SUBSTANCE USE AMONGST SECONDARY SCHOOL STUDENTS IN RURAL AND URBAN COMMUNITIES IN SOUTH WESTERN NIGERIA

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ABSTRACT

Objectives: **To determine the prevalence and pattern of drug use among secondary school students in rural and urban communities in south western Nigeria.**

Design: **A survey of senior secondary school students for drug use using a modified form of the World Health Organisation (WHO) questionnaire for student drug use surveys after a pilot study.**

Setting: **Rural and urban communities in two local government areas in Ilesa, Osun State in south western part of Nigeria.**

Subjects: **A total of 600 students drawn from six secondary schools.**

Main outcome measures: **Prevalence rates of drugs use, drug use pattern by sex, class, urban/rural location of school and age of initiation into drug use.**

Intervention: **Determination of drug use prevalence rates and pattern under anonymous condition.**

Results: **Questionnaires of 567 respondents were analysed. Their mean age was 17.0 years (S.D±1.69). The most commonly used drugs and their current prevalence rates were salicylate analgesics, 48.7%; stimulants, 20.9%; antibiotics, 16.6%; alcohol, 13.4%; hypnosedatives, 8.9% and tobacco, 3.0%. Current and lifetime use of alcohol as well as current, past and lifetime use of tobacco occurred significantly more commonly among the males. Past and lifetime use of tobacco was significantly more common in the rural school. For the majority of respondents, initiation into drug use started at a very early age (14 years or below). The majority were mild current users of the drugs, except tobacco for which the majority were daily users.**

Conclusion: **Secondary school students in south western Nigeria engage in use of commonly available drugs like their counterparts elsewhere. Stringent measures should be taken to effect supply and demand reduction.**

INTRODUCTION

Despite the fact that studies on students' drug use pattern started over four decades ago in Nigeria, no comprehensive data exist from which a reliable national picture of the problem can be constructed. Earlier studies were largely confined to a segment of the country and were hospital-based. They served to draw the attention of health professionals and government agencies to the need for more widespread surveys for meaningful intervention(1-3).

More recent studies have been more informative, employing epidemiological techniques to survey the pattern of drug use, psychosocial correlates of drug use, and changing trends in drug use amongst secondary school students(4-9). Commonly abused substances from the reports of these studies include alcohol, hypnosedatives, tobacco and stimulants(4,5,8,9). Common abuse of salicylate analgesics and antibiotics

was also reported by some of these authors(4,5,8). However, these studies have reported low use of cannabis amongst secondary school students(4,5,9). Hard drugs such as cocaine, heroin, organic solvents and hallucinogens have also either been reported as not used or used at low rates(4,5,9). The reported low use of cannabis is surprising in view of the clinical experience of health care personnel practicing in the country. Students account for the bulk of consultations for cannabis-related psychiatric problems seen in the clinics. The disparity between the data emanating from school surveys and clinical experience is probably due to a number of factors which include the fact that the surveys have been concentrated in only certain parts of the country. In addition, drug use rates can vary from one part of the country to another. The area in which the present study was conducted falls into the group of those which have either not been surveyed or have been under-surveyed. This study was therefore carried

out to generate baseline data on students' drug use in the area to add to the body of information available from previous surveys in Nigeria.

MATERIALS AND METHODS

Setting of the study: The study was conducted in two local government areas which form part of the immediate catchment area subserved by the Teaching Hospital in which the authors work in Osun State, in south western Nigeria. One of the two local governments can be described as essentially constituted by urban communities whilst the other is constituted by rural communities.

At the time of the survey (3rd September to 5th November, 1997), there were 21 secondary schools in the two local government areas. Twenty of these schools were in the urban area while only one was located in a rural community. There were twenty co-educational schools and one 'girls only' school.

Procedure: The sample size required for this study (600) was determined using the statistical package for epidemiological information (EPI-INFO, version 5(10) based on the current prevalence rates of the substances surveyed. Allowance was also made for attritions and rejection of incomplete or badly completed questionnaires. The sample was selected as follows:

Random sampling technique was used to select four schools from the urban local government area. The only school from the rural local government and the only 'girls only' school from the other were included to make a total of six schools. The upper two forms in the schools (year 5 and year 6 students corresponding to Senior Secondary School Class 2 and Senior Secondary School Class 3) were selected for the study. Further stratification was done to select the arms of these classes that participated in the study followed by systematic random sampling technique to select the final sample ensuring a proportionate representation by sex for the co-educational schools.

The World Health Organisation (WHO) questionnaire for student drug use surveys(11) was used for this study. The questionnaire had previously been reported to have acceptable reliability and validity in this environment although it was suggested that the language of some aspects of the questionnaire should be modified and simplified to increase its validity(12). A preliminary survey conducted in September and October, 1997 in which one of the schools not selected for the study was used indicated that using local names of some of the items further increased the comprehension of the students. The questionnaire was modified along these lines. An item on the use of antibiotics and analgesics which was not in the WHO questionnaire was also included.

The questionnaire consists of three parts. The first part of six questions deals with socio-demographic characteristics of respondents. The second part consists of 16 major questions. The first 14 of these questions elicit the use of specific substances with each having four subsections such that current and lifetime use of drugs, frequency of use and age of initiation into use can be elicited. The list of drugs include tobacco, alcohol, cannabis, heroin and other opiates, cocaine, stimulants, hallucinogens, organic solvents and hypnosedatives. The last two questions of the second part are 'honesty questions' aimed at a rough assessment of the validity of the questionnaire. A typical honesty question is

phrased thus: 'if you had ever taken Indian hemp, would you have admitted it in this questionnaire'. The third part consists of optional items relating to drug use by respondents family members, friends and respondents knowledge of the harmful effects of drug use.

The instrument was administered in groups. Respondents were not allowed to communicate with each other during the exercise. Their teachers, though around were not allowed into the classrooms. The students were not requested to write their names on the questionnaires to conform to the pledge of anonymity as indicated on the instrument.

The computer programme, Epi Info version 5 was used to process the data.

RESULTS

Five hundred and sixty two questionnaires out of the 600 questionnaires that were administered were analysed. Thirty eight questionnaires were rejected on account of inconsistent responses and many missing data. There were 266(47.3%) males and 276(52.7%) females. Seventy two students (12.8%) were from the girls only school while 100 students (17.8%) were from the rural school. Two hundred and eighty respondents (51.2%) were in Senior Secondary School class 2 (SSS2) while the rest were in senior secondary school class 3 (SSS3). The age range of respondents was from 15 to 21 years, with a mean of 17.0 years (SD±1.69).

Nearly all respondents belonged to the two major religions (Christianity and Islam) in Nigeria with a preponderance of Christians (91.4%) over Muslims. Two hundred and thirty eight (43.1%) were from low socio-economic family background, 211(38.2%) from middle socio-economic background and 103 respondents (18.7%) were from upper socio-economic background (based on their fathers' occupational and educational background).

Prevalence and pattern of substance use: The past, current and lifetime prevalence rates of the substances surveyed are shown in Table 1. As shown in the Table, salicylate analgesics (such as aspirin) topped the list of most currently used drugs. This was followed by stimulants (such as caffeine), antibiotics (such as ampicillin), alcohol, hypnosedatives (such as diazepam) and tobacco. No current use was recorded for hallucinogens (such as lysergic acid diethylamide), heroin, pethidine, morphine and organic solvents. The range for current use of the substances was 0.2-48.7%.

Past users were also highest for salicylate analgesics followed by antibiotics, stimulants, alcohol, hypnosedatives and tobacco with low rates of past use recorded for hallucinogens, cocaine and cannabis. No past use was recorded for heroin, pethidine/morphine and organic solvents. The overall prevalence rate for past use was 0.4 - 23.4%. The overall lifetime prevalence rates for the substances ranged from 0.5% to 72.1%.

All psychoactive substances surveyed were further analysed on the basis of extent of current use (not

tabulated). For all substances except tobacco, majority of respondents were involved in mild use (monthly use). Sixty five respondents (55.6%) were engaged in mild use of stimulants, 46 respondents (61.3%) were engaged in mild use of alcohol, 36 respondents (72.0%) were engaged in mild use of hypnosedatives. The only respondent engaged in current use of cocaine and the only one for cannabis were all involved in mild use. Only four respondents (23.5%) were involved in mild use of tobacco. Respondents who were engaged in moderate use (weekly use) of the substances were as follows: stimulants, 30 respondents (32.5%); alcohol, 22 respondents (29.3%); hypnosedatives, 12 respondents (24.0%); and tobacco, three respondents (17.7%). Majority of respondents (10 respondents or 58.8%) were heavy users (daily users) of tobacco. Fourteen

respondents (12.0%) were heavy users of stimulants while seven respondents (9.3%) and two respondents (4.0%) respectively were heavy users of alcohol and hypnosedatives.

The pattern of use of some of the substances compared by sex is shown in Table 2.

As indicated in Table 2, no significant differences were found between the sexes on past, current and lifetime use of stimulants and hypnosedatives. Current use of alcohol was significantly higher among males (x^2 =14.7, p<0.001). Similarly lifetime use of alcohol was significantly higher among male respondents (x^2=7.1, p<0.01). Significantly more males than females were found to be past users of tobacco (x^2=6.7, p<0.01), current users of tobacco (x^2=12.6, P<0.001) and lifetime users of tobacco (x^2=18.1, p<0.001).

Table 1

Respondents drug use prevalence rates

Drug	Past use No. (%)	Current use No. (%)	Lifetime use No. (%)
Salicylate analgesics (n=559)	131 (23.4)	272 (48.7)	403 (72.1)
Stimulants (n=560)	93 (16.6)	117 (20.9)	210 (37.5)
Antibiotics (n=559)	98 (17.5)	93 (16.6)	191 (34.2)
Alcohol (n=560)	73 (13.0)	75 (13.4)	148 (26.4)
Hypnosedatives (n=559)	32 (5.7)	50 (8.9)	82 (14.7)
Tobacco(n=561)	30 (5.3)	17 (3.0)	47 (8.4)
Hallucinogens (n=551)	4 (0.7)	-	4 (0.7)
Cocaine (n=553)	2 (0.4)	1(0.2)	3 (0.5)
Cannabis (n=556)	2 (0.4)	1(0.2)	3 (0.5)
Heroin (n=554)	-	-	-
Pethidine/morphine (n=553)	-	-	-
Organic solvents (n=556)	-	-	-

Table 2

Pattern of use of some* of the psychoactive substances surveyed compared by sex

Drug	Sex	Past users No. (%)		Current users No. (%)		Lifetime users No. (%)	
Stimulants	M(n=265)	45	(17.0)	66	(24.9)	111	(41.9)
	F (n=295)	48	(16.3)	51	(17.3)	99	(33.6)
Alcohol	M(n=264)	35	(13.3)	53	(20.1)	88	(33.3)
	F (n=296)	38	(12.8)	22	(7.4)	60	(20.)
Hypnosedatives	M (n=264)	16	(6.1)	29	(11.0)	45	(17.0)
	F (n=295)	16	(5.4)	21	(7.1)	37	(12.5)
Tobacco	M(n=266)	22	(8.3)†	16	(6.0) †	38	(14.3) †
	F (n=295)	8	(2.7)	1	(0.3)	9	(3.1)

* = Not computed for other psychoactive substances because of their low prevalence rates.
† = X^2 with Yates correction

Table 3 indicates the pattern of drug use compared by school location.

For three substances (stimulants, alcohol and hypnosedatives), no significant differences in use were found whether the schools were located in urban or rural community. However, respondents from the rural school were significantly more past users of tobacco (X^2 = 9.4, p<0.01). The two groups were not significantly different for current tobacco use.

Table 4 shows the pattern of use of some of the substances compared by class. No significant differences in prevalence rates were recorded between the SSS2 and the SSS3 students.

Types of substances used by respondents: Kolanut, with 63.0% of users, topped the list of stimulants used by respondents. This was followed

by coffee (29.5%), amphetamine (4.5%) and ephedrine (2.9%). The most commonly used alcoholic beverage was palm wine with 60.1% of users. This was followed by beer (20.8%), locally fermented wine and locally distilled gin (14.7%) and other spirits (4.4%). Diazepam (valium) was the most commonly used hypnosedative with 67% of users. Chlordiazepoxide (Librium) was next with 19.6% of users followed by nitrazepam (Mogadon) with 13.4% of users. None of the respondents indicated ever using any barbiturate or other less common hypnosedatives. All respondents involved in tobacco use were smoking cigarettes.

Age at initiation into drug use by respondents: Table 5 the age of first use of substances by respondents

Table 3

Pattern of use of some* of the psychoactive substances compared by school location

Drug	Location of School	Past users No. (%)	Current users No. (%)	Lifetime users No. (%)
Stimulants	Urban (n=460)	76 (16.5)	97 (21.1)	173 (37.6)
	Rural (n=100)	17 (17.0)	20 (20.0)	37 (37.0)
Alcohol	Urban (n=461)	55 (11.9)	65 (14.1)	120 (26.0)
	Rural (n=99)	18 (18.2)	10 (10.1)	28 (28.3)
Hypnosedatives	Urban (n=461)	23 (5.0)	40 (8.7)	63 (13.7)
	Rural (n=98)	9 (9.2)	10 (10.2)	19 19.4)
Tobacco	Urban (n=461)	18 (3.9)	12 (2.6)	30 (6.5)
	Rural (n=100)	12 (12.0)	5 (5.0)	17 (17.0)

* = not computed for other psychoactive substances because of their low Prevalence rates.

Table 4

Pattern of use of some* of the psychoactive substances compared by class

Drug	Class	Past users No. (%)	Current users No. (%)	Lifetime users No. (%)
Stimulants	SSS2 (n=287)	38 (13.2)	54 (18.8)	92 (32.1)
	SSS3 (n=273)	55 (20.1)	63 (23.1)	118 (43.2)
Alcohol	SSS2 (n=288)	30 (10.4)	42 (14.6)	72 (25.0)
	SSS3 (n=272)	43 (15.8)	33 (12.1)	76 (27.9)
Hypnosedatives	SSS2 (n=286)	19 (6.6)	23 (8.0)	42 (14.7)
	SSS3 (n=273)	13 (4.8)	27 (9.9)	40 (14.7)
Tobacco	SSS2 (n=287)	16 (5.6)	8 (2.8)	24 (8.4)
	SSS3 (n=274)	14 (5.1)	9 (3.3)	23 (8.4)

* = not computed for other psychoactive substances because of their low prevalence rates.

Table 5

Age at initiation into drug use by respondents

Drug	≤14 years	15-18 years	≥19 years
Stimulants (n=210)	173 (82.4%)	35 (16.7%)	2 (1.0%)
Alcohol (n=145)	111 (76.6%)	32 (22.1%)	2 (1.4%)
Hypnosedatives (n=77)	57 (74.0%)	20 (26.0%)	-
Tobacco (n=43)	33 (76.7%)	10 (23.3%)	-
Hallucinogens (n=3)	1 (33.3%)	2 (67.7%)	-
Cocaine(n=3)	-	3 (100%)	-
Cannabis(n=2)	-	2 (100%)	-

*response rates on these items are less than response rates on corresponding drug use items.

As indicated in Table 5, initiation into use of most drugs started at an early age. The majority of respondents started using stimulants, alcohol, hypnosedatives and tobacco at age 14 years or below. There was a reduction in frequency of initiation into use of the four substances with increasing age. For hallucinogens, cocaine and cannabis initiation into use peaked at the age range 15-18 years.

DISCUSSION

About one out of every five respondents (20.9%) that participated in this study was found to be involved in current use of stimulants. Stimulants were only second to salicylate analgesics in the extent of both current and lifetime use. This widespread use of stimulants conforms with the findings of recent studies in Nigeria(4,5). The respondents did not differ on use when compared by sex, location of school or class. Previous studies have reported a positive relationship between stimulant use and preparation for examination by Nigerian students(2,5,13). Nigerian students tend to engage in excessive consumption of stimulants when examinations are approaching so as to keep awake and study for longer hours. Although the two classes surveyed had examinations to write at the end of the session (a few months from the time of the survey), the SSS3 students who had a more tedious external (final) examination to write did not differ in stimulant use from their SSS2 counterparts who had internal examination to write. The type of examinations, therefore, did not appear to be an important factor in students' stimulants use. The finding of this study concerning the type of stimulants used by the students also conforms with the finding of previous surveys elsewhere(4,5,13,14). Most of the respondents were involved in the use of mild, cheap and easily available stimulants. Trend change from the common use of stronger stimulants reported by some earlier studies (2,15) to the use of milder stimulants has been observed in the last two decades in Nigeria. During this period

stringent measures had been taken to control the availability of stronger stimulants by placing restriction on their sale by patent medicine shops and roadside hawkers. In addition, the government has recently issued stricter rules such that drug outlets are enforced to dispense such drugs only at the presentation of endorsed prescription by certified medical practitioners. Kolanut (containing caffeine) was the commonest used stimulant. Kolanut is widely cultivated in the area where the present study took place and is regarded as food for past time chewing (like khat) rather than drug. Stimulant use has been implicated in an illness the 'Brain fag' syndrome, first reported by Prince(16), and known to occur widely among students in Africa, south of the Sahara(13). This syndrome, which presents with inability to assimilate materials read, visual disturbances and somatic sensations such as burning sensation in the head while studying, is also associated with study difficulty and tends to lead eventually to high school drop out. This adverse effect on health and education of students in Africa and the increasing use of psychoactive drugs among youths, are a cause for concern.

The current and lifetime prevalence rates recorded for alcohol (13.4% and 26.4% respectively) are similar to reports from most previous surveys in the country(4,5). Alcohol is freely used in Nigeria particularly during festive periods and in social gatherings. The level of usage observed in this study may be seen as a reflection of its use in the society. For both current and lifetime use, males were significantly more users than females. While previous studies among university students have found a preponderance of male users(14,17) the findings among secondary school students have not been consistent. Although Adelekan(4) reported a male preponderance in 1989, more recent reports have failed to demonstrate this(5,8).

Similarly, there have not been consistent findings with respect to rural urban distribution of student alcohol use. The greater involvement in alcohol use by urban students reported by Abiodun *et al* (6) in 1994

is a sharp contrast to the finding of Adelekan and Ndom(8) in 1997 where a preponderance of rural students was reported. None of these findings was replicated in the present study. Urban and rural students did not differ significantly with respect to alcohol use.

In this study, the current prevalence rate recorded for hypnosedatives (8.9%) and the lifetime prevalence rate (14.4%) are comparable to the results of previous studies in the country(4,6). The pattern of use was similar with respect to sex, rural-urban school location and class. While some previous studies reported higher use of hypnosedatives among female secondary school students (4,9), more recent studies have not found any difference between the sexes among secondary school students(6,8) and among university students(14).

Between rural and urban students, consistent findings have also not been found in hypnosedatives use from previous surveys(4,5,8). The substances in this group most commonly abused are diazepam, chloradiazepoxide and nitrazepam. These drugs are commonly available in the country and obtainable from chemist shops and roadside hawkers. Although there is a decree which prohibits the hawking of certain drugs including hypnosedatives, it is not strictly enforced. Indiscriminate prescription by medical professionals has long been recognised as a factor enhancing availability(3).

The use of tobacco in the study group was predominantly a male activity. This conforms with previous reports from Nigeria(4,5,14,18). The current and lifetime prevalence rates (3.0% and 8.4% respectively) are also comparable to results from previous surveys among secondary school students(4,5,18). Although the students from the rural school did not differ from their urban counterparts with respect to current use, they were significantly more of past and lifetime users of tobacco. Abiodun *et al* had reported more rural involvement in tobacco use in Ilorin, Nigeria(6). Adelekan(4) did not find any significant difference in another Nigerian city. Most respondents who were engaged in current use of tobacco belonged to the 'heavy use' category unlike for other substances for which majority were mild users in conformity with previous reports(5,14,17).

The prevalence rates obtained for salicylate analgesics and antibiotics are comparable to other previous reports(4,5,7). Factors such as availability, self medication and lack of awareness of the health hazards of unsupervised use of these substances are obviously still in operation. It is a common belief that drugs in this category are capable of curing many ailments even without any justification for such a belief. More worrisome is the common practice of using common antibiotics for prophylaxis against infection immediately after meals when the source of the ingested food is questionable.

The low use of cannabis reported by the respondents, although consistent with previous reports(4,5,14,18), may not be a true reflection of its level of use. Cannabis use is not socially acceptable in Nigeria. Users are viewed as criminals and there is a legal sanction against its use. Although confidentiality was assured during the survey, the usefulness of this in minimising under-reporting of illegal drugs like cannabis may have been limited. Previous workers have attributed the seeming low rates of cannabis use to under-reporting(4,14).

The majority of respondents started using almost all substances at an early age (minimum age being 8 years) when most of them were still in the primary school. Other workers have reported a similar finding(4,5,14).

In conclusion, the prevalence and pattern of drug use among secondary school students in Osun State is similar to those reported from other states in the country. However there appears to be continuing inconsistency in the pattern of use of certain drugs particularly with respect to sex and rural-urban distribution. There is a need for more studies in different parts of the country, and in other parts of Africa, to build the picture of drug use among student populations in the region.

ACKNOWLEDGEMENTS

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