Descriptive National Survey of Substance Use in Nigeria

Taiwo Abosede Adamson[1], Adegboyega Oyekanmi. Ogunlesi[1], O Iufemi Morakinyo[2], Akinwande Owuladewa Akinhanmi[1], Peter Olutunde Onifade[1]*, Olayiwola Erinosho[3], Alfred A Adewuyi[4], David Adekunle Fasiku[5], Timothy Olaoluwa Adebowale[1], Adegboyega Ogunwale[1], Edward Babatunde Somoye[1] and O Iuniyi Olaniyan[1]

[1]Neuropsychiatric Hospital, Aro, Abeokuta, Nigeria
[2]Mental Health and Psychiatry, Department of Mental Health,University of Benin / UBTH, Benin City, Nigeria
[3]Health Sociology, Olabisi Onabanjo University, Ago Iwoye, Nigeria
[4]Demography and Social Statistics, Joseph Ayo Babalola University,Ikeji-Arakeji, via Ilesa, Nigeria
[5]National Population Commission, Abuja, Nigeria

Abstract

Objectives: Epidemiological data on alcohol and drug use in Nigeria were documented since the 1940's. These were, however, limited to specific population groups, had small sample sizes or did not adequately take into consideration the diverse geographical spread of the people, the ethnic diversity and the rural-urban variations. Therefore, this study aimed to survey the prevalence rates of drug use across all the geopolitical zones, including the sociocultural and the urban-rural divides, in Nigeria.

Methods: A cross-sectional survey of drug use was conducted in 2009 among Nigeria population aged 15-64 years and spread across the 6 geopolitical zones of the country. Adapted version of the World Health Organization Model Student Questionnaire was used for data collection. Analysis was descriptive.

Results: The response rate of 88.9% yielded 10,609 records for analysis. The majority of the respondents were males (52%), aged 25-34 years (29.6%), married (65.2%) and residing in the rural localities (53.0%). The drug with the highest prevalence rate of use was alcohol, (39%) lifetime, (30.3%) 12-month and (24.5%) 30 day. Cannabis was the most commonly used illicit drug with a lifetime use of 6.6%, 12-month of 2.6%, and 30 day of 1.8%. The prevalence rates of inhalants use were 6.8% lifetime, 3.9% 12-month and 3.2% 30-day. The geopolitical zones with the highest prevalence use of inhalants were the South-East and the North-Central zones. Tranquilizer use was highest in the South-West. Higher rates of drug use were generally associated more with the male gender and the urban localities.

Conclusions: The pattern of drug use in Nigeria varies across the geopolitical zones; therefore, the approaches and foci of drug intervention measures will also have to vary across this divide with considerations for the socio-cultural norms.

Abbreviations: AUDIT: Alcohol Use Disorder Identification Test; EAs: Enumeration Areas; FCT: Federal Capital Territory; GPS: Global Positioning Systems; ICAA: International Council on Alcohol and Addictions; IDU: Injecting Drug Use; LGAs: Local Government Areas; LSD: Lysergic Acid Diethylamide; NPC: National Population Commission; SPSS: Statistical Package for Social Sciences; TFW: Training of the Field Workers; TOT: Training of Trainers; UNDCP: United Nations International Drug Control Program

Introduction

There were no epidemiological data on alcohol and drug use in Nigeria, prior to the Second World War. In the 1940's, the abuse of drugs, such as amphetamine, phenobarbitone, pethidine, Lysergic Acid Diethylamide (LSD) and Cannabis were reported [1]. In the 1960s, isolated reports of drug abuse problems, were also reported by the few psychiatric hospitals at that time [2-6]. Subsequently, sporadic community surveys, such as the pioneering effort of Odejide [6], who surveyed a rural community in Western Nigeria, emerged. This was followed in 1988, by the International Council on Alcohol and Addictions' (ICAA) study in the urban and rural communities of five university towns in three, of the current six geopolitical zones [7]. It took another decade before the (1998) UNDCP-funded, multi-city; rapid situation analysis of drug problems in Nigeria was conducted [8]. This study was carried out in four geographically representative states. The study was followed closely by the (1999) Rapid situation assessment of drug abuse in Nigeria, also by the UNDCP, in which

19,550 community samples from twenty-two of the thirty-six states of the country were interviewed [8]. In 2002 - 2003 there was a household community survey on drug use among 6,752 participants in 21 states of Nigeria that covered 5 of the current 6 geopolitical zones [9].

These studies had some limitations. Though the ICAA study [7] analysed data from multiple sources in five states, the actual community survey was conducted in only two states. The (1999) UNDCP, Rapid Situation Assessment study did not have defined criteria for urban-rural classification of communities surveyed. The more inclusive, large sample size study in 2002 – 2003 did not evaluate the possible rural-urban differences of drug use [9].

Therefore, this study aimed to survey prevalence rates of drug use across geopolitical, socio-cultural and urban-rural communities in Nigeria.

*Corresponding author: Dr. Peter Olutunde Onifade, MB; BS, FMC Psych, Neuropsychiatric Hospital, Aro, Abeokuta, Nigeria, Tel: +234 803 506 1082; E-mail: oniffpo@yahoo.com

Methods

Setting

This descriptive cross-sectional survey of drug use was conducted (in 2009) as part of a larger study of drug use and mental health in Nigeria. As at 2006, the population of Nigeria was a little over 140 million, with a median age of 17.4 years: however, by the year 2013, the population, was estimated at 173.6 million [10].

Population

The target population for the study was the over 140 million population (census of 2006). who were aged 15-64 years, and spread across the 774 local Government Areas (LGAs) in the country. The LGA is the lowest of the three-tiers, of the administrative units in the country. The LGAs vary on many measures, which are socio-economic and developmental, among others. Some of the LGA's are predominantly urban, while others are predominantly rural. There are some difficulties in clearly classifying whether the majority of the LGA's are urban or rural. The National Population Commission (NPC), because of this difficulty, adopted the concept of 'localities' which is used in other parts of the world. A locality is defined as a "distinct population cluster inhabiting places and settlements in which the people live in neighbouring living quarters or compounds and which has a name, or a locally recognised status." The need to operationally distinguish, between "urban" and "rural", prompted the NPC, to categorise a locality inhabited by 20,000 individuals and above as urban. A related concept created and used by the NPC in the conduct of the national census is "Enumeration Areas (EAs)." These are geographic subunits of local government areas, and consist of between 50-70 housing units.

Sample and sampling

The sample size calculated for the study was 14,059. Due to the complex heterogeneity of the population, the sampling was multistage. In the first stage, the country was stratified along geopolitical zones. The most urban state, in each of the six geopolitical zones was purposively selected. In addition, the Federal Capital Territory (FCT) was separately selected since it stands in a class by itself. The states selected were Kano, from the North-West; Borno, from the North-East; Plateau, from the North-Central; Lagos, from the South-West; Enugu, from the South-East; and Rivers, from the South-South.

The second stage was at the level of localities in each state. Firstly, all the localities in each state (and the FCT) were stratified into urban and rural according to the 2006 census. The localities were of unequal sizes; therefore, in order to obtain the number of EA, proportionate to the sizes of the localities, the localities in each stratum were first listed in descending order of size. Subsequently, the EAs within each locality were listed. Finally, systematic random sampling was used to select the fifteen EAs from each stratum. These gave 210 EAs for the whole country, including the FCT. In Lagos State, ten additional EAs were selected in the course of data collection due to the very high rate of absence of selected respondents from their homes at the time of the survey visits.

The third stage was the selection of households at the level of EAs. This required, firstly, the process of listing each household. A team made of four enumerators, and a supervisor completed the listing of the households in each of the States. This was done, over a period of two weeks and produced the list of the buildings and the sampling frame for the households in each EA.

The final stage of sampling was at the level of the households, which were taken as clusters. All eligible persons (aged 15-64 years) in the selected households were selected for the study. Based on the 2003, Nigerian Demographic and Health Survey [11], it was projected that there would be 3 persons, aged 15-64 years per household.

Instrument

The interview schedule used consisted of 4 sections, namely the socio-demographic variables, the drug use variables, the Alcohol Use Disorder Identification Test and the General Health Questionnaire. However, only the findings from the first two sections are presented in this report. The drug use section was adapted from two standardized questionnaires: The Model Student Questionnaire [12] and the 1998 National Household Survey on Drug Abuse Questionnaire [13]. Only the results of the former are presented in this report. The drugs surveyed were Alcohol, Tranquilisers, Heroin, Other Opiates, Lysergic Acid Diethylamide (LSD), Other Hallucinogens, Cannabis, Cigarettes, Amphetamines, Methamphetamine, Ecstasy, Cocaine, crack and other drugs.

Translation and pilot testing of the instrument

The interview schedule was translated into the three main Nigerian languages (Hausa, Yoruba and Igbo) for use with respondents who did not speak the English language. The translation was done using iterative back-translation. The instrument and the translated versions were then pre-tested at the national coordinating centre and at each selected state (including FCT).

Training

The field workers working under close supervision received training on how to identify households and respondents, conduct interviews, and collate and transmit data to research team.

Ethical issues and approval

The study was approved by the National Health Research Ethics Committee. Informed consent was obtained from each responding adult, while the consent of a parent/guardian was obtained for minors, prior to the interview. Respondents had the option of giving either written (signature/ thumbprint) or oral consent, without which the interview was terminated. Assurances were given that the information given would be held in strict confidence.

Data collection, cleaning and analysis

The interview was conducted in each of the respondent's house. If any person selected for the interview was not at home at the first visit, the interviewer repeated the visit at least twice before counting the selected respondent as "not at home". The completed questionnaires were returned daily from the field, and were checked for completeness by the supervisors in the states. Improperly filled instruments were returned to the field for clarifications. Statistical Package for Social Sciences (SPSS), version 16, was used for the descriptive analysis.

Results

Response rate

The number of questionnaires returned from the field was 11,938. Two hundred and thirty three (1.9%) of the returned questionnaires were for people who either refused to participate or were not met at home after three visits. One thousand and ninety six (9.2%) of the records were excluded from analysis because of inconsistent or missing values that could not be resolved with the data cleaning algorithm. The records analysed were 10,609 (88.9%).

Socio-demographic characteristics

The distribution of the respondents by Geopolitical zone, gender and urban-rural locality, are as shown in Table 1. The South-West (Lagos State) had the highest proportion of respondents (17.7%), while the North-West (Kano State) had the least (11.3%). The majority of the respondents – 5,585 (53.0%) - were from the rural localities. There were 5519 (52%) males overall. The mean age of the respondents was 32.7 (sd = 12.4) years. Table 2 shows the distribution of the respondents by age, gender, geopolitical zones and locality. Most of the respondents were aged 25-34 years (29.6%). The least (7.3%) were in the age group 55-64 years. Table 3 shows the distribution of respondents by marital status, gender and geopolitical zones. Almost two-thirds of the respondents, 6922 (65.2%), were married. The educational status of the respondents,

by gender and locality, is as shown on Table 4. Generally, female respondents had a lower educational status than the male respondents. The proportion of male respondents without formal education was higher in rural than urban areas, in four geopolitical zones and the FCT: North-East (55% v. 25.7%), North-West (26.3% v 15.5%), North-Central (8.1% v. 3.4%), FCT (11.6% v. 5.7%) and South-East (7.3% v. 6%).

The employment status, of respondents is as presented on Table 5. On the whole, more than a third of the respondents were self-employed, irrespective of gender or locality. The proportion of respondents who reported being unemployed ranged from 4.3% of the females in the South-West rural areas to 21.1% of the females in North-West urban areas.

Geopolitical Zone	Urban			Rural			Total		
	Male (%)	Female (%)	Total (n)	Male (%)	Female (%)	Total (n)	Male (%)	Female (%)	Total (n)
North-East	53.3	46.7	563	49.3	50.7	752	51.0	49.0	1315
North-West	54.3	45.7	582	52.0	48.0	613	53.1	46.9	1195
North-Central	55.3	44.7	687	52.8	47.2	1028	53.8	46.2	1715
FCT	54.6	45.4	742	52.4	47.6	659	53.5	46.5	1401
South-East	50.4	49.6	832	49.9	50.1	848	50.1	49.9	1680
South-South	51.5	48.5	685	53.5`	46.5	737	52.5	47.5	1422
South-West	52.8	47.2	933	48.3	51.7	948	50.6	49.4	1881
Total	53.1	46.9	5024	51.1	48.9	5585	52.0	48.0	10609

Table 1: Distribution of respondents by geopolitical zones, gender, and urban-rural locality.

Age (Years)	Gender	Geopolitical Zone														
		North-East		North-West		North-Central		FCT		South-East		South-South		South-West		TOTAL
		Urban n=563 (%)	Rural n=752 (%)	Urban n=582 (%)	Rural n=613 (%)	Urban n=687 (%)	Rural n=1028 (%)	Urban n=742 (%)	Rural n=659 (%)	Urban n=832 (%)	Rural n=848 (%)	Urban n=685 (%)	Rural n=737 (%)	Urban n=933 (%)	Rural n=948 (%)	n = 10609 (%)
15-24	Male	14.6	9.7	16.3	14.7	15.9	19.5	16.2	17.0	16.3	16.0	13.6	15.3	9.0	9.2	14.4
	Female	15.1	18.0	17.2	17.6	15.9	14.4	16.3	17.3	18.0	15.9	13.4	14.8	10.6	11.1	15.2
25-34	Male	15.6	13.6	15.5	15.0	15.9	13.9	17.5	16.4	9.5	8.4	15.0	17.6	17.7	13.5	14.5
	Female	16.2	15.3	13.2	14.7	13.7	15.2	14.4	15.9	11.4	9.6	18.0	16.8	19.2	17.8	15.1
35-44	Male	11.5	13.3	12.5	12.9	12.8	10.5	13.3	14.3	7.8	5.9	12.0	10.3	14.6	12.2	11.6
	Female	9.8	8.1	8.9	8.2	8.4	9.8	9.4	10.9	8.4	9.8	10.9	7.6	8.7	11.8	9.4
45-54	Male	7.3	7.6	5.8	6.7	6.1	5.6	7.4	4.7	8.1	8.8	7.0	6.8	7.7	8.9	7.1
	Female	3.7	5.2	4.0	4.2	4.5	4.9	5.3	3.3	6.5	9.2	3.4	5.2	5.8	7.8	5.4
55-64	Male	4.3	5.2	4.1	2.8	4.7	3.3	0.1	0.0	8.6	10.7	3.9	3.4	3.9	4.5	4.4
	Female	2.0	4.1	2.4	3.3	2.2	2.9	0.0	0.2	5.3	5.7	2.8	2.2	2.9	3.2	2.9
Total		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 2: Distribution of respondents by age, gender, geopolitical zones and locality (%).

Geopolitical Zone	N	Marital Status								
		Single (Never Married)			Married			Others (Divorced, Separated and Widowed)		
		Male %	Female %	Total n	Male %	Female %	Total n	Male %	Female %	Total n
North-East	1315	66.5	33.5	269	47.2	52.8	1042	0	100	4
North-West	1195	62.8	37.2	331	49.6	50.4	860	0	100	4
North-Central	1715	66.7	33.3	682	45.6	54.4	1026	0	100	7
FCT	1401	61.1	38.9	597	47.9	52.1	803	0	100	1
South-East	1680	56.5	43.5	731	45.4	54.6	945	0	100	4
South-South	1422	57.5	42.5	551	49.4	50.6	870	0	100	1
South-West	1881	56.9	43.1	501	48.4	51.6	1376	0	100	4
Total	10609	60.7	39.3	3662	47.6	52.4	6922	0	100	25

Table 3: Distribution of respondents by geopolitical zones, marital status and gender.

Geopolitical Zone	Locality	Gender	n	Educational Status					
				Nil Formal (%)	Some Primary (%)	Completed Primary (%)	Some Secondary (%)	Completed Secondary (%)	Post-Secondary (%)
North-East (n = 1315)	Urban	Male	300	25.7	10.7	10.7	14	19.3	19.7
		Female	263	44.1	14.1	8.4	12.9	11	9.5
	Rural	Male	371	55	17.8	10.2	6.7	4.6	5.7
		Female	381	74.3	10.0	5.8	6.0	2.1	1.8
North-West (n = 1195)	Urban	Male	316	15.5	13.9	5.4	15.5	20.9	28.8
		Female	266	28.2	16.5	7.1	16.2	14.7	17.3
	Rural	Male	319	26.3	25.1	13.5	12.9	8.8	13.5
		Female	294	56.3	26.3	11.2	6.1	3.7	2.4
North-Central (n = 1715)	Urban	Male	380	3.4	10.0	15.3	19.5	20.3	31.6
		Female	307	10.1	8.8	17.9	19.9	15.0	28.3
	Rural	Male	543	8.1	12.0	16.4	27.1	20.3	16.2
		Female	485	22.5	19.4	15.5	22.1	13.4	7.2
FCT (n = 1401)	Urban	Male	405	5.7	7.4	8.6	13.1	22.0	43.2
		Female	337	11.3	5.0	8.9	16.0	21.4	37.4
	Rural	Male	345	11.6	9.0	14.2	27.8	18.3	19.1
		Female	314	23.6	18.5	18.8	16.9	12.4	9.9
South-East (n = 1680)	Urban	Male	419	6.0	10.7	18.6	22.7	18.9	23.2
		Female	413	10.7	13.1	14.8	25.2	18.2	18.2
	Rural	Male	423	7.3	13.9	19.6	25.1	17.7	16.3
		Female	425	18.1	17.2	15.3	19.5	14.6	15.3
South-South (n = 1422)	Urban	Male	353	1.4	5.1	9.6	18.4	27.8	37.7
		Female	332	2.4	4.8	13.0	24.7	32.2	22.9
	Rural	Male	394	1.3	3.8	9.9	25.1	28.2	31.7
		Female	343	9.0	9.3	14.9	25.9	25.7	15.2
South-West (n = 1881)	Urban	Male	493	2.2	2.2	12.0	17.8	33.3	32.5
		Female	440	5.9	4.8	13.2	17.3	34.1	24.8
	Rural	Male	458	2.2	3.7	16.4	20.1	29.7	27.9
		Female	490	10.6	7.1	18.8	17.8	28.0	17.8
Total (n=10609)	Urban	Male	2666	7.6	8.2	11.7	17.5	38.1	16.9
		Female	2358	14.3	9.2	12.2	19.3	34.1	10.9
	Rural	Male	2853	14.7	11.7	14.6	21.2	28.5	9.4
		Female	2732	28.3	14.9	14.5	16.8	21.2	4.2

Table 4: Educational status of respondents by gender and rural-urban locality.

Use of illicit drugs

Cannabis: Table 6 depicts that the national lifetime, 12-month and 30-day prevalence rates of cannabis use, were 6.6%, 2.6% and 1.8% respectively. They were higher in the urban locality and among the males. The Supplementary Table 1 shows the details by geopolitical zone, locality and gender. The lifetime, 12-month and 30-day prevalence rates were highest in the North-East, followed by the South-East. The overall lifetime, 12-month and 30-day prevalence rates of cannabis use for males were 9.8%, 4.3% and 2.9%, respectively, while the rates for females were 3.2%, 0.8% and 0.6%, respectively. The highest lifetime and 12-month rates for males were reported in South-East geopolitical zone (12.5% and 6.3%, respectively), while the highest 30-day rate (4.5%) was reported in North-East. The highest rates of cannabis use for the females were reported in the North-East: 8.2%, 3.0% and 2.6% for lifetime, 12-month and 30-day use, respectively.

Cocaine: The national lifetime, 12-month and 30-day prevalence rates of cocaine use were 3.3%, 1.6%, and 1.4%, respectively (See Table 6). The lifetime rate was marginally higher in the urban locality but the 12-month and 30-day rates were much higher in the rural locality. The three rates were higher among males, particularly in the South-West, where the male rates were more than double the female rates. Supplementary Table 2 shows that the lifetime prevalence rate was

highest in the North-Central (5.2%), followed by the South-East (5.1%). The 12-month and 30-day prevalence rates were highest in the North-Central, followed by the North-East.

Crack Cocaine: The national lifetime, 12-month and 30-day prevalence rates of crack cocaine use were 4.1%, 2.0% and 1.7%, respectively (Table 6). The distribution between urban and rural localities was similar to that of cocaine. The lifetime rate was highest in the North-Central (6.2%) and lowest in the FCT (1.9%) (See Supplementary Table 3). The 12-month prevalence rate was also highest in the North-Central (3.2%) and lowest in the FCT (0.5%). This pattern was the same for the 30-day rate. The life-time (4.8% v. 3.3%), the 12-month (2.4% v. 1.7%) and the 30-day (2.0% v. 1.4%) prevalence rates were higher among males nationally. There was a corresponding trend at the zones.

Heroin: The overall lifetime prevalence of heroin use was 4.6%, while, that of 12-month and 30-day use were 2.2% and 1.8%, respectively (Table 6). Supplementary Table 4 shows the details by zones, locality and gender. The South-East had the highest lifetime (7.0%) and 30-day (2.5%) prevalence rates while the North-Central had the highest 12-month prevalence (2.9%). The lowest rates were in the FCT (2.0%, 0.6% and 0.6% for lifetime, 12-month and 30-day use, respectively). Generally the males had higher rates. For lifetime use, the higher rate

Geopolitical Zone	Locality	Gender	N	Employment Status (%)				
				Unemployed	In Training	Self-employed	Employed by others	Housewife/ Retired
North-East	Urban	Male	300	10.7	19	49.3	20	1
		Female	263	17.5	10.6	24	10.6	37.3
	Rural	Male	371	11.1	11.6	65	8.9	3.5
		Female	381	17.8	7.1	22.6	3.7	48.8
North-West	Urban	Male	316	8.2	30.4	34.5	24.4	2.5
		Female	266	21.1	38.1	12.4	10.9	33.5
	Rural	Male	319	16	29.8	36.1	16.3	6.9
		Female	294	17.7	13.3	15.6	9.9	43.5
North-Central	Urban	Male	380	16.1	31.1	27.1	22.6	3.2
		Female	307	19.2	28	28	17.6	7.2
	Rural	Male	543	16.4	35.9	32.4	13.6	1.7
		Female	485	16.1	23.5	35.1	10.1	15.3
FCT	Urban	Male	405	6.2	27.2	34.8	30.1	1.7
		Female	337	7.4	32.6	26.4	20.8	12.8
	Rural	Male	345	10.4	29	44.1	15.1	1.4
		Female	314	9.9	20.4	43.9	8.9	16.9
South-East	Urban	Male	419	11	33.7	36.3	17.7	1.4
		Female	413	11.9	32.7	35.8	9.7	9.9
	Rural	Male	423	9.5	34.8	41.4	11.3	3.1
		Female	425	12.5	31.5	42.4	7.1	6.6
South-South	Urban	Male	353	17.6	17	39.9	22.7	2.8
		Female	332	14.8	16.3	49.7	10.2	9
	Rural	Male	394	12.4	26.9	30.2	29.2	1.3
		Female	343	13.4	24.2	37.6	14.6	10.2
South-West	Urban	Male	493	6.5	14.6	47.5	29	2.4
		Female	440	8	15.9	51.1	17.7	7.3
	Rural	Male	458	4.4	17.2	48	26.4	3.9
		Female	490	4.3	18.4	61.2	13.1	3.1
Total	Urban	Male	2666	10.7	24.5	38.6	24.1	2.2
		Female	2358	13.5	23.0	34.3	14.1	15.1
	Rural	Male	2853	11.4	26.8	42.0	17.4	2.4
		Female	2732	12.8	20.2	38.4	9.7	19.0

Table 5: Employment status of respondents by geopolitical zone, gender, and locality.

		By locality					By gender			
Drugs	Locality	n	Life time	12-month	30-day	Gender	n	Life time	12-month	30-day
Cannabis	Urban	5024	7.7	3.0	2.1	Male	5519	9.8	4.3	2.9
	Rural	5585	5.6	2.2	1.6	Female	5090	3.2	0.8	0.6
	Total	**10609**	**6.6**	**2.6**	**1.8**	**Total**	**10609**	**6.6**	**2.6**	**1.8**
Cocaine	Urban	5024	3.4	1.5	1.4	Male	5519	3.9	2.0	1.8
	Rural	5585	3.3	1.7	1.5	Female	5090	2.7	1.2	1.0
	Total	**10609**	**3.3**	**1.6**	**1.4**	**Total**	**10609**	**3.3**	**1.6**	**1.4**
Crack	Urban	5024	4.0	1.7	1.5	Male	5519	4.8	2.4	2.0
	Rural	5585	4.1	2.3	2.0	Female	5090	3.3	1.7	1.4
	Total	**10609**	**4.1**	**2.0**	**1.7**	**Total**	**10609**	**4.1**	**2.0**	**1.7**
Heroin	Urban	5024	4.6	2.0	1.8	Male	5519	5.4	2.7	2.2
	Rural	5585	4.6	2.4	1.9	Female	5090	3.8	1.7	1.5
	Grand Total	**10609**	**4.6**	**2.2**	**1.8**	**Total**	**10609**	**4.6**	**2.2**	**1.8**
Amphetamine	Urban	5024	3.0	1.0	0.9	Male	5519	3.0	1.3	1.1
	Rural	5585	2.2	0.9	0.8	Female	5090	2.1	0.7	0.6
	Total	**10609**	**2.6**	**1.0**	**0.9**	**Total**	**10609**	**2.6**	**1.0**	**0.9**
Methamphetamine	Urban	5024	4.4	1.9	1.6	Male	5519	4.4	1.8	1.5
	Rural	5585	3.8	1.4	1.3	Female	5090	3.7	1.5	1.4
	Total	**10609**	**4.1**	**1.6**	**1.5**	**Total**	**10609**	**4.1**	**1.6**	**1.5**
Ecstasy	Urban	5024	4.3	2.0	1.7	Male	5519	4.2	2.0	1.8
	Rural	5585	3.3	1.5	1.3	Female	5090	3.3	1.3	1.1
	Total	**10609**	**3.8**	**1.7**	**1.5**	**Total**	**10609**	**3.8**	**1.7**	**1.5**

Drug	Locality	n	Life time	12-month	30-day	Gender	n	Life time	12-month	30-day
LSD	Urban	5024	3.1	1.4	1.2	Male	5519	3.2	1.6	1.3
	Rural	5585	2.6	1.2	1.0	Female	5090	2.4	1.0	0.8
	Total	**10609**	**2.8**	**1.3**	**1.1**	**Total**	**10609**	**2.8**	**1.3**	**1.1**
Other hallucinogens	Urban	5024	3.5	1.5	1.2	Male	5519	3.9	2.1	1.7
	Rural	5585	3.1	1.6	1.4	Female	5090	2.7	1.0	0.8
	Total	**10609**	**3.3**	**1.6**	**1.3**	**Total**	**10609**	**3.3**	**1.6**	**1.3**

Table 6: Prevalence rate of illicit Drugs by locality and gender.

among the male respondents was statistically significant in the North West (p = 0.021), the North Central (p = 0.013) and the South West (p = 0.008), but not in the other geopolitical zones. The 12-month use had the higher significant male rate in the North-West. The 30-day use showed gender differences in all the zones and the FCT but these were not statistically significant.

Amphetamine: The national Lifetime use of amphetamines was 2.6% overall (Table 6). The Supplementary Table 5 shows that the prevalence rate was highest in the North-East (3.8%). The rates for the FCT and the South-South geopolitical zones were similar (1.5%). The 12-month rate was 1.0% nationally and was highest in the North-East (2.7%) and lowest in the FCT (0.4%). The 30-day prevalence rate was 0.9%, which had similar zonal pattern as the lifetime and 12-month rates, in relation to locality; Amphetamine use prevalence rate was significantly higher, in the urban areas of the North Central zone than the rural areas. In contrast, the rate was higher in the rural areas of the North-West than the urban areas.

Methamphetamine: Table 6 shows that the lifetime, 12-month and 30-day prevalence rates of methamphetamine use were 4.1%, 1.6%, 1.5% respectively. The lifetime prevalence rate was highest in the North-West (4.9%), followed by the North-Central (4.8%) and the South-East (4.5%) (Supplementary Table 6). The 12-month and 30-day rates were highest in the North-East. The rates were significantly higher in the urban areas of the North Central zone, whilst no significant differences were found in the other zones. The national life-time, 12-month, and 30-day, prevalence rates for methamphetamine use were higher among

the males than females (4.4% v 3.7%, 1.8% v 1.5% and 1.5% v 1.4%, respectively).

Ecstasy: Table 6 also shows the national prevalence rate for ecstasy, while the Supplementary Table 7 contains the details according to zones, localities and gender. Nationwide, ecstasy use, was more prevalent among males than females in relation to life-time, 12-month and current use (4.2% v 3.3%, 2.0% v 1.3% and 1.8% v 1.1%, respectively). However, this trend was reversed consistently across all the time periods in the South-West geopolitical zone. The lifetime rate was 3.8% nationally, highest in the South-East (4.7%) and lowest in the North-West (2.6%). The 12-month prevalence was 1.7% nationally. It was highest in the North-East (3.0%) and lowest in the FCT (0.9%). The 30-day rate was also highest in the North-East (2.7%) and lowest in the FCT (0.8%).

Lysergic Acid Diethylamide (LSD): Table 6 and the Supplementary Table 8 show the prevalence rates of LSD use. The overall rates for lifetime, 12-month and 30-day use were 2.8%, 1.3% and 1.1% respectively. The South-East geopolitical zone recorded the highest lifetime rate of 4.5% while the North-East recorded the highest 12-month and 30 day rates of 2.7% and 2.4%, respectively. The lifetime, 12-month and 30-day prevalence of LSD use by males was 3.2%, 1.6% and 1.3%, respectively, while that for females was 2.4%, 1.0% and 0.8%, respectively. Among the males, the highest lifetime, 12-month and 30-day rates, for LSD use were recorded in South-East (5.9%, 3.0% and 2.5%, respectively).

Other hallucinogens: Table 6 and the Supplementary Table 9 show the prevalence rates of use of other hallucinogens. The national rates

Drugs	Locality	n	Life time	12-month	30-day	Gender	n	Life time	12-month	30-day
			By locality					**By gender**		
Alcohol	Urban Total	5024	41.0	32.2	25.7	Male	5519	46.2	37.6	31.9
	Rural Total	5585	37.2	28.9	23.3	Female	5090	31.2	22.2	16.2
	National	**10609**	**39.0**	**30.3**	**24.5**	**Total**	**10609**	**39.0**	**30.2**	**24.4**
Tranquilizers	Urban Total	5024	13.1	6.1	3.2	Male	5519	11.9	5.9	3.2
	Rural Total	5585	9.8	4.9	2.7	Female	5090	10.7	5.0	2.6
	Grand Total	**10609**	**11.3**	**5.5**	**2.9**	**Total**	**10609**	**11.3**	**5.5**	**2.9**
Other opiates	Urban	5024	8.3	4.4	2.5	Male	5519	7.7	3.9	2.5
	Rural	5585	6.2	2.8	1.9	Female	5090	6.7	3.2	1.9
	Grand Total	**10609**	**7.2**	**3.6**	**2.2**	**Total**	**10609**	**7.2**	**3.6**	**2.2**
Cigarettes	Urban	5024	13.6	7.0	5.8	Male	5519	20.7	10.9	9.1
	Rural	5585	11.0	5.9	4.8	Female	5090	3.1	1.5	1.1
	Total	**10609**	**12.2**	**6.4**	**5.3**	**Total**	**10609**	**12.2**	**6.4**	**5.3**
Other forms of Tobacco	Urban	5024	8.0	4.9	3.7	Male	5519	12.1	7.9	6.3
	Rural	5585	8.4	5.1	4.4	Female	5090	4.0	2.3	1.7
	Total	**10609**	**8.2**	**5.2**	**4.1**	**Total**	**10609**	**8.2**	**5.2**	**4.1**
Solvent / inhalants	Urban	5024	6.3	3.5	2.7	Male	5519	7.7	4.6	3.8
	Rural	5585	7.2	4.3	3.7	Female	5090	5.8	3.2	2.6
	Total	**10609**	**6.8**	**3.9**	**3.2**	**Total**	**10609**	**6.8**	**3.9**	**3.2**
Other drugs	Urban	5024	17.5	12.4	8.4	Male	5519	18.8	13.4	9.3
	Rural	5585	12.2	8.4	5.6	Female	5090	10.2	6.9	4.4
	Total	**10609**	**14.7**	**10.3**	**6.9**	**Total**	**10609**	**14.7**	**10.3**	**6.9**

Table 7: Prevalence of other drugs.

for the lifetime, 12-month and 30-day use were 3.3%, 1.6% and 1.3%, respectively. The North-Central geopolitical zone reported the highest lifetime rate (5.2%) while the North-East geopolitical zone reported the highest 12-month and 30-day rates (2.7% and 2.4%), respectively. The lowest lifetime, 12-month and 30-day rates were recorded in the South-West (1.7%, 0.5% and 0.4%) respectively. The national lifetime, 12-month and 30-day rates for males were 3.9%, 2.1% and 1.7%, respectively, while those for the females were 2.7%, 1.0% and 0.8%, respectively. The North-Central, recorded the highest lifetime and 12-month use for males (6.5% and 3.3%, respectively), while the highest 30-day rate was recorded in the North-East zone (2.5%).

Alcohol and Licit drugs: *Alcohol:* The prevalence of lifetime, 12-month and 30-day use of alcohol is presented in Table 7 and the Supplementary Table 10. The overall national lifetime prevalence rate was 39%. It was higher in urban areas than in the rural (41% v. 37.2%). A similar pattern was observed with respect to 12-month and 30-day use. The South-East had the highest lifetime prevalence (61.5%), while the North-East (6.2%) had the lowest. The national 12-month prevalence was 30.3%, highest in the South-East (51.7%) and lowest in the North-East (3.9%). The 30-day prevalence rate was 24.5% nationally. It ranged between 3.1% in the North-East and 42.6% in the South-East. The lifetime, 12-month and 30-day prevalence rates of alcohol use for males were 46.2%, 37.6% and 31.9%, respectively, which were higher than those for females (31.2%, 22.2% and 16.2%, respectively). The highest lifetime prevalence of alcohol use among males was recorded in the South-East (71.3%) and the least in the North-West (9.4%).

Tranquillisers: Table 7 and the Supplementary Table 11 show that the lifetime use of tranquillisers was 11.3% nationally. The prevalence rate was highest in the South-West (20.9%) and lowest in the North-West (5.1%). The 12-month prevalence of tranquilliser use was 5.5% nationally. The rate was highest in the South-West (10.3%) and least in the South-South (2.6%). The 30-day prevalence rate was highest in North-East (5.4%) and least in the FCT (1.1%). The lifetime and 12-month prevalence rate of use in males were highest in the South-West (21.1% and 10.3%, respectively); while 30-day prevalence rate among males was highest in the North-East (5.7%).

Opiates (other than Heroin): Table 7 and the Supplementary Table 12 show that the national prevalence rates of lifetime, 12-month and 30-day use of other opiates were 7.2%, 3.6% and 2.2%, respectively. The South-West had the highest lifetime and 12-month rates of 10.7% and 4.6%, respectively and had almost equal rates of use by male and female respondents. The North-East had the highest 30-day use (3.5%). The lifetime, 12-month and 30-day use for males was 7.7%, 3.9% and 2.5%, respectively; while those for females were lower at 6.7%, 3.2% and 1.9%, respectively. Males generally reported higher rates than females, except in the South-South geopolitical zone. The highest lifetime prevalence rates among both males and females were recorded in the South-West (10.9% and 10.5%, respectively). The lowest 12-month and 30-day rates among males were observed in the FCT (2.8% and 0.7%, respectively). Among the females, the highest 12-month rate was in the South-West (4.7%), whilst the highest 30-day use was in North-East (3.4%).

Cigarettes: Table 7 and the Supplementary Table 13 show the prevalence rates of cigarette use – lifetime, 12.2%; 12-month, 6.4% and 30-day, 5.3%. The South-East reported the highest lifetime prevalence (15.7%); while the North-Central, reported the highest 12-month (8.6%) rate. The least 12-month prevalence rates were recorded in the South-West (4.1%) and the North-West (4.1%). The 30-day rate was 5.3% nationally. The highest, was reported in the North-Central (7.4%) and the least in the North-West (3%). A higher lifetime national prevalence

of cigarette use was found in the urban areas, when compared with rural areas (13.6% v 11.0%, respectively). The urban-rural rate difference was highest in the North-Central (15.7% v. 11.5%). With respect to gender differences the rates among males were generally higher than those for females.

Other forms of tobacco: As shown in Table 7 and Supplementary Table 14, 15, lifetime use of non-cigarette tobacco was 8.2% nationally. The South-East had the highest prevalence (18.5%) and the South-West the lowest (4.3%). The 12-month prevalence was 5.2% nationally, the highest being in South-East (12.1%). The 30-day prevalence was 4.1%. A higher national lifetime prevalence rate was found in rural (8.4%) compared with urban (8.0%) areas. A similar pattern was observed with 12-month and 30-day prevalence rates. The overall rates for the use of other forms of tobacco in males were 12.1% lifetime, 7.9% 12-month and 6.3% 30-day. The rates for females were lower.

Solvents and inhalants: Table 7 and the Supplementary Table 16 show the prevalence rates of use of inhalants by zone, urban-rural locality, and gender. The overall rates were 6.8% lifetime, 3.9% 12-month and 3.2% 30-day. The South-East had the highest rates. The rate was higher among males than females: life-time (7.7% V. 5.8%), 12-month (4.6% V. 3.2%) and 30-day (3.8% V. 2.6%).

Injecting drug use (IDU): Table 8 shows the prevalence of injecting drug use by geopolitical zone and locality. The overall national lifetime prevalence was 4.0%. The North-Central geopolitical zone had the highest lifetime (5.7%), 12-month (2.7%) and 30-day (2.3%) prevalence rates. The urban prevalence rates were compared with the rural. In all, higher proportions of males compared with females, reported injecting drugs in their life-time (4.7% vs. 3.1%), last 12 months (2.5% vs. 1.4%) and last 30 days (2.0% vs. 1.2%).

Discussion

General

This cross-sectional survey of alcohol and drug use in all the geopolitical zones of Nigeria represents the most comprehensive survey of psychoactive drug use in Nigeria in recent times. It had a large sample size and covered most of the psychoactive drugs available in the country. The study further evaluated most of the variables of drug use, including the various periods of drug use. The complex methodology took into consideration the complexities of the Nigerian population, as the study employed official demographic variables to demarcate the various geographical locations involved in the study. This, invariably, enabled the sampled population to be a valid representation of the whole country.

The most commonly used drugs across the different time periods studied (lifetime, 12-month and 30-day) were mainly 'licit' drugs. The use of these drugs may be related to their easy availability, low cost, and the feeling that one is not using anything illegal. The most commonly used 'illicit' drug was cannabis, which has continued to feature in Nigeria and some other countries as the most commonly used illicit drug [14].

Generally, the emergent pattern in this survey is that some geopolitical zones were more prone to drug use. This was particularly so for the North-East, South-East and the North-Central. The reasons for this are rather unclear. The South-West and the North-West zones recorded the least use of drugs. The explanation for this is rather unclear, also, although the South-West has had relative social stability.

As reported in previous studies, gender may significantly influence

Geopolitical zone	By locality					By gender				
	Locality	N	Life time	12-month	30-day	Gender	n	Life time	12-month	30-day
North-East	Urban	563	3.6	2.1	1.4	Male	671	4.3	2.8	2.2
	Rural	752	4.1	2.5	2.3	Female	644	3.4	1.9	1.6
	Total	**1315**	**3.9**	**2.4**	**1.9**	**Total**	**1315**	**3.9**	**2.4**	**1.9**
North-West	Urban	582	3.8	2.1	2.1	Male	635	5.2	3.5	3.1
	Rural	613	4.7	2.4	2.0	Female	560	3.2	0.9	0.7
	Total	**1195**	**4.3**	**2.3**	**2.0**	**Total**	**1195**	**4.3**	**2.3**	**2.0**
North-Central	Urban	687	7.3	3.2	2.6	Male	923	6.3	2.7	2.3
	Rural	1028	4.7	2.3	2.0	Female	792	5.1	2.7	2.3
	Total	**1715**	**5.7**	**2.7**	**2.3**	**Total**	**1715**	**5.7**	**2.7**	**2.3**
FCT	Urban	742	2.2	0.8	0.5	Male	750	2.9	1.2	0.9
	Rural	659	2.4	1.1	0.9	Female	651	1.5	0.6	0.5
	Total	**1401**	**2.3**	**0.9**	**0.7**	**Total**	**1401**	**2.3**	**0.9**	**0.7**
South-East	Urban	832	4.3	1.9	1.7	Male	842	6.1	3.3	2.4
	Rural	848	5.7	2.9	2.1	Female	838	3.9	1.6	1.4
	Total	**1680**	**5.0**	**2.4**	**1.9**	**Total**	**1680**	**5.0**	**2.4**	**1.9**
South-South	Urban	685	3.2	1.3	1.0	Male	747	5.0	2.3	1.6
	Rural	737	5.0	2.0	1.4	Female	675	3.3	1.0	0.7
	Total	**1422**	**4.1**	**1.7**	**1.2**	**Total**	**1422**	**4.1**	**1.7**	**1.2**
South-West	Urban	933	2.5	1.0	0.9	Male	951	3.4	1.7	1.6
	Rural	948	2.5	1.6	1.6	Female	930	1.6	0.9	0.9
	Total	**1881**	**2.5**	**1.3**	**1.2**	**Total**	**1881**	**2.5**	**1.3**	**1.2**
National Prevalence	Urban	5024	3.8	1.7	1.4	Male	5519	4.7	2.5	2.0
	Rural	5585	4.2	2.1	1.8	Female	5090	3.1	1.4	1.2
	Total	**10609**	**4.0**	**1.9**	**1.6**	**Total**	**10609**	**4.0**	**1.9**	**1.6**

Table 8: Prevalence of injecting drug use by geopolitical zones, locality and gender.

the pattern of drug use. There were gender differences in the distribution of use of some psychoactive drugs, their use being mostly among males. The urban-rural differences in the use of psychoactive drugs, with higher rates in the urban areas for some drugs, suggest that urbanity may positively influence the use of drugs. This was so in this study with regards to the use of alcohol, tranquilisers, heroin, other opiates and cannabis

Cannabis

The 7% lifetime rate of cannabis use was lower than the 10.8% reported for Nigeria in 1989 [8], the 42% reported in the US and New Zealand [15], and the 24% reported in the United Kingdom (16). It is, however, higher than the 0.4% reported in the 2002-2003 survey in Nigeria [9]. There appears to have been a remarkable rise in lifetime prevalence of cannabis use from the 2.4% reported in the 1980s [7], to the rate obtained in this study. The reason for this is not immediately clear but may be related to the general trend globally. While legal restrictions against cannabis have not been formally relaxed in Nigeria, it appears that enforcement against its use is generally more lenient. Despite being the two most metropolitan states in the country, the prevalence rates of use of cannabis in Lagos (South-West zone) and Kano (North-West zone) were consistently below the national average. The higher rate of cannabis use among urban respondents, in all the geopolitical zones, is in keeping with the 1999 UNDCP survey [8]. The different rates between rural and urban areas probably point to the issue of drug availability.

Cocaine

Cocaine had been used by 3.3% of the respondents in their life time. This rate is quite close to what obtained in a previous study in Nigeria, which reported a range of 1.9% - 4.0% [8]. It was higher than

the 0.14% reported earlier in Nigeria [9] and the figures (0.0% – 1.5%) reported in a multinational study for countries in Asia, Africa, Europe and the Middle East. It is however lower than the figures (4.0% – 16.2%) reported for the countries in Oceania and Americas [15].

Heroin

The use of heroin and other opiates was more common in urban parts of Northern Nigeria than its rural areas. However, in the South, higher prevalence rates of use of heroin and other opiates were found, in the rural regions compared to the urban localities.

Alcohol

This study revealed a wide variation in alcohol use across the geopolitical zones in Nigeria. Consistently, lower rates of drinking were reported in the North than the South. This difference may be driven by the religious beliefs of the mostly northern Muslims against the use of alcohol. Overall, alcohol use rates across the three time periods of interest were significantly higher in the urban areas than the rural settings. Similar preponderance of alcohol use in urban areas among students had earlier been reported in a state in the North Central [17] but no such urban-rural difference was observed among students in a South West state [18].

Tobacco

The lifetime prevalence of cigarette use (12.2%) found in this study is lower than the 17.9% and 16.8% reported for tobacco use in previous studies in Nigeria [9,19]. While this may suggest a downward trend in cigarette use, it should be noted that unlike previous studies, this survey provides prevalence rate of a specific form of tobacco preparation, cigarettes, as distinct from all forms of Tobacco. The prevalence rate of smoked tobacco in form of cigarette was higher than smokeless

tobacco in this study. Previous studies in Nigeria have also reported lower prevalence rates for smokeless tobacco [19]. The lower prevalence rate of cigarettes in the North compared to the South in this study may be connected to the Islamic injunction against drug use in the north, especially the use of alcohol and tobacco, particularly visually perceivable smoked tobacco. The rates of use of other forms of tobacco, however, had mixed patterns between the north and south. In general, the common use of smoked tobacco (cigarettes) in the urban areas, as against the use of smokeless tobacco like 'snuff' in the rural areas, may be related to the higher cost of cigarettes and the ready availability and lower cost of smokeless tobacco in the rural areas.

Tranquillisers

The Lifetime prevalence of tranquilliser use in this study (11.3%) was similar to what was reported (10.8%) in a previous study [8]. Slightly higher figures have been reported in student surveys within the country, [18,20] as well as in a fairly recent community survey [9]. The prevalence rates obtained indicated that it was a problem mainly in the South-West and North-East geopolitical zones and mainly in the urban areas.

Solvents / inhalants

Close to 7%, of the respondents, had used solvents and inhalants in their life time and the current use, stood at about (3%). These drugs, though legal and easily available, are quite dangerous and may be associated with fatal outcomes. The use of solvents and inhalants had higher prevalence rates in the urban regions of all the geopolitical zones except the North-West and South-East.

Recommendations

This study highlights the high burden of drug use in Nigeria irrespective of the North/South divide. There is therefore an urgent need for intervention measures to stem the tide. The need to devote more resources, financial and otherwise, is imperative. Drug education and its continuity to the teeming populations of its youths must be prioritized. The need to not only expand, equip, and upgrade the facilities providing treatment for persons with drug use disorders is not in doubt. This is an indirect primary prevention, as a treated drug using individual will not lure others into using drugs. In furtherance of this, there is a need to develop manpower by way of capacity building. Current data in the country suggests inadequate manpower [21] which emphasises the need for the Nigerian Government to show commitment to this service gap. It is furthermore important to empower the National Drug Law Enforcement Agency (NDLEA), the regulating body in charge of drug control, in order for it to be able to carry out its statutory functions of combating the distribution of drugs and the enforcement of the drug laws in the country. Its demand and supply reduction strategies, which are a smaller part of its mandate, must be better articulated and funded to ensure the achievement of its set targets in this regard. The drug-related problems, such as the worrisome trend of injecting drug use (IDU) need to be confronted in a multi-faceted way that will include drug education, public health awareness, and possibly legislation. Restrictions of over the counter drugs that may lead to abuse, such as injectable opioids should be put in place by legislation and appropriate sanction given. These sanctions should be meted out to defaulting pharmacies and the so called 'Patent Drug Stores' in the country. Individuals who are apprehended for possession or use of illicit drugs should be assessed, not only by the law enforcement agencies, but also by the drug abuse treatment specialists, who can advise on the drug using individuals, as distinct from the cultivators and couriers. This will go a long way in order not to criminalize the drug users and

abusers. Those with drug use problems should for sent for treatment interventions.

Competing Interests

The author(s) declare that they have no competing interests.

Authors' Contributions

TAA conceived the study. All the authors made substantial contributions to design, acquisition and interpretation of data. TAA, OM, AOA, POO, AO, EBS, LE, AAA, TAF were involved in drafting the manuscript. All authors revised it critically for important intellectual content, gave final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. Asuni T (1978) The Drug Abuse Scene In Nigeria, In: Petersen R C (Ed.) The International Challenge Of Drug Abuse, Pp. 15-25 Maryland, National Institute On Drug Abuse.

2. Lambo TA (1965) Medical And Social Problems Of Drug Addiction In West Africa. (With Special Emphasis On Psychiatric Aspects). The West African Medical Journal 14: 236.

3. Asuni T (1964) Socio-Psychiatric Problems Of Cannabis In Nigeria. Bull Narc 16: 17-28.

4. Boroffka A (1966) Mental Illness And Indian Hemp In Lagos. East Afr Med J 43: 377-384.

5. Oviasu VO (1976) The Abuse Of Cannabis In Nigeria. Nigerian Medical Journal 6: 359-366.

6. Odejide A, Sanda A (1976) Observations Of Drug Abuse In Western Nigeria. African Journal Of Psychiatry 2: 303-309.

7. Ebie J, Tongue E (1988) Report Of A Research Project On Substance Abuse In Some Urban And Rural Areas Of Nigeria. Lausanne, Switzerland, International Council On Alcoholism And Addictions.

8. UNDCP (1999) Report Of The Rapid Situation Assessment Of Drug Abuse In Nigeria. Nigeria.

9. Gureje O, Degenhardt L, Olley B, Uwakwe R, Udofia O, et al. (2007) A Descriptive Epidemiology Of Substance Use and Substance Use Disorders In Nigeria During The Early 21st Century. Drug Alcohol Depend 91: 1-9.

10. UN (2013) World Population Prospects The 2012 Revision: Key Findings And Advance Tables. New York, Department Of Economic And Social Affairs, Population Division, United Nations.

11. National Population Commission (Nigeria) (2004) Nigeria Demographic And Health Survey 2003. Calverton, Maryland. National Population Commission (Nigeria) And ORC Macro.

12. JOHNSTON LD (2003) Questionnaire Development, In: Hibell B (Ed.) GAP Toolkit Module 3: Conducting School Surveys On Drug Abuse. New York, United Nations Office On Drugs And Crime.

13. SAMHSA (2000) National Household Survey On Drug Abuse: Main Findings 1998. Rockville, MD, Department Of Health And Human Services, Substance Abuse And Mental Health Services Adminstration.

14. UNODC (2010) World Drug Report 2010 United Nations Publication, Sales No. E.10.XI.13. New York, United Nations Office On Drugs And Crime.

15. Degenhardt L, Chiu WT, Sampson N, Kessler RC, Anthony JC, et al. (2008) Toward A Global View Of Alcohol, Tobacco, Cannabis, And Cocaine Use: Findings From The WHO World Mental Health Surveys. Plos Medicine 5: E141.

16. Coulthard M, Farrell M, Singleton N, Meltzer H (2002) Tobacco, Alcohol And Drug Use And Mental Health. London, Social Survey Division Of The Office For National Statistics.

17. Abiodun OA, Adelekan ML, Ogunremi OO, Oni GA, Obayan AO (1994) Psychosocial Correlates Of Alcohol, Tobacco And Cannabis Use Amongst Secondary School Students In Ilorin, Nigeria, West. Afr J Med 13: 213-7.

18. 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: 299-305.

19. Obot IS (1990) The Use Of Tobacco Products Among Nigerian Adults: A General Population Survey. Drug Alcohol Depend 26: 203-208.

20. Adelekan ML, Abiodun OA, Obayan AO, Oni G, Ogunremi OO (1992) Prevalence And Pattern Of Substance Use Among Undergraduates In A Nigerian University. Drug Alcohol Depend 29: 255-261.

21. Peter O Onifade, Edward B Somoye, Olorunfemi O Ogunwobi, Adegboyega Ogunwale, Akinwande O Akinhanmi et al. (2011) A Descriptive Survey Of Types, Spread And Characteristics Of Substance Abuse Treatment Centers In Nigeria. Subst Abuse Treat Prev Policy 6: 25.