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Prevalence, Predictors and Patterns of Psychoactive substance use among HIV seropositive adults at Aminu Kano Teaching Hospital Kano, North Western Nigeria

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Abstract

The concomitant use of psychoactive substances in HIV infection has significant implications for both transmission and progression of the disease as well as in affecting the adherence to treatment regimen. This study assessed the prevalence and pattern of psychoactive substance use as well as determined the predictors among HIV+ population at the Aminu Kano Teaching Hospital in north-western Nigeria. This study utilized the sociodemographic questionnaire, clinical proforma, the 14-item Hospital Anxiety and Depressive Scale (HADS) for data collection and the multidrug urine screen test device to detect the drug metabolites in the subjects' system. Prevalence of psychoactive substance use was 25.2%. Male gender [Odds Ratio (O.R.) = 8.34, 95% C.I.= 2.852 - 9.495, p<0.001], the absence of antiretroviral medications [O.R.= 3.65, 95% C.I.=0.231 - 0.611, p=0.034], the diagnosis of anxiety and depressive disorders (O.R.= 4.61, 95% C.I. = 0.486 - 0.884, p<0.001) and (O.R. = 6.98, 95% C.I. = 0.189 - 0.574, p<0.001) respectively were the independent predictors of psychoactive substance use among the respondents. The commonest used substances were alcohol and Cannabis, most use multiple substances. We therefore recommend periodic screening for psychoactive substances in HIV+ adults in order to optimize care and clinical outcome.

Keywords: Psychoactive substance, prevalence, predictors, HIV- seropositive, North-western Nigeria.

INTRODUCTION

The relationship between HIV/AIDS and psychoactive substance use has been known since the genesis of the pandemic especially among intravenous drug abusers (IVDAs) which is a significant mode of transmission (Mansur et al., 1981; D'Aquila and Williams, 1987; Des Jarlais et al., 1989; Heymer et al., 1992). Illicit substance use is increasingly becoming an issue of public health significance and its relationship with HIV/AIDS particularly in sub-Saharan Africa that accounts for the majority of the global HIV/AIDS burden has clearly been established (Ndetei, 2004; Adelekan and Lawal, 2006; Fisher et al., 2007; UNAIDS, 2013). The rates of abuse

of illicit substances vary significantly across the globe; approximately 28% of HIV-infected people in the United States reported the use of illicit substances (Sohler et al., 2007). In Africa, data from Kenya, indicated that 31.2% of injection drug users (IDUs) and 6.3% of non-injection drug users referred for HIV counselling and testing in Mombasa were HIV positive and the findings have been fairly consistent across many studies throughout the subcontinent (Deveau et al., 2006; Needle et al., 2006; Abdool et al., 2006; Timpson et al., 2006). Though research efforts geared towards establishing the nexus between drug abuse and HIV/AIDS had focused extensively on the intravenous mode of transmission in IVDAs, the role of drug use in HIV/AIDS extends beyond simply transmitting the human immunodeficiency virus through injection (Douaily et al., 2003).

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Other possible ways in which drug use facilitate the spread of HIV and alter the manifestation of the disease include; (1) through drug-induced behavioural disinhibition, mainly in the form of intoxication-related hypersexuality due to stimulant use, as well as through unsafe, promiscuous sexual behaviour in sex-for-drugs transactions that can accompany drug use (Fullilove et al., 1989; Doku, 2012; Chowdry et al., 2013). (2) drug use may be a cofactor for HIV by lowering resistance to the virus through impairing cell-mediated immunity (Elton, 1994; Alcabes and Friedland, 1995; Wang et al., 2005; Purohit et al., 2013). Drugs implicated in immune suppression include the opiates, cocaine, alcohol, marijuana, and others (MacGregor, 1988; Friedman et al., 2003). (3) drug use may add to the risk of the development of many of the forms of morbidity associated with the virus in HIV seropositive persons (Hagan and Des Jarlais, 2000; Nijwahan et al., 2008). Continued parenteral drug use may stimulate HIV activation and replication also places users at risk for secondary infections (Zagury et al., 1986; Prottengeier et al., 2014). (4) Finally, psychopathology associated with drug use may complicate and further exacerbate the neuropsychiatric and mental health problems associated with AIDS itself (Bakti, 1990).

Apart from the afore-mentioned roles, comorbid drug abuse in the setting of HIV/AIDS aids disease progression (Kapadia et al., 2005) has critical implications in the management of the seropositive subjects. Hinkin et al. (2007) in a longitudinal study that examined the impact of drug use and abuse on medication adherence among HIV seropositive adults reported a fourfold greater risk of antiretroviral therapy (ART) adherence failure among drug abusers (Arnsten et al., 2001, 2002; Hinkin et al., 2004; Howard et al., 2002; Tucker et al., 2004; Sarna et al., 2008; Reda and Biadgilign, 2012; Gonzalez et al., 2013). The potential mechanisms by which substance use may impact adherence behaviour, include; neurocognitive deficits, psychosocial impairment and exacerbation of psychiatric dysfunction (Chang et al., 2002; Volkow et al., 2001; Meade et al., 2011; Theofilou et al., 2012; Katz et al., 2013; Belenky et al., 2014; Kelly et al., 2014). This drug use related ART suboptimal adherence is associated with increased risk of adverse virologic and clinical outcomes, including increased viral replication, the development of drug-resistant HIV strains (Gifford et al., 2000; Liu et al., 2001; Wainberg and Friedland,1998), and clinically significant worse health-related outcomes (Paterson et al., 2000; Chander, 2010).

Research evidence have shown variable patterns of psychoactive substance use among HIV seropositive individuals (Chander, 2010; Prentiss et al., 2004; Green et al., 2010) and irrespective of the pattern and type of the substances used, the consistent predictors are: male gender, lower socio-economic status, poor social support base, maladaptive coping strategies and treatment for a psychiatric disorder (O'Connell et al., 2013; Seme et al., 2005; Pence et al., 2008; Liu et al., 2014; Conen et al., 2009). Despite the adverse effects the uses of illicit substances exert in the scenario of HIV infection, few studies have so far been conducted to address this issue in sub-Saharan Africa which bears the major brunt of the pandemic.

The goal of this study is two-fold. First, we aimed to determine the prevalence and pattern of psychoactive substance use among HIV+ adults in Aminu Kano Teaching Hospital in north-western Nigeria. Second, we aimed to examine the association between sociodemographic and clinical variables of the subjects with the use of psychoactive substances.

MATERIALS AND METHODS

This was a cross-sectional study that was conducted at the outpatient antiretroviral therapy (ART) clinic of the Aminu Kano Teaching Hospital in Kano north-western, Nigeria. At the time of study, the institution had 2,752 HIV seropositive patients (AKTH archives, 2012). The sample size was calculated using a prevalence rate of 9.8% of HIV positivity among all drug users reported by Adelekan et al. (2000) in Lagos, south-western Nigeria. This yielded a minimum sample size of 136 but 272 respondents were interviewed in order to enhance the power of the study. These subjects were enrolled into the study using the systematic random sampling (n^{th} sampling) technique and a sampling ratio of 1:10 were adopted. Hence, the sampling interval was every other tenth patient until the requisite number of 272 patients was reached. The list of all the patients in the clinic constituted the sampling frame and the starting point on the list was chosen at random using the random number tables.

The study population included all HIV seropositive adults attending the ART clinic of the institution who gave their informed consent. By the local definition of the hospital, these consisted of all patients from 16 years and above as patients who are 15 years and below are considered paediatric HIV/AIDS cases. The exclusion criteria were: refusal to grant informed consent and those with severe comorbid physical illness or cognitive impairment capable of affecting their response. For the purpose of screening out those with cognitive impairment, cognitive functioning test that assessed for orientation in time, place and person, attention and concentration, as well as immediate, recent and remote memories were conducted by a single investigator on all the respondents. Based on the outcome of this clinical test alone, those respondents found to have impairments on any of these cognitive domains were excluded.

The following instruments were administered to all the respondents:
(1)   An anonymous sociodemographic questionnaire designed by the authors that solicited for age, sex,

marital status, level of education and occupational status of the respondents using the social stratification system of Borofka and Olatawura, 1976. This system classified individuals based on their occupations into: Social class I (highly skilled professionals like doctors, lawyers, etc), social class II (intermediate skilled professionals like technicians, nurses etc), social class III (low skilled respondents like junior clerks, drivers and low ranking military men), social class IV (unskilled respondents like drivers, messengers etc) and social class V (unemployed respondents).

(2) Clinical proforma that extracted information such as the current clinical staging of the disease, index comorbid conditions and placement on antiretroviral medications or not from the respondents' clinical records. Other vital information that are captured in the proforma are: the current use of psychoactive substances, their nature and pattern of use as well as the reason(s) for the use.

(3) Hospital anxiety and depression scale (HADS): This is a 14-item scale consisting of the anxiety and depressive subscales. Each subscale has 7 items that are scored in a Likert fashion from 0 to 3 with a total score of 21 for each of the subscales. Scores of 0 - 7 are categorized as normal, 8 - 10 categorized as borderline abnormal, and 11 - 21 as abnormal (cases). Caseness is defined by a score of ≥ 8 on each of the subscales as has been demonstrated by previous studies (Bjelland et al., 2002). It has been validated for use in Nigeria in both clinical and community samples and has demonstrated excellent psychometric properties (Abiodun, 1994).

(4) The multi-drug urine screen test device: The Hangzhou Deangel Biological device (LOT 001131001) was used. This is a 5 drug panel test device that detects for the presence of urinary metabolites of 5 drugs namely: Alcohol, Cannabis, Benzodiazepines, Nicotine, Tramadol and other Opiates in the urine of active users. This was adapted for this study because; it has been used for a long time in the drug rehabilitation unit of the hospital with reliable outcomes.

Procedure

This was a two-staged study. In the first stage, the sociodemographic questionnaire, the clinical proforma, and the Hospital Anxiety and Depression Scale (HADS) were administered to all eligible respondents by a set of investigators. In the second stage, all respondents who were identified as current users of psychoactive substances based on the outcome of the first stage interview together with 10 per cent of non-users (20 respondents) were subjected to Urine Drug Analysis test to ascertain the veracity of their claims by a different set of investigators who were blinded to the outcome of the initial interview. The essence of testing the additional twenty non-users was to correct for misclassification rate. For the purpose of this study, only those respondents who attested to the use of psychoactive substances with positive Urine Drug Analysis test were considered as "current users" and whose data were analyzed.

Ethical Consideration

Ethical clearance was obtained from the ethical review board of the Aminu Kano Teaching Hospital. Written informed consent was also obtained from all the respondents. In order to ensure confidentiality, codes were used for data entry and analyses.

Data Analysis

The statistical package for social sciences (SPSS) version 16.0 was used for data analysis. Descriptive statistics were used to summarize the data. Bivariate analyses were used to explore the associations between the sociodemographic and clinical variables with the use of psychoactive substances among the subjects. Binary logistic regression analysis was then conducted to determine the independent predictors of psychoactive substance use among the respondents by use of psychoactive substance as the independent variable and the factors found to be significant on bivariate analysis as covariates. Significance was computed at $p < 0.05$, two-tailed.

RESULTS

Of the 272 HIV positive subjects recruited for the study, the data of only 250 subjects were finally analyzed yielding an overall response rate of 91.9%. The data of 22 respondents were not analyzed due to: refusal to grant informed consent (n=8), presence of debilitating comorbid illness (n=5), presence of cognitive impairment (n=3), and those whose questionnaires could not be analyzed due to missing data (n=6).

Finally, of the 250 subjects whose data were analyzed, females constituted 52.4% of the subjects, over 62% of the subjects were ≤ 34 years and 81.6% of the subjects belonged to lower social classes, namely: classes III, IV, and V. The distribution of the other sociodemographic variables are depicted in table 1.

Prevalence of psychoactive substance use among the respondents

Out of the 250 subjects interviewed, sixty three (25.2%) met the study's criteria of current users of psychoactive substance, namely attesting to the use of the substance with positive urine drug analysis test result. All the 63 respondents who attested to the use of the substances

Table 1. Socio-demographic characteristics of the respondents

Characteristics	Psychoactive subst. Abusers [n(%)]	Psychoactive subst. Non-abusers [n(%)]	Total [n(%)]	Statistics
		N= 250		
Gender				
Male	52(82.5)	67(35.8)	119(47.6)	χ^2=41.22, df=1, p=<0.001**
Female	11(17.5)	120(64.2)	131(52.4)	
Age group (in years)				
15 - 24	11(17.5)	21(11.2)	32(12.8)	χ^2=6.84, df=4, p=0.144
25 – 34	31(49.2)	93(49.7)	124(49.6)	
35 – 44	10(15.9)	49(26.2)	59(23.6)	
45 – 54	6(9.5)	19(10.2)	25(10.0)	
≥ 55	5(7.9)	5(2.7)	10(4.0)	
Occupation/Social class				
Social class I	5(7.9)	9(4.8)	14(5.6)	χ^2=31.42, df=4, p=<0.001**
Social class II	6(9.5)	26(13.9)	32(12.8)	
Social class III	10(15.9)	59(31.6)	69(27.6)	
Social class IV	14(22.2)	69(36.9)	88(33.2)	
Social class V	28(44.5)	24(12.8)	52(20.8)	
Educational level				
No education	19(30.2)	9(4.8)	28(11.2)	χ^2=31.69, df=4, p=<0.001**
Primary	21(33.3)	78(41.7)	99(39.6)	
Secondary	11(17.5)	35(18.7)	46(18.4)	
Tertiary	7(11.1)	37(19.8)	44(17.6)	
Islamic	5(7.9)	28(15.0)	33(13.2)	
Marital status				
Married	15(23.8)	96(51.3)	111(44.4)	χ^2=16.64, df=3, p=0.0008**
Single	25(39.7)	39(20.9)	64(25.6)	
Widowed	17(27.0)	33(17.7)	50(20.0)	
Divorced	6(9.5)	19(10.1)	25(10.0)	

**Statistically significant findings

tested positive while all the 20 non-users who had the urine drug test were negative, thus indicating the reliability of the test. Of the 63 current drug users, over 82% were males, 66.7% were ≤ 34 years, over 70% are currently unmarried and 81% of them had no tertiary education. These findings are depicted in table 1.

Sociodemographic and clinical variables associated with psychoactive substance use

Analysis of the sociodemographic variables for association with psychoactive substance use among the subjects revealed that there was a statistically significant association between male gender and substance use (χ^2=41.22, p=<0.001). Lower social class, lower education attainment and being unmarried were also associated with the use of psychoactive substances among the subjects, as shown by these statistically significant outcomes: (χ^2=31.42, p=<0.001), (χ^2=31.69, p=<0.001) and (χ^2=16.64, p=0.0008) respectively. The findings are presented in table 1.

For the clinical variables, later stages of the disease, index co-morbidities and absence of antiretroviral therapy were significantly associated with the use of psychoactive substances as indicated by the following significant findings: (χ^2=35.97, p=<0.001), (χ^2=17.01, p=0.005) and (χ^2=17.88, p=<0.001) respectively. Absence of use of antiretroviral (ARV) medications, the presence of anxiety and depressive disorders were also associated with psychoactive substance use in the respondents as indicated by the following statistically significant findings; (χ^2=17.88, p=<0.001), (χ^2=26.41, p=<0.001) and (χ^2=41.54, p=<0.001) respectively. These findings are presented in table 2.

Finally, after subjecting all the variables found to have statistically significant associations with psychoactive substance use in the respondents to logistic regression, only male gender, absence of antiretroviral (ARV) medications, presence of anxiety and depressive disorders were found to be independent predictors. Males were 8.34 times more likely to use illicit drugs than their female counterparts [Odds Ratio (O.R.) = 8.34, 95% C.I.= 2.852 - 9.495, p<0.001]. Respondents

Table 2. Clinical characteristics of the respondents

Characteristics	Psychoactive subst. Abusers [n(%)]	Psychoactive subst. Non-abusers [n(%)]	Total [n(%)]	Statistics
		N= 250		
CDC clinical staging				
Stage 1	2(11.1)	37(19.8)	44(17.6)	χ^2=35.97, df=3, p=<0.001[**]
Stage 2	5(7.9)	78(41.7)	83(33.2)	
Stage 3	27(42.9)	34(18.2)	61(24.4)	
Stage 4	24(38.1)	38(20.3)	62(24.8)	
Index comorbidities				
Tuberculosis	18(28.6)	46(24.6)	64(25.6)	χ^2=17.01, df=5, p=0.005[**]
Candidiasis	10(15.9)	24(12.8)	34(13.6)	
Pneumonia	8(12.7)	19(10.2)	27(10.8)	
Diarrhoeal dis.	5(7.9)	9(4.8)	14(5.6)	
Others	8(12.7)	5(2.7)	13(5.2)	
None	14(22.2)	84(44.9)	98(39.2)	
Antiretroviral therapy				
Absent	45(71.4)	76(40.6)	121(48.4)	χ^2=17.88, df=1, p=<0.001[**]
Present	18(28.6)	111(59.4)	129(51.6)	
Presence of anxiety disorder				
Present	36(57.1)	42(22.5)	78(31.2)	χ^2= 26.41, df=1, p=<0.001[**]
Absent	27(42.9)	145(77.5)	172(68.8)	
Presence of depression				
Present	43(68.3)	44(23.5)	87(34.8)	χ^2=41.54, df=1, p=<0.001[**]
Absent	20(31.7)	143(76.5)	163(65.2)	

[**]**Statistically significant findings**

yet to commence ARVs were about 3.65 times more likely to use psychoactive substances than those already commenced on the medications [O.R.= 3.65, 95% C.I.=0.231 - 0.611, p=0.034]. The Odds of using of using psychoactive substances were 4.61 and 6.98 times more likely in respondents with anxiety and depressive disorders respectively than in those without. These are illustrated by the following statistically significant findings, (O.R.= 4.61, 95% C.I. = 0.486 - 0.884, p<0.001) for anxiety disorder and (O.R. = 6.98, 95% C.I. = 0.189 - 0.574, p<0.001) and depressive disorder in table 3.

Patterns of psychoactive substance use among the subjects

Alcohol was the commonest substance used by the subjects (25.5%), this was followed by Cannabis (23.5%) and Opiates such as codeine-containing cough syrups and Tramadol (21.4%). The commonest route of administration was oral (48%) and then smoking (34.7%). No intravenous mode of administration was recorded among the subjects. Over 44% of the subjects

used the substances on daily basis, 22.2% use the substance at least once weekly and about 32% use the substances occasionally. Majority of the subjects (55.6%) use multiple psychoactive substances. Over 30% of the subjects used the substance to alleviate distress, while 25.3% of the subjects used the substances to increase energy. Other reasons advanced for the use of the substances include to enhance sleep, increase appetite and for recreational purposes which accounted for 15.9%, 12.7% and 15.9% respectively. About 59% of the subjects have been using the psychoactive substances prior to their diagnosis of HIV while 41.3% started using the substances after knowing the HIV serostatus. These findings are presented in table 4.

DISCUSSION

This study assessed the prevalence and patterns of psychoactive substance use among HIV seropositive individuals in north-western Nigeria as well as the sociodemographic and clinical associates. To the best of

Table 3. Logistic regression for independent predictors of psychoactive substance use

variable	Exp (B)	95% C.I. Lower - Upper	p-value
Gender	8.434	2.852 - 9.495	<0.001**
Educational level	1.008	0.757 - 1.343	0.96
Occupation	0.782	1.154 - 2.882	0.10
Marital status	0.923	0.857 - 1.470	0.40
CDC Staging	0.641	0.449 - 0.917	0.227
Comorbidities	1.123	2.537 - 6.396	0.681
ARV Medications	3.651	0.231 - 0.611	0.034**
Presence of Anxiety	4.617	0.486 - 0.884	<0.001**
Presence of depression	6.982	0.189 - 0.574	<0.001**

**Statistically significant findings

Table 4. Pattern of drug abuse in the subjects

Variable	Total number of subjects [n(%)]
	N = 63
Specific drug of abuse	
Alcohol	25(25.5)
Cannabis	23(23.5)
Benzodiazepines	18(18.4)
Opiates and Tramadol	11(11.2)
Route of administration	21(21.4)
Oral	47(48.0)
Smoking	34(34.7)
Sniffing	1(1.0)
Intravenous	0(0.0)
Others	16(16.3)
Frequency of use	
Daily	28(44.4)
Weekly	14(22.2)
Monthly	1(1.6)
Occasionally	20(31.8)
Number of substances abused	
Single substance	28(44.4)
Multiple (poly) substance	35(55.6)
Reasons for abuse	
Increase energy	16(25.3)
Enhance sleep	10(15.9)
Alleviate distress	19(30.2)
Recreational purposes	10(15.9)
To increase appetite	8(12.7)
Time of commencement of use	
Before HIV diagnosis	37(58.7)
After HIV diagnosis	26(41.3)

NB: Some of the totals are greater than 63 because some of the respondents use ≥ 2 substances

our knowledge, this is the second study that addressed this fundamental topic in this part of Nigeria after the one by Yunusa et al. (2011) in Sokoto.

The prevalence of 'active' psychoactive substance use among the subjects reported in this study was 25.2%. This translates to about every one out of four subjects in the study was actively using psychoactive substances. This finding was lower than the prevalence

rate of about 50% of use of all psychoactive substances reported by Yunusa et al. (2011) among HIV+ adults. That study included both illicit substances (e.g. solvents and alcohol) and licit ones such as Kolanut and Coffee which are not culturally sanctioned in northern Nigeria and because of this, significant proportions of the population are likely to be social users especially of the licit substances while this study strictly recruited subjects who used illicit substances, hence that could account for the discrepancy obtained between the results of the two studies. This was however, higher than the rate of 10.6% reported for alcohol abuse among HIV seropositive subjects in Jos, north-central Nigeria by Goar et al. (2011). The study by Goar et al. 2011 however, assessed only the hazardous use of alcohol among the subjects which restricted the spectrum of substances used as well as their pattern, thus accounting for the lower rates. The prevalence of 25% reported in this study is almost consistent with that of 28% reported by Sohler et al. (2007) in the United States. Other studies conducted in different parts of the Africa by Ndetei et al. (2004) in Kenya, Deveau et al. (2006), Timpson et al, (2006), were among intravenous drug users, hence, their outcomes could not be generalized to cover for other substances of abuse. Similarly, most studies in Europe and North America, that addressed this issue focussed mainly on intravenous drug abuse. The strength of this study lies in the fact that it assessed the 'active usage' of a wide range of psychoactive substances among the subjects using an objective means of detecting the drugs in the human system (urine dug analysis) while the findings of the previous studies were based on subjective assessments.

Among the sociodemographic variables analysed for relationship with psychoactive substance use among the subjects, only male gender, lower educational attainment, lower social class and marital status were found to be significant associates of substance use. The outcome revealed that males were more than 8.43 times more likely to use psychoactive substances than females. This finding is in consonance with that of Gureje et al., (2007) who reported higher likelihood of use and abuse of all substances by males than females in a national survey among adult Nigerians. Research findings from different parts of the globe have also revealed that; compared to men, women are less likely to be substance abusers and the onset of their substance abuse tends to be later in life (Hernandez-Avila et al., 2004; Hser et al., 2004). Though, these earlier findings were not specific to HIV-infected populations, it could be translated that the predisposition of more males than females to use psychoactive substances in the general population could be narrowed down to the persons living with HIV/AIDS. Studies in Africa by Goar et al., (2011) and Seme at al., (2005) that assessed the use of psychoactive substances among HIV+ adults have confirmed this assertion.

This study also found statistically significant relationships between lower educational attainment and belonging to lower social class with the use of psychoactive substances among the subjects. This result is in tandem with that of Seme et al., (2005) in Ethiopia that found a significant relationship between psychoactive substance use and lower income among HIV+ adults in Ethiopia and because lower educational attainment and lower social class are inversely related to an individual's income, it could be interpreted that these variables are significant associates of substance use among the subjects. This finding however needs to be interpreted with caution since people of the lower social classes are over represented in this study because the clinic offers free antiretroviral medications and other services to them. The stigmatization associated with living with HIV in Africa might be a hindrance for people of higher social classes to seek for treatment in such settings and are therefore likely to seek for treatment in private settings. Those who are either single, divorced or widowed are also more likely to use the substances. It could be inferred that thus being married as an indicator of social support is protective against drug abuse generally and the lack of it in this case might serve as a predisposing factor.

All the clinical variables analyzed namely; centre for disease control (CDC) staging of the disease, index comorbid conditions and use of antiretroviral therapy have been found to have statistically significant relationship with the use of psychoactive substances among the subjects. These relationships are complex and thus no definite explanations could be given, however, certain hypothesis could be postulated from authors' perspectives. One of the possible postulates is that persons living with HIV (PLHIV) in advanced stages of the disease with comorbid conditions are likely to be weak, anorexic and in distress and some of the reasons given by the subjects in this study for use of the substances were to alleviate some of these symptoms, this could account for the higher use of the psychoactive substances among this group. Absence of antiretroviral therapy was also found to be a significant associate of substance use among the subjects, those not on antiretroviral medications were 3.65 times more likely to use psychoactive substances than those on it. The use of antiretroviral medications leads to clinical improvement with attendant increase in the sense of wellbeing of subjects thus leading to the resolution of some of the distressing symptoms. Hence, the use of antiretroviral medications might be protective against some of the reasons adduced by the subjects. The presence of comorbid psychiatric diagnoses, namely; anxiety and depressive disorders also significantly increased the likelihood of the use of psychoactive substances as shown in earlier studies by Conen et al. (2009) and Liu et al. (2014). The effects of the substances in alleviating the symptoms of these conditions might account for the usage.

Finally, the outcome of logistic regression to

determine the predictors of psychoactive substance use among the respondents revealed that only gender, absence of antiretroviral medications, presence of anxiety and depressive disorders were independent predictors. A earlier highlighted, these findings are in consonance with that of Gureje et al. (2010), Goar et al. (2011), Conen et al. (2009), Liu et al. (2014).

In terms of the pattern of use of psychoactive substances, Alcohol was the commonest substance of abuse followed by Cannabis as well as Opiates such as codeine-containing cough syrup and Tramadol. Gureje et al. (2007) also reported Alcohol to be the commonest substance of abuse among adult Nigerians. High rate of usage of Cannabis was also recorded in this study which is consistent with the outcome of a study among commercial motorcyclists in Zaria, northern Nigeria (Alti-Muazu and Aliyu, 2008). The use of Opiate-containing drugs such as cough syrups and Tramadol was also noted to be high among the respondents, this outcome is in conformity with the new trend of drug abuse recorded in north-western Nigeria where the use of cough syrups is becoming fashionable (Dankani, 2012). The commonest route of administration was oral which was followed by inhalational. This is because of the nature of most of the substances abused. No intravenous mode of administration was recorded in this study, this could be due to the sampling method adopted in the study. Most studies that assessed intravenous drug use among HIV+ subjects in sub-Saharan Africa adopted the snow-ball technique whereby identified subjects are used to recruit other ones. This study however used the systematic random sampling technique without regards to the class of drugs used by the subjects. Significant proportion of the subjects also used more than one substance which is an affirmation of the outcome of an earlier study by Pence et al. (2008) and of our routine clinical experience in addiction clinics. Most of the reasons advanced by the subjects ranging from increasing energy to boosting appetite, from alleviating distress to enhancing sleep and recreational purposes have been reported in other studies that addressed similar issues (Prentiss et al., 2004; Green et al., 2010). The spectrum of symptomatology in HIV/AIDS and the psychological distress of living with the condition could account for the myriad of reasons. Most of the subjects started using psychoactive substances before they were even diagnosed with HIV as reported by Goar et al. (2011). This might be reflective of general societal pattern.

LIMITATIONS

The major limitations of this study are; (1) the multi-drug screening test device used detects the metabolites of only five drugs, therefore drugs not captured in the panel are likely to be missed (2) the cross-sectional nature of this study does not permit for making any causal inference.

CONCLUSION

This study highlighted the rate at which PLHIV use psychoactive substances as well as the sociodemographic and clinical variables associated with the use of drugs in the participants who are already the victims of societal misperceptions. There is therefore the need for the incorporation of periodic screening for psychoactive substance use among subjects particularly with identified vulnerability factors in order to optimize clinical outcomes.

DECLARATION OF INTEREST

The authors declare no interest.

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