; p=0.35) and current use of cannabis and its perceived harm (χ^2=0.5; p=0.93).

Association between respondents current substance use and perceived availability of substances: There was no significant association between perceived availability of substances and respondents' current use of alcohol (χ^2=1.9; p=0.6), cannabis (χ^2=6.02; p=0.1), hypnosedatives (χ^2=1.2; p=0.8) and mild stimulant (χ^2=3.5; p=0.32).

Prevalence of psychiatric morbidity and its association with current substance use: One hundred and ninety eight (85.3%) had a GHQ score of 0-2 (negative) while 34 (14.7%) had a score of 3-12 (positive). There was no significant association between psychiatric morbidity on one hand and current or lifetime substance use on the other.

Discussion
The demographic profile of the respondents showed that a significant proportion were young, from upper socioeconomic class as reflected by parents occupation, they are from fairly large and stable families and they had good relationship with parents, siblings and peers. Majority (69%) claimed they are highly religious. This observation is not too different from

what was found in other studies among medical students in Nigeria (Makanjuola et al, 2007, Aweh 2012).

Mild stimulants were the most currently used substance (19.4%). Six years earlier, among medical students in University of Ilorin, a current use prevalence of 33.3% was found. (Makanjuola et al, 2007). Also, in this study, the current use prevalence of alcohol was 12.5% which is comparable with the 13.6% reported earlier by Makanjuola et al in 2007. It will appear that the current use prevalence for cannabis has doubled between 2007 and 2013 from 0.6% to 1.7% respectively while current use of tobacco has decreased from 3.2% to 1.7% within the same period. As previously reported in 2007, cocaine and heroin were not being currently used by medical students in university of Ilorin. While it is reassuring that prevalence of current use of substances has reduced, some have actually increased while some have not changed significantly over the past 6 years. It is therefore important that more efforts be made to further reduce the prevalence of substance use through drug health education and maintenance of protective factors.

Only fathers' occupation and relationship with peers appear significantly associated with tobacco use. More of the students with better relationship with peers and those whose fathers had higher income by virtue of their jobs tend to use tobacco. This might suggest that such students had more money to spend and have a lot of peer influence. The importance of peer influence and high income has been previously reported as factors associated with drug use among students (Adelekan et al 2001).

Current use of alcohol was significantly associated with level of religiosity and birth order. Respondents who were more religious tend to use alcohol less. Though the inverse relationship between alcohol and religiosity in this study had been previously reported (Adelekan 1993, Adelekan et al 2001, Sajo 2013), other studies have shown that religiosity may not actually be important if the spirituality component is removed (Allen 2009). A recent study among tanker drivers in Ilorin and Lagos, Nigeria, showed that there was no significant relationship between religiosity and current use of alcohol and tobacco (Makanjuola 2014). This will suggest a need to further examine the relationship between spirituality/religiosity and substance use especially in Nigeria where the current observation among worshipers tend to suggest a disconnect between level of spirituality and level of religiosity.

There was significant association between current use of mild stimulants and respondent's age as younger respondents (15-24 years) tend to be users compared with older ones. This might be related to better reading techniques and ability to stay awake without use of mild stimulants such as caffeine and kola nuts by older students. The use of mild stimulants has been reported in previous studies (Abiodun et al 1994, Adelekan et al, Makanjuola

2007, 2001, Aweh 2012,). The use of mild stimulant has also been closely related to use of hypnosedatives to step down or reverse the effect of the mild stimulants (Adelekan et al, 2000).

This study shows the importance of parents, siblings and peers alcohol/tobacco use as a significant influencing factors in the use of alcohol/tobacco by the respondents. The use of hypnosedatives and cannabis by siblings was significantly associated with respondents' use of same substances. This will further underscore the influence of significant others (parents, siblings and peers) as a predisposing factor to substance use and to continuously emphasize the need for parents to show examples to their children as it relates to substance use (Graham et al 2006, Dick 2006, Kohnke 2007).

Perceived harm of alcohol and cigarette were significantly associated with their current use. Studies have shown that respondents with higher knowledge of harm being associated with these substances tend to be non-users. In Nigeria, while some studies found that perceived harm of a substance could be a deterrent to its use (Fatoye 2007), others reported contrary findings similar to what we found in this study (Abiodun et al, 1994). These contradicting findings will suggest a need for further studies among medical students. The findings will be more comparable if similar study design and analytical methods are used.

Perceived availability of substances was not found to be significantly associated with use of alcohol, cannabis, stimulants and hypnosedatives. This finding is different from previous reports where there was a direct relationship between perceived availability and substance use (Maddux et al, 1986, Abiodun et al, 1994, Tawasu et al, 2005, Aweh, 2012). It has been reported that 53.4% lifetime users of cigarette believed that cigarette was very easy to obtain compared to 6.8% lifetime users that felt cigarette was probably impossible to get. Also, majority of lifetime users of cannabis believed that it was very easy to obtain (Abiodun et al 1994).

The prevalence of psychiatric morbidity in this study was 14.7% which is lower than the rate of 20.2% found among undergraduates in University of Ilorin (Issa et al 2010) and a rate 0f 17-25% among general adult population in Nigeria (Amoran et al, 2005). The prevalence in our study is also much lower than 59.9% that what was found among medical students in Egypt (Zaki et al, 2010). Differences in individual vulnerability and sociocultural characteristics of the samples studies might also have accounted for the observed differences.

There was no significant association between psychiatric morbidity and current use of substances. This finding is contrary to a report of strong relationship between alcohol use and psychiatric morbidity (Dome et al 2005, Boys et al, 2003). While some studies reported association between

psychotic disorders, including depression and cannabis use (Rey et al, 2002, Fergusson et al, 2002), others did not (Degenhardt et al, 2003, Phillip et al, 2002). It would appear therefore, that cannabis use may not be a direct cause of mental illness even though a high dose could cause negative psychological reactions. Also, in people already predisposed to mental illness, other personal factors in the presence of cannabis may shift the balance towards illness.

This study found a significant association between current use of stimulants and psychiatric morbidity which is in keeping with results of previous studies that reported association between stimulant abuse and brain fag syndrome (Prince 1960, Morakinyo 1980). However, a previous study in Enugu, Nigeria found no association between stimulants use and psychiatric morbidity (Igwe et al, 2010). The difference in methodology and instrument used in both studies may account for this difference.

Conclusion

While the prevalence of current use of some psychoactive substances has reduced over the past 6 years, others have increased. We suggest that planners of medical education should continue to lay emphasis on the risks of psychoactive substance use as part of the medical school curriculum. Other governmental and non-governmental bodies should also continue to plan and implement campaigns against substance use not only among medical students, but the society in general.

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Table 1: Sociodemographic characteristics of respondents N=232

VARIABLES	NUMBER OF RESPONDENTS	PERCENTAGE
Gender		
Female	75	32.3
Male	157	67.7
Age (years)		
Range	16-36	
Mean	22.3	
S.D	±2.9	
16-20	54	23.3
21-25	154	66.4
26-30	21	9.1
Faculty		
Basic Medical Sciences	152	65.5
Clinical Sciences	80	34.5
Academic Level		
100	27	11.6
200	29	12.5
300	27	11.6
400	70	30.2
500	22	9.5
600	57	24.6
Fathers Occupation		
Group I	77	33.2
Group II	97	41.8
Group III	37	15.9
Group IV	8	3.4
Group V	3	1.3
Group VI	3	1.3
Dead	7	3.0
Mothers Occupation		
Group I	41	17.7
Group II	112	48.3
Group III	35	15.1
Group IV	2	0.9
Group V	32	13.8
Group VI	8	3.4
Dead	2	0.9
Father's Educational Level		
No formal education	11	4.7
Adult/primary	14	6.0
Secondary	25	10.8
Tertiary	182	78.4
Mother's educational Level		
No formal education	12	5.2
Adult/primary	25	10.8
Secondary	31	13.4
Tertiary	164	70.7

Father alive		
Yes	203	87.0
No	29	13.0
Mother Alive		
Yes	216	93.1
No	16	6.9
Father's Living Children		
1-4 children only	115	49.6
5-9 children	93	40.1
>9 children	24	10.3
Mother's living children		
1-3 children only	63	27.2
4-7 children	161	69.4
>7 children	8	3.4
Parents' Marital Status		
Married and Together	168	72.4
Married but living apart	10	4.3
Not applicable (One or both parent are dead)	41	17.7
Separated/ Divorced	13	5.6
Father's wives currently		
None at all	14	6.0
One wife	185	79.7
Two wives	14	6.0
More than two wives	19	8.1
Position among father's children		
First child	84	26.6
Second child	78	19.9
Third child	44	16.6
Fourth child or more	26	36.9
Relationship with father		
Friendly	202	84.8
Not around/dead	21	9.6
Not friendly	9	5.6
Relationship with mother		
Friendly	218	94.4
Not around/dead	10	4.1
Not friendly	4	1.5
Relationship with siblings		
Friendly	230	98.1
No brother/sister	1	0.6
Not friendly	1	1.3
Relationship with lecturers		
Friendly	176	85.0
Not friendly	56	15.0
Relationship with schoolmates		
Friendly	230	98.6
Not friendly	2	1.4
Study difficulty		

Absent	120	45.9
Present	112	54.1
Mental health		
Good	205	90
Average	27	9.5
Poor	0	0.5
Domicile during School Term		
At Home with parents	16	7.4
Off Campus	127	64.2
On Campus	83	24.8
With friends	2	0.6
With Relatives or Guardian	4	3.0
Religiosity		
Very religious	170	68.9
Just religious	56	28.7
Not religious	6	2.4

Table 2: Prevalence rates of substance use. N=232

SUBSTANCE USE	CURRENT USE (%)	PAST USE (%)	LIFETIME USE (%)
Cigarettes	4(1.7)	10(4.3)	14(6.0)
Alcohol	29(12.5)	63 (27.2)	92(39.7)
Indian Hemp	4(1.7)	4 (1.7)	8 (3.4)
Stimulants	45 (19.4)	62(26.7)	107 (46.1)
Hypnosedatives	8 (3.4)	17(7.3)	25 (10.8)
Opioids	2 (0.9)	1 (0.4)	3 (1.3)
Cocaine	0	0	0
Hallucinogen	0	0	0
Organic Solvents	1 (0.4)	6(2.5)	7(3.0)

N= Number of respondents; Past use = used before but stopped more than 12 months ago

Table 3: Current use pattern of substances

SUBSTANCE	N	DAILY N1 (%)	WEEKLY N2 (%)	MONTHLY N3 (%)
Cigarettes	4	0	2(50.0)	2 (50.0)
Alcohol	29	0	4 (13.8)	25 (86.2)
Indian Hemp	4	0	1(25.0)	3(75.0)
Stimulants	45	0	6 (13.3)	39(86.7)
Hypnosedatives	8	0	2 (25.0)	6(75.0)
Mild analgesics	123	0	16 (13.0)	107 (87.0)
Antibiotics	83	0	5 (6.0)	78(94.0)
Opioids	2	1 (50.0)	0	1 (50.0)
Cocaine	0	0	0	0
Hallucinogen	0	0	0	0
Organic Substances	1	0	0	1(100.0)

Monthly use is 1-2 times per month; weekly use is 2-3 times per week; % in row brackets
N= Total number of current users; N1 = Number of daily users; N2 = Number of weekly users
N3=Number of monthly users; Opioids (Heroin, Morphine and Pethidine)