



ORIGINAL ARTICLE

Assessment of Psychoactive Substance Use and the Level of Risk among Patients attending Three Primary Care Clinics in Benin-City, Edo State

Fela-Thomas AL¹, Akanni OO¹, Olotu OS¹, Ehimiobai M²

¹Federal Neuropsychiatric Hospital, Benin-City, Edo State, Nigeria.

²Department of Mental Health, University of Benin Teaching Hospital, Benin-City, Edo State, Nigeria.

Keywords

Psychoactive substances;
Prescription medications;
Prevalence;
Risk; Primary care; Benin-City.

ABSTRACT

Background: Psychoactive substance use and misuse of prescription medication is prevalent among the general population. We aimed to ascertain the prevalence of psychoactive substance use (asides alcohol), misuse of prescription medications and level of risk of patients visiting three primary care clinics in Benin-City, Edo State.

Methods: In this cross-sectional study, 649 participants were recruited from three health facilities using systematic random sampling technique. The World Health Organization's Alcohol, Smoking and Substance Involvement Screening Test (WHO ASSIST) was administered to participants. Bivariate analysis was used to determine association between socio-demographic variables and psychoactive substance use. P-value < 0.05 was employed as level of statistical significance.

Results: Opioid pain medication was the most commonly ever used substance by participants with a lifetime prevalence of 55.6% (n=361) and a prevalence for current use of 40.2% (n=261). Males compared to females were more likely to be daily or weekly users of tobacco (p<0.001) and marijuana in the last three months (p=0.003). The widowed compared to the married or singles were more likely to indulge in daily or weekly use of sedatives (p=0.02) and opioid pain medication (p=0.001) in the past three months. One hundred and ninety-six (30.2%) of the participants demonstrated moderate risk while 4 (0.6%) demonstrated high risk to opioid pain medication use. Being male was significantly associated with the risk of adverse effects of tobacco (p=<0.001), marijuana (p=0.002) and stimulant use (p=0.002).

Conclusion: Routine screening for psychoactive substance use and misuse of prescription medication is recommended in primary care facilities.

Correspondence to:

Dr. Ayodele L. Fela-Thomas
Federal Neuropsychiatric Hospital,
P.M.B.1108, Benin-City,
Edo State, Nigeria.
E-mail: ayoth2001f@yahoo.com
Telephone: +2348051629414

INTRODUCTION

Psychoactive substance use is not a new phenomenon and it is of major public health concern globally.^{1, 2} Its negative consequences impact on individuals, their

families and the society at large.³ According to the United Nations Office on Drug Crime, about a quarter of a billion (250 million) of the population had used illicit drugs in 2015. Cannabis was reported as the most

commonly used illicit substance with a past year prevalence of about 183 million people.⁴ In a national survey conducted in 2015 among non-institutionalized civilians in the United States (US), it was reported that 11.5 million people had a history of opioid misuse while 1.9 million reported an opioid prescription use disorder.⁵ In a descriptive national survey of substance use conducted in 2009 among 10,609 participants aged 15-64 years in the six geopolitical zones of Nigeria, the authors reported that cannabis was the most commonly used illicit drug with a lifetime use of 6.6%, 12-month use of 2.6% and 30-day use of 1.8%.⁶

Substance misuse is the use of a substance for a purpose not consistent with legal or medical guidelines while hazardous use refers to a pattern of substance use that increases the risk of harmful consequences for the user, that is, patterns of use that are of public health significance in the absence of any current disorder in the individual.⁷ Harmful use is defined as a pattern of psychoactive substance use that is causing damage to health; which may either be physical or mental.⁸ Dependence syndrome is a cluster of physiological, behavioural, and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviours that once had greater value.⁷ "Problematic use" is a term applied to those in whom substance use has caused substance-related disorder or disability; including those who abuse and those who are dependent on the substance.⁹

The World Drug Report of 2017 stated that about 0.6% of the global adult population were involved in problematic use of psychoactive substances, thus suffering from psychoactive substance use disorders.⁴ Psychoactive substance use disorder is a major contributor to the global burden of diseases.¹⁰ For instance, a 2017 report attributed 17 million disability adjusted life years (DALYs) to drug use disorders⁴ while a risk assessment study conducted in Canada using exposure data and risk relations from large studies and meta analyses reported that cannabis use was associated with 287 deaths and 66346 DALYs.¹¹

Substance use and substance use disorders predispose the users to a wide variety of health and social problems, consequently affecting the society at large.^{12,13} For example, injection drug use is associated with a risk of contracting HIV and Hepatitis C due to sharing of needles and other injecting instruments among users.⁴ Methamphetamine abuse is associated with cardiac problems, depression and dental problems.¹⁴ Non-medical use of cannabis is associated with impaired respiratory function, increased risk for accidents and mental disorders like anxiety, panic symptoms including frank psychosis.¹⁵ The use of these substances is also associated with deviant and criminal behaviours.¹⁶ Psychoactive substance use (PSU) is also associated with poor health outcomes in many medical conditions, its co-occurrence with these conditions usually complicating their management.¹⁷⁻¹⁹

A number of studies on psychoactive substance use have been carried out in primary care facilities, however, most of these studies focused on either alcohol or licit substance use such as prescription medications²⁰⁻²² with very few focusing on other psychoactive substances and their level of risk to use of these substances. Considering that the primary care centres are usually patients' first contact to medical care and they present in such centres with other medical problems which may be related to substance use,²³⁻²⁵ such centres thus provide an effective avenue for the assessment and provision of appropriate interventions for psychoactive substance use before it becomes an established disorder.^{26, 27} Moreover, identification of those with non-problematic substance use disorder and implementing appropriate intervention towards this group will have positive impact on the society, considering the economic, psychological and social consequences of an established substance use disorder on the affected individual and the society.

This study aimed to assess the prevalence of psychoactive substance use (other than alcohol), and misuse of prescription medications, their pattern of use and the level of risk associated with the use of these substances among attendees of three primary care clinics in Benin City, Nigeria. Furthermore, the socio-demographic correlates of pattern of use and level of risk to these substances were also assessed.

METHODOLOGY

This is a cross-sectional study on the prevalence of psychoactive substance use and misuse of prescription medication, the pattern of use and level of risk to these substances among people attending three primary care clinics in Benin City, Nigeria. Data for the study was collected from August 2016 to January 2017. This study was conducted at three health facilities providing primary care services in Benin-City. These were: the General Practice Clinic of the University of Benin Teaching Hospital (UBTH [GPCU]), the Medical Clinic of the Federal Neuropsychiatric Hospital (FNPH [MCF]), and the General Out-Patient Department of the General Hospital, Benin City (GH[GOPDG]).

UBTH is a tertiary centre which receives referrals from other neighbouring health facilities. The GPC unit delivers primary care services to staff members and students of the university, including the community around the university environment. It has a daily turnout of about 220 patients and no referrals are required before patients are attended to. FNPH is a 230-bed facility which provides in-patient and out-patient care, as well as emergency services to mentally ill persons primarily across the South-South region (a geographical catchment area of six states) of Nigeria. The MC provides primary care services to medically-ill persons from the surrounding communities. An average of 10-15 patients are seen in a day. The GH is a secondary health care facility which provides both in-

patient and out-patient services but the GOPD section which provides primary health care services was used for this study. The facility has an average patient load of 320-350 per day and 220-230 new cases per clinic day.

The study population comprised all attendees of the hospitals aged between 14 years and 59 years, whose condition was not too severe to impair their ability to respond to questions. Data for those aged 60 years and above have been discussed in another paper. (In press). Patients aged between 14-59 years were recruited for this study. Ideally, participants should be aged 18 years and above (due to issue of consent) but on account of the high prevalence of psychoactive substance use in teenagers, we included this age group in the study. Those with severe physical or mental illness and those who did not understand English Language nor Pidgin English were excluded from the study. Also excluded were those who did not consent to participate in the study.

The following formula was used to calculate the minimum sample size for the study. $n = z^2pq / d^2$ ²⁸; where z is the normal standard deviate 1.96 at 95% confidence interval and p is the prevalence of psychoactive substance use of 33.7% as reported by Igwe.²⁹ Thus, the minimum sample size was 345.

Systematic random sampling technique was employed at each centre to select participants. The sampling interval for the

various clinics differed as the patient load in each centre was unequal. Thus, we calculated the sampling interval based on the average amount of patients seen at the different clinics. In cases where the n^{th} patient was not eligible, the next patient was recruited for the study. The first participant was however selected through a simple random method from the first n^{th} patients registered for the day.

Ethical approval was obtained from the Research and Ethical Committee of the Federal Neuropsychiatric Hospital, Benin City and the Ethics and Research Committee University of Benin Teaching Hospital, Benin City. Permission was sought from the Director of Hospital Services before patients were recruited from the State General Hospital. Informed consent (both verbal and written) was obtained from participants before being recruited. Informed consent to participate was obtained from parents or guardian of those younger than 18 years while assent of these under-aged were sought. Confidentiality was maintained by obtaining data anonymously using serial numbers instead of names, these were kept in a safe place where it was inaccessible to those not involved in the study. Participants were informed of their right to withdraw from the study at any point and that this would not interfere adversely with their treatment. All participants were given appropriate intervention during the interview.

A clinician-designed structured questionnaire to assess the socio-

demographics of participants was used for the study. The variables included age, sex, marital status, level of education, occupational status, religion and previous treatment for substance use. Misuse of prescription medication was determined as medications taken for reasons other than prescription, or taking them more frequently or at higher doses than prescribed.³⁰

The Alcohol, Smoking, Substance Involvement Screening Test (ASSIST) ³⁰

This is an eight-item interviewer-administered questionnaire that screens for all levels of problems or risky substance use. It screens for the following substances; tobacco products, alcohol, cannabis, cocaine, amphetamine type stimulants, sedative and sleeping pills, hallucinogen, inhalants, opioids and 'other drugs'. It obtains information about lifetime use (lifetime prevalence) of substances and use of substance with associated problems in the last three months (current prevalence). A risk score was provided for each substance and scores were grouped into low, moderate or high risk. For each substance (asides alcohol), a score of 0-3 denotes low risk, 4-26 moderate risk, 27+ high risk. Moderate risk depicts harmful or hazardous use while high risk depicts a high risk for dependence. The risk scores determine the level of intervention (treatment as usual [drug education] for those with low or no risk, brief intervention for those with moderate risk or referral to a specialist centre for those with high risk). This instrument has undergone testing in three phases to ensure feasibility, validity

and reliability.^{31, 32} It has been validated and used extensively in Nigeria including in primary care centres.^{20, 31, 33, 34}

A pilot study was conducted prior to the main study to determine feasibility of the study, easiness of questionnaire administration and administration time of research instruments. The pilot study showed that the questionnaire was easy to administer and acceptable to over 95% of the participants. An average administration time of about 10 minutes was observed for each interview. The participants involved in the pilot study were excluded from the main study. Interviews were conducted by two research assistants trained extensively on the administration of the ASSIST by (A.F.T). Inter-rater reliability was good with a value of 0.7 for Cohen's kappa.

Eligible participants were selected using the systematic random sampling technique at the general outpatient hall, while awaiting their turn to see the doctor. They were then taken to a private room within the outpatient clinic for questionnaire administration. All participants were given the appropriate treatment after discussing their scores with them at point of data collection. The attending physician was also informed of those who needed referral for more intensive treatment as recommended by the algorithm in the WHO ASSIST questionnaire.

Analysis was done using the Statistical Package for Social Sciences (SPSS) version 20.0 Descriptive statistics (mean, standard

deviation) was carried out. The ASSIST score was used (according to the manual) to categorize the level of risk into low, moderate or high risk. Some variables were grouped together or categorised to improve statistical power. All categorized data were analysed using chi square test of association. Fisher's exact test/ Bonferroni correction was implemented where appropriate. P-value < 0.05 was employed as level of statistical significance.

RESULTS

A total of 649 participants were recruited from the three primary care clinics. Females comprised majority of the participants 371 (57.2%). The mean age of participants was 37.5 years (± 11.55). Those aged 31-40 years comprised the predominant age group 188 (29%). Majority of the participants possessed secondary level of education 263 (40.5%). The socio-demographic variables of participants are outlined in Table 1.

Lifetime prevalence of psychoactive substance use

Table 2 shows the prevalence of lifetime use and current use of psychoactive substances by participants. Opioid pain medication was the most common ever used psychoactive substance at the three primary care clinics with a lifetime prevalence of 55.6% (n=361). This was closely followed by stimulant use with a lifetime prevalence of 34.1 % (n=221).

Table 1: Sociodemographic Characteristics of Participants

Variable	Frequency (n=649)	Percent
Sex		
Female	371	57.2
Male	277	42.7
Age group (years)		
14-20	32	4.9
21-30	180	27.7
31-40	188	29.0
41-50	136	21.0
51-59	112	17.3
Marital Status		
Single	200	30.8
Married	431	66.4
Widow	10	1.5
Occupation		
Managerial/Technical	8	1.2
Professional	33	5.1
Skilled	99	15.3
Semi-skilled	82	12.6
Unskilled	305	47.0
NOC	116	17.9
Education		
Primary	119	18.3
Secondary	263	40.5
Tertiary	249	38.4
Religion		
Christian	617	95.1
Islam	13	2.0

*n≠649 for some variables due to missing values.
 NOC: not otherwise classified (unemployed, housewife, students)

The least used substance was hallucinogen with a lifetime prevalence of 0.2% (n=1).

Current use psychoactive substances

In all three centres, the common psychoactive substances used by the participants in the past three months. Opioid pain medication was the most used substance currently in all three centres with a current prevalence of 40.2% (n=261). This was closely followed by mild stimulant use with a current prevalence of 10.5% (n= 68).

Table 2: Lifetime and Current Prevalence of Psychoactive Substance Use

Variables	Lifetime Use		Current Use	
	Yes		Yes	
	n	%	n	%
Heroin	361	55.6	261	40.2
Amphetamine	221	34.1	68	10.5
Tobacco	126	19.4	28	4.3
Sedative	110	16.9	44	6.8
Marijuana	33	5.1	13	2.0
Inhalant	14	2.2	4	0.6
Cocaine	6	0.9	3	0.5
Hallucinogen	1	0.2	0	0.0

The prevalence of sedative use in the last three months by participants was also high with a current prevalence of 6.8% (n=44). Hallucinogen was the least used substance in all centres with a current prevalence of 0.0% (n=0). (Table 2).

Pattern of psychoactive substance use in the last three months

Table 3 describes the pattern of use for psychoactive substances in the past three months by the participants. Eighty-four (12.9%) of the participants used opioid pain medications daily or weekly in the past three months while 23 participants (3.5%) had used tobacco either daily or four times weekly in the past three months. Again, 2.5% of the participants reported a daily or weekly use of mild stimulants and sedatives in the past three months.

Table 3: Pattern of Use of Psychoactive Substances in Past Three Months

Substance	Frequency of Use	of Use
	Less than weekly	Weekly/Daily
	n (%)	n (%)
Cocaine	647 (99.7)	2 (0.3)
Marijuana	639 (98.5)	10 (1.5)
Amphetamine	633 (97.5)	16 (2.5)
Sedatives	633 (97.5)	16 (2.5)
Tobacco	626 (96.5)	23 (3.5)
Heroin	565 (87.1)	84 (12.9)

Weekly: four times or more in a week

Socio-demographics and pattern of psychoactive substance use in the last three months

Tobacco: Males were significantly more likely to indulge in tobacco use daily or four times weekly in the past three months compared to the females (7.2% vs 0.8%; p<0.001).

Marijuana: The males compared to the females used marijuana daily or weekly in the last three months (3.2% vs 0.3%; p=0.003). Participants from other religious affiliations compared to the Muslims and Christians were more likely to use marijuana daily or four times weekly in the past three months and this was statistically significant (p=0.01).

Sedatives: The widowed compared to those who were married or single were more likely to use sedatives daily or four times weekly in the last three months (p=0.02).

Heroin: Those who were widowed compared to their married and single counterparts were more likely to have used opioid pain medications daily or four times weekly in the last three months (p=0.001). Similarly, those with either no formal or primary level of education compared to their counterparts with secondary or tertiary level of education were more likely to use opioid pain medication daily or four times weekly in the last three months (p=0.003).

Table 4: Level of Participants Risk to Adverse Effects of Psychoactive Substance Use

Substance	Low n (%)	Moderate n (%)	High n (%)
Inhalant	649 (100.0)	0 (0.0)	0 (0.0)
Hallucinogens	649 (100.0)	0 (0.0)	0 (0.0)
Injury risk	649 (100.0)	0 (0.0)	0 (0.0)
Cocaine	648 (99.8)	1 (0.2)	0 (0.0)
Marijuana	635 (97.8)	9 (1.4)	5 (0.8)
Sedatives	619 (95.4)	29 (4.5)	1 (0.2)
Tobacco	611 (94.1)	35 (5.4)	3 (0.5)
Amphetamine	607 (93.5)	41 (6.3)	1 (0.2)
Heroin/Opioid	449 (69.2)	196 (30.2)	4 (0.6)
Others	649 (100.0)	0 (0.0)	0 (0.0)

Level of risk of psychoactive substance use

Table 4 shows the level of risk exhibited by participants to the adverse effects of use of these psychoactive substances using the algorithm of the WHO ASSIST questionnaire. Among the participants in these facilities, 196 (30.2%) demonstrated moderate risk to opioid use while 4 (0.6%) demonstrated high risk to its use. Forty-one (6.3%) of these participants demonstrated moderate risk to stimulant use while only one participant (0.2%) demonstrated high risk to its use. Concerning the use of tobacco and marijuana, 3 (0.5%) demonstrated high risk to tobacco use, while 5 (0.8%) demonstrated high risk to marijuana use. However, all participants (100%) demonstrated low risk to the use of inhalants, hallucinogens and injury risk.

Socio-demographics and level of risk

Tables 5a to 5c describes the socio-demographic correlates of the level of risk of adverse effects of psychoactive substance use.

Tobacco: Being male was significantly associated with a risk of the adverse effects of tobacco use ($p < 0.001$). The Christians were more likely to be at risk of the adverse effects of tobacco use compared to the Muslims and those affiliated to other religion ($p = 0.02$).

Marijuana: Males compared to females were more likely to be at risk of the adverse effects of marijuana use ($p = 0.002$), while those affiliated with other religion compared to the Muslims or Christians were more at risk of the adverse effects of marijuana use ($p = 0.002$).

Stimulant: The males were significantly more likely to exhibit high risk to the adverse effect of mild stimulant use compared to the females ($p = 0.002$). Those aged within 41-50 years were more at risk of experiencing the adverse effects of stimulants use compared to other age groups ($p = 0.003$).

Table 5a: Participants' Socio-demographic Characteristics and Level of Risk to adverse effects of Psychoactive Substances

Variable/Substance	Level Low n (%)	Of Mod n (%)	Risk High n (%)	p-value	Variable/ Substance	Level Low n (%)	of Mode n (%)	Risk High n (%)	p-value
TOBACCO					MARIJUANA				
Sex					Sex				
Female	366 (98.7)	4 (1.1)	1 (0.3)	<0.001*	Female	369 (99.5)	2 (0.5)	0 (0.0)	0.002*
Male	244 (88.1)	31 (11.2)	2 (0.7)		Male	265 (95.7)	7 (2.5)	5 (1.8)	
Age (years)					Age (years)				
14-20	31 (96.9)	1 (3.1)	0 (0.0)	0.25	14-20	32 (100.0)	0 (0.0)	0 (0.0)	0.54
21-30	174 (96.7)	6 (3.3)	0 (0.0)		21-30	174 (96.7)	2 (1.1)	4 (2.2)	
31-40	170 (90.4)	16 (8.5)	2 (1.1)		31-40	185 (98.4)	2 (1.1)	1 (0.5)	
41-50	128 (94.1)	8 (5.9)	0 (0.0)		41-50	134 (98.5)	2 (1.5)	0 (0.0)	
51-59	107 (95.5)	4 (3.6)	1 (0.9)		51-59	109 (97.3)	3 (2.7)	0 (0.0)	
Marital Status					Marital Status				
Married	409 (94.9)	20 (4.6)	2 (0.5)	0.46	Married	424 (98.4)	5 (1.2)	2 (0.5)	0.38
Single	186 (93.0)	13 (6.5)	1 (0.5)		Single	193 (96.5)	4 (2.0)	3 (1.5)	
Widow	9 (90.0)	1 (10.0)	0 (0.0)		Widow	10 (100.0)	0 (0.0)	0 (0.0)	
Education					Education				
None/Primary	110 (92.4)	8 (6.7)	1 (0.8)	0.12	None/Primary	117 (98.3)	2 (1.7)	0 (0.0)	0.52+
Secondary	244 (92.8)	18 (6.8)	1 (0.4)		Secondary	259 (98.5)	3 (1.1)	1 (0.4)	
Tertiary	241 (96.8)	8 (3.2)	0 (0.0)		Tertiary	242 (97.2)	3 (1.2)	4 (1.6)	
Religion					Religion				
Christian	587 (95.1)	28 (4.5)	2 (0.3)	0.02 ^{bfs}	Christian	607 (98.4)	7 (1.1)	3 (0.5)	0.002*
Islam	10 (76.9)	3 (23.1)	0 (0.0)		Islam	13(100.0)	0 (0.0)	0 (0)	
Others	9 (81.8)	2 (18.2)	0 (0.0)		Others	8 (72.7)	2 (18.2)	1 (9.1)	
Occupation					Occupation				
Managerial/Tech	8(100.0)	0 (0.0)	0 (0.0)	0.94	Managerial/Tech	8 (100.0)	0 (0.0)	0 (0.0)	0.34
Professional	32 (97.0)	1 (3.0)	0 (0.0)		Professional	33 (100.0)	0 (0.0)	0 (0.0)	
Skilled	92 (92.9)	6 (6.1)	1 (1.0)		Skilled	95 (96.0)	1 (1.0)	3 (3.0)	
Partly skilled	79 (96.3)	3 (3.7)	0 (0.0)		Partly skilled	81 (98.8)	1 (1.2)	0 (0.0)	
Unskilled	285 (93.4)	19 (6.2)	1 (0.3)		Unskilled	297 (97.4)	7 (2.3)	1 (0.3)	
NOC	110 (94.8)	5 (4.3)	1 (0.9)		NOC	115 (99.1)	0 (0.0)	1 (0.9)	

Bfs: bonferroni significant, Bfns:bonferroni non-significant.

+FET, *p<0.05

Table 5b: Participants' Socio-demographic Characteristics and Level of Risk to adverse effects of Psychoactive Substances

Variable/Substance	Level of Risk			p-value	Variable/Substance	Level of Risk			p-value
	Low n (%)	Mod n (%)	High n (%)			Low n (%)	Mod n (%)	High n (%)	
COCAINE					AMPHETAMINE				
Sex					Sex				
Female	370 (99.7)	1 (0.3)	0 (0.0)	1.0+	Female	357 (96.2)	14 (3.8)	0 (0.0)	0.002*
Male	277 (100.0)	0 (0.0)	0 (0.0)		Male	249 (89.9)	27 (9.7)	1 (0.4)	
Age (years)					Age (years)				
14-20	32 (100.0)	0 (0.0)	0 (0.0)	0.2+	14-20	30 (93.8)	2 (6.2)	0 (0.0)	0.003 ^{bfs*}
21-30	180 (100.0)	0 (0.0)	0 (0.0)		21-30	176 (97.8)	4 (2.2)	0 (0.0)	
31-40	188 (100.0)	0 (0.0)	0 (0.0)		31-40	180 (95.7)	8 (4.3)	0 (0.0)	
41-50	136 (100.0)	0 (0.0)	0 (0.0)		41-50	121 (89.0)	14 (10.3)	1 (0.7)	
51-59	111 (99.1)	1 (0.9)	0 (0.0)		51-59	99 (88.4)	13 (11.6)	0 (0.0)	
Marital status					Marital Status				
Married	430 (99.8)	1 (0.2)	0 (0.0)	1.0+	Married	399 (92.6)	31 (7.2)	1 (0.2)	0.09
Single	200 (100.0)	0 (0.0)	0 (0.0)		Single	192 (96.0)	8 (4.0)	0 (0.0)	
Widow	10 (100.0)	0 (0.0)	0 (0.0)		Widow	8 (80.0)	2 (20.0)	0 (0.0)	
Occupation					Occupation				
Managerial/Technical	8 (100.0)	0 (0.0)	0 (0.0)	1.0+	Managerial/Tech	6 (75.0)	2 (25.0)	0 (0.0)	
Professional	33 (100.0)	0 (0.0)	0 (0.0)		Professional	33 (100)	0 (0.0)	0 (0.0)	
Skilled	99 (100.0)	0 (0.0)	0 (0.0)		Skilled	89 (89.9)	9 (9.1)	1 (1.0)	
Partly skilled	82 (100.0)	0 (0.0)	0 (0.0)		Partly skilled	78 (95.1)	4 (4.9)	0 (0.0)	
Unskilled	304 (99.7)	1 (0.3)	0 (0.0)		Unskilled	285 (93.4)	20 (6.6)	0 (0.0)	
NOC	116 (100.0)	0 (0.0)	0 (0.0)		NOC	110 (94.8)	6 (5.2)	0 (0.0)	
Education					Education				
No Formal/Primary	119 (100.0)	0 (0.0)	0 (0.0)		No Formal/Primary	107 (89.9)	12 (10.1)	0 (0.0)	0.10
Secondary	263 (100.0)	0 (0.0)	0 (0.0)		Secondary	245 (93.2)	17 (6.5)	1 (0.4)	
Tertiary	248 (99.6)	1 (0.4)	0 (0.0)		Tertiary	239 (96.0)	10 (4.0)	0 (0.0)	
Religion					Religion				
Christian	616 (99.8)	1 (0.2)	0 (0.0)		Christian	579 (93.8)	37 (6.0)	1 (0.2)	0.27+
Islam	13 (100.0)	0 (0.0)	0 (0.0)		Islam	11 (84.6)	2 (15.4)	0 (0.0)	
Others	11 (100.0)	0 (0.0)	0 (0.0)		Others	10 (90.9)	1 (9.1)	0 (0.0)	

*Bfs: bonferroni significant, Bfns:bonferroni non-significant.
+FET, *p<0.05*

DISCUSSION

Some substances were found to be commonly used among the attendees of the three primary care clinics, while others were rarely used. Generally, the rates of substances reported in this study are higher than the reports from a national survey of substance use previously conducted among the general population in Nigeria. ⁶ The national survey found a lifetime/current use in the following decreasing order of prevalence: tobacco (12.2%/5.3%), tranquillizers (11.3%/2.9%), and opiates (7.2%/2.2%). Cocaine and hallucinogens remained the least likely used substances

according to the report. ⁶ Comparatively, the pattern of substance use in terms of the order of use is dissimilar for the commonly used ones, while minor differences exist for the less prevalent ones.

The prevalence of substances such as tobacco, which is not a prescription drug, did not differ markedly from what was reported in the national survey, whereas, higher prevalence rate of prescription drugs such as tranquilizers and opiates was found in our study when compared to the national survey. This is understandable because our study participants consist of clinic patients, with medical condition(s) which can

Table 5c: Participants' Socio-demographic Characteristics and Level of Risk to adverse effects of Psychoactive Substances

Variable/Substance	Level of Risk			p-value	Variable/Substance	Level of Risk			p-value
	Low n (%)	Mod n (%)	High n (%)			Low n (%)	Mod n (%)	High n (%)	
SEDATIVES					HEROINE				
Sex					Sex				
Female	351 (94.6)	19 (5.1)	1 (0.3)	0.55	Female	256 (69.0)	113 (30.5)	2 (0.5)	0.95
Male	267 (96.4)	10 (3.6)	0 (0.0)		Male	193 (69.7)	82 (29.6)	2 (0.7)	
Age (Years)					Age (Years)				
14-20	32 (100.0)	0 (0.0)	0 (0.0)	0.29+	14-20	24 (75.0)	8 (25.0)	0 (0.0)	0.67
21-30	175 (97.2)	5 (2.8)	0 (0.0)		21-30	127 (70.6)	53 (29.4)	0 (0.0)	
31-40	179 (95.2)	9 (4.8)	0 (0.0)		31-40	133 (70.7)	54 (28.7)	1 (0.5)	
41-50	129 (94.9)	7 (5.1)	0 (0.0)		41-50	93 (68.4)	42 (30.9)	1 (0.7)	
51-59	103 (92.0)	8 (7.1)	1 (0.9)		51-59	71 (63.4)	39 (34.8)	2 (1.8)	
Marital Status					Marital Status				
Married	412 (95.6)	18 (4.2)	1 (0.2)	0.14+	Married	291 (67.5)	137 (31.8)	3 (0.7)	0.30
Single	191 (95.5)	9 (4.5)	0 (0.0)		Single	146 (73.0)	53 (26.5)	1 (0.5)	
Widow	8 (80.0)	2 (20.0)	0 (0.0)		Widow	5 (50.0)	5 (50.0)	0 (0.0)	
Occupation					Occupation				
Managerial/Tech	7 (87.5)	1 (12.5)	0 (0.0)	0.45+	Managerial/Tech	6 (75.0)	2 (25.0)	0 (0.0)	0.17
Professional	31 (93.9)	2 (6.1)	0 (0.0)		Professional	25 (75.8)	8 (24.2)	0 (0.0)	
Skilled	96 (97.0)	3 (3.0)	0 (0.0)		Skilled	72 (72.7)	25 (25.3)	2 (2.0)	
Partly skilled	77 (93.9)	4 (4.9)	1 (1.2)		Partly skilled	65 (79.3)	17 (20.7)	0 (0.0)	
Unskilled	290 (95.1)	15 (4.9)	0 (0.0)		Unskilled	196 (64.3)	107 (35.1)	2 (0.7)	
NOC	112 (96.6)	4 (3.4)	0 (0.0)		NOC	79 (68.1)	37 (31.9)	0 (0.0)	
Education					Education				
No Formal/Primary	111 (93.3)	8 (6.7)	0 (0.0)	0.13	No Formal/Primary	73 (61.3)	46 (38.7)	0 (0.0)	0.04 ^{bfn} s
Secondary	256 (97.3)	7 (2.7)	0 (0.0)		Secondary	179 (68.1)	80 (30.4)	4 (1.5)	
Tertiary	236 (94.8)	13 (5.2)	0 (0.0)		Tertiary	181 (72.7)	68 (27.3)	0 (0.0)	
Religion					Religion				
Christian	590 (95.6)	26 (4.2)	1 (0.2)		Christian	425 (68.9)	188 (30.5)	4(0.6)	0.95+
Islam	13 (100.0)	0 (0.0)	0 (0.0)		Islam	10 (76.9)	3 (23.1)	0 (0.0)	
Others	10 (90.9)	1 (9.1)	0 (0.0)		Others	8 (72.7)	3 (27.3)	0 (0.0)	

*Bfs: bonferroni significant;; Bfns: bonferroni non-significant. +FET, *p<0.05*

contribute to substance use. For instance, patients with chronic pain are frequently seen in primary health care settings³⁵ and opioid-analgesics, which are effective pain relievers, are prescribed to treat such conditions.³⁶ Regrettably, this substance may not be prescribed with caution and an over-extended use may lead to dependence; or patients may be reluctant to stop use, hence, they proceed to self-medication.³⁶ Tramadol, an example of an opioid, which is widely abused in this manner is unfortunately easy to purchase without prescription over the counter from pharmacy shops or 'patent drug stores' in the country of study. This same explanation

applies to the high use of tranquilizers reported in this study: benzodiazepines, which are the common tranquilizers taken, are frequently used to improve sleep among persons suffering from insomnia who are likely to visit PHC.³⁷ Unfortunately, the abuse of some of these prescription drugs can worsen the medical condition, complicate management of the patient and at overdose lead to death. The high prevalence of some substances such as mild stimulant and tobacco could be because they are licit, thus they are cheap to procure. Sometimes they are administered for therapeutic purposes; for example, kola nut is often chewed to keep alert or as an

antitussive.³⁸ On the other hand, the illicit substances are low in prevalence because they are often not within the reach of people due to legal restriction, more so they are expensive to obtain. However, among these illicit substances, prevalence of marijuana use is relatively high, a report similar to the findings in other studies.^{6, 39} This is so because it is cultivated in the region of study, thus it is readily available, accessible and affordable to use. The public health implication of this is that, the disease burden attributable to marijuana will be high because marijuana use can lead to compromised respiratory function, cardiovascular disease, negative effects on adolescent psychosocial development and mental health, and dependence syndrome.

40

Conversely, the prevalence rates of most substances in this study are lower than those reported in other studies carried out in primary health centres outside the country.^{41, 42} For instance, in the survey carried out by McNeely and colleagues in an adult primary health centre, in New York, they found a lifetime/current use of tobacco, marijuana, opioids and stimulants to be: 59.4%/32.0%, 50.5%/17.8%, 30.7%/10.0% and 13.9%/5.0%%, respectively.⁴¹ The prevalence of opioids and stimulants in our study were higher than what McNeely and colleagues reported, it should be noted that there are differences in the composition of what was surveyed as opioids and stimulants. For example, the main stimulants available in this study comprised the mild ones such as caffeine

which is very common, and consumed frequently as kola nut and sometimes as coffee; while the harder stimulants such as amphetamine and others were what McNeely and colleagues investigated in their study. Also, the opioids available in this study consisted predominantly of tramadol with very few use of heroine and other opioids, while the other harder forms of opioids such as heroine and morphine were what they studied.⁴¹ Lower prevalence of substances such as marijuana in our study compared to others could be as a result of socio-legal reasons. Unlike in the USA, the use, sale and possession of marijuana are regarded as criminal offences in Nigeria. Therefore, the use is discouraged and the disclosure of use is also hidden. This may account for the lower prevalence in this study.

In terms of daily users in the last three months, the high prevalence rates of opioid analgesic and tobacco use may be a reflection of the addictive nature of these substances.^{43, 44} Drugs such as these used on a regular or daily basis will often cause interference in personal and occupational functioning because of increased amount of time spent to obtain or take the substance or to recover from its effects. The effect on such substances on the brain and behaviour may also lead to break down in interpersonal and social relations. Concerning the relationship of gender and frequency of use in the last three months, our results showed what has been consistently reported in previous studies: the male gender is known to be associated

with higher marijuana and tobacco use/abuse.⁴⁵⁻⁴⁸ A combination of biological, sociocultural and environmental factors may be responsible for the male preponderance,^{49, 50} moreover males are more likely to be involved in risky behaviours than females.⁵¹

Regarding the association between the widowed and regular use of opioids and sedatives, our postulate is that this category of persons who have lost their spouses are probably older, lonely and depressed thus more likely to experience pain and sleep problems that predisposed them to higher risk of using those substances regularly.⁵² For the relationship between the less/none formally educated persons and regular opioid use, our explanation is that persons with little or no education are less likely than the more literate ones to know the implication of regular drug use. A further explanation for this co-association could be that both share similar predisposing factors such as poverty, crime, unemployment and even genetics.⁵³

The association between traditional religion and marijuana use may suggest a poor drug regulation among adherents of such faith which contrast with most mainstream religions which discourage the use of psychoactive substances.⁵⁴ Previous studies have shown a relationship between drug use and those without religious involvement.^{45, 54} It is worrisome that some of these drugs are taken at a level that is risky. Earlier surveys have shown a wide variation in the range of moderate to high

risk use of these substances (16.1-72.0%), opioid (1.0-26.8%), marijuana (4.2-60.1%) and tranquilizers (1.5-29.8%).^{41, 42, 55} Many of the substances surveyed in our study fell below the range reported in the cited studies. The reason for this discrepancy in result may be due to differences in sample population; for instance, the study by Dawson-Rose et al comprise HIV positive patients while that of Stringfellow et al comprise homeless patients whom are all more likely to be at a higher risk of substance use.^{42, 55}

It is important to note that socio-demographics such as the male gender and traditional religion were significantly and independently associated with a high level risky use of one psychoactive substance or the other and the reasons for this have been earlier discussed. Furthermore, an association between the age group and risky stimulant use was observed in this study. Finally, the pattern noted was an increasing order of prevalence of risky use with increasing age. Older persons take caffeine in the form of kola nut as an antitussive and for its centrally stimulating effects to improve cognition, while the younger ones especially students take it in form of coffee to keep alert and enable them withstand fatigue.⁵⁶

Limitations and strength

Some limitations are to be considered when interpreting our findings. Firstly, there is the possibility of lapses with recall for substances used in the past. Secondly,

there is the tendency to respond in a socially desirable manner because it was a self-report. Thirdly, the study is a cross-sectional one and analysis carried out was bivariate, therefore, relationship found between substance use (risky use) and other variables cannot be said to be predictive of one another. Lastly, ASSIST which is used primarily as a screening tool was applied to identify substance use disorder. Even though it has been found to be valid among drug users in determining drug use disorders, ^{57, 58} a diagnostic instrument might be more useful. However, being a multi-centre study qualifies it as a strength of the study, even though the sample may not be representative of all the regions in the country.

Conclusion

The study has shown that opioid pain medication was the most commonly ever used substance by patients attending the primary care clinics, followed by stimulants, tobacco, and tranquillizers. While there were isolated association of some socio-demographic variables with substance use prevalence and risky use, the male gender was more consistent than other variables in this relationship. The study highlights the need for routine screening of patients for psychoactive substance use including misuse of prescription medications. Again, special attention should be given to the male gender because of the greater use of psychoactive substances among them.

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