African Journal of Drug & Alcohol Studies, 17(1), 2018

PSYCHOACTIVE SUBSTANCE USE DISORDERS AMONG FEMALES IN NORTHERN NIGERIA: FINDINGS OF A FIVE-YEAR DESCRIPTIVE SURVEY AT THE FEDERAL NEUROPSYCHIATRIC HOSPITAL, MAIDUGURI

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ABSTRACT

The aim of this study was to determine a five-year prevalence trend of substance use disorders and the modes of presentation of female drug users in North-Eastern Nigeria. It was a retrospective, cross sectional study in which sociodemographic, clinical and drug-related data of 2,731 clients who were attended to, at the Federal Neuropsychiatric Hospital, Maiduguri over a five year period were extracted from their clinical records. The overall prevalence of psychoactive substance use disorders among the female participants was 9.3% [n = 253] with rising rates from 8.2% in 2012 to 12.2% in 2016, and The prevalence trend shows a statistically significant change (χ^2 = 51.764, p = ≤ 0.001). One hundred and sixty five [65.2%, 95% C.I. = 45.81 - 79.45] met the ICD-10 diagnostic criteria for dependence. Codeine-containing cough syrup, 73 [28.8%, 95% C.I. = 22.18 - 42.27], and Tramadol, 41 [16.2%, 95% C.I. = 10.24 - 25.18] were the commonest substances of abuse. Most of them were either compelled by relatives, 103 [40.71, 95% C.I. = 29.46 - 53.17] or were accidentally found to be using drugs at presentation, 58 [22.92, 95% C.I. = 15.75 - 28.93]. Based on these outcomes, the design and adaptation of culturally appropriate and gender-specific educational programmes and stigma-reduction strategies, are recommended.

Keywords: Psychoactive substance use, Females, North-Eastern Nigeria

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INTRODUCTION

Northern Nigeria is one of the most conservative regions of the world mainly because of its ethno-religious composition (Jappah, 2013; Terwase, 2014). Despite the relative resistance to external influences, the abuse of psychoactive substances, mainly; Cannabis, Tramadol, and other stimulants were previously documented among the populace but almost exclusively in males (Gureje, *et al.*, 2007; Adamson, *et al.*, 2015; Gudaji, *et al.,* 2016; Ibrahim, *et al.*, 2017). However, within the last decade, the abuse of psychoactive drugs by females in this sub-region of the country assumed a larger dimension in the context of the 'national drug abuse epidemic' (van Etten and Anthony, 2001; Becker & Hu, 2008). This emerging drug abuse trend among females in Northern Nigeria necessitated several pronouncements from policy makers and critical stakeholders (Suleiman, 2016; Umoru, 2017).

Previous research has reported remarkable gender differences in terms of psychoactive substance use disorders; with reportedly higher prevalence rates, earlier age of onset, tendency to use multiple psychoactive substances and exhibition of externalizing behaviors among males than in females (Becker, 1999; Brady & Randall, 1999). The female drug users, on the other hand, are more likely to exhibit 'telescoping', which is a phenomenon that is characterized by a more rapid development of the features of dependence from initiation, a higher risk of developing physical and behavioral complications, as well as the risk of foetal malformations, such as the foetal alcohol syndrome (Becker, Perry, and Westenbroek, 2012; and Substance Abuse and Mental Health Services Administration (SAMHSA), 2014). Other reported peculiarities of substances use disorders in females are; the higher tendency of being initiated by a partner, increased risk of being sexually or physically abused, and increased usage in the context of comorbid psychiatric diagnoses (Greenfield, *et al.*, 2010; Cotto, *et al*., 2010; Agabio, *et al.*, 2016).

In sub-Saharan Africa, the abuse of drugs by men is tolerated in some cultures but the use of psychoactive substances by the womenfolk depicts gross moral failure, and it is usually considered a taboo (Sorsdahl, Stein, and Myers, 2012; Paul, *et al.*, 2014). Female drug abuse is a subject of intense stigmatization in most conservative African societies like the setting in which this study was conducted (Paul, *et al.*, 2014; Florez, *et al.*, 2015). Based on anecdotal experiences, the negative societal perception of female drug abuse, and the negative consequences the users as well as the caregivers experience significantly encumber the presentation of the clients to conventional treatment centres. Secondly, most studies conducted in Nigeria on drug and alcohol use disorders were mixed gender studies that did not consider the changing gender trends nor the peculiarities of the female clients in terms of advocacy and intervention. This is the first hospital-based study in North-Eastern Nigeria that looked at drug use disorders exclusively among females.

This study sought to ascertain; (1) the prevalence and pattern of substance use disorders among female clients, (2) the changing trends of female drug abuse within a five year review period, and (3) the modes of presentation of female drug users.

METHOD

Study area

This study was conducted at the drug addiction treatment, education, and rehabilitation (D.A.T.E.R.) unit of the Federal Neuropsychiatric Hospital, Maiduguri which is located in North-eastern Nigeria. As a matter of hospital policy, any client seen in the facility is assessed by the therapeutic team which consists of a psychiatrist, a clinical psychologist, a psychiatric nurse, and a social worker. All diagnoses were made according to the International Classification of Diseases and Health- related Disorders version-10 (ICD-10) criteria of the World Health Organization.

Study Design

This was a retrospective, cross-sectional, non-randomized study. The medical records of all adult clients with substance use disorders seen in the hospital within the period under review (January, 2012 to December, 2016) were retrieved from the electronic database of the health information management unit of the hospital.

Principles for Recruitment

Inclusion/Exclusion Criteria

The inclusion criteria were; adults between the ages of 18 and 65 years, with an identified ICD-10 diagnosis of substance use disorder, and an objective evidence of drug use using the multi-panel urine drug analysis assay. The exclusion criteria were; missing relevant data such as clinical diagnoses or absence of urine drug analysis results and comorbid physical illness such as neurocognitive impairment or end-organ damage.

Procedure

Information over a five-year period (2012 to 2016), was collected from the electronic database which logs the sociodemographic and clinical information of all patients attended to at the facility. At the first stage, the records of all adult clients irrespective of gender, with diagnosis of substance use disorders, were retrieved. Substance use disorder (SUD) is defined by the presence of any of the following; acute intoxication, withdrawal syndrome, abuse, dependence, or substance-induced disorder. There were 2,847 clients identified out of which 2,731 met the eligibility criteria at the end of this stage. In the second stage, the data of female clients who met the eligibility criteria were extracted on annual basis and the total for the five year study period.

Measures

Sociodemographic data: anonymous, precoded and pretested sociodemographic questionnaires were used to collect the relevant sociodemographic characteristics which included gender, age, years of education, occupation, and marital status.

Clinical and drug-related data: which included age at onset of use of psychoactive substance, mode of initiation, the psychoactive substance the client is using, whether or not the client has met the ICD-10 criteria for dependence, and the modes of presentation were all extracted from the clinical records of the clients.

Ethical Consideration

The Institutional Review Board of the Federal Neuropsychiatric Hospital, Maiduguri reviewed and approved the study protocol.

Data Analysis

Analysis was done using the Statistical Package for Social Sciences version 18.0 (SPSS 18.0). Discrete variables were computed as frequencies and percentages. Chi-square 'test of goodness of fit' was used to determine the association between frequency and annual variations. The confidence interval was set at 95% confidence interval, p-value $\leq$ 0.05 was used to denote significance, two-tailed.

RESULTS

A total of 2,847 clinical records of clients were retrieved for the period under consideration but only 2,731 met the eligibility criteria for the study. The remaining 116 were not included due either to incomplete data, absence of urine drug analysis result, or being outside the age bracket stipulated for the study participants.

Sociodemographic Profiles of the Respondents

Of the total 2,731 study participants, there were 253(9.3%) females while the remaining 90.7% were males. Over 70% of the drug users in both groups fall between the ages of 18 to 37 years. Almost 63% of the female participants had less than 12 years of education in comparison to over 72% of the male study participants. Over 73% of the females were either unskilled workers or unemployed as against 90% of the male participants. Over 95% of both groups were either single or divorced/separated. These findings are presented in table 1.

Table 1. Sociodemographic Characteristics of the Study Participants

Variables	Females n(%)	Males n(%)	Total n(%)
		N = 2731	
Age in years [Mean = 26.41yrs±4.78 SD, Range = 18 - 61yrs]			
18 - 27	112(44.3)	1215(49.0)	1327(48.6)
28 - 37	83(32.8)	993(40.1)	1076(39.4)
38 - 47	35(13.8)	176(7.1)	211(7.7)
48 - 57	19(7.5)	72(2.9)	91(3.3)
≥ 58	4(1.6)	22(0.9)	26(1.0)
Years of education [Mean = 8.28yrs ± 2.31 SD, Range = 0 - 18yrs]			
≤ 12 years	159(62.8)	1792(72.3)	1951(71.4)
> 12 years	94(37.2)	686(27.7)	780(28.6)
Occupational status			
Skilled	3(1.2)	18(0.7)	21(0.8)
Intermediate skilled	17(6.7)	49(2.0)	66(2.4)
Semi-skilled	48(19.0)	144(5.8)	192(7.0)
Unskilled	104(41.1)	1341(54.1)	1445(52.9)
Unemployed	81(32.0)	926(37.4)	1007(36.9)
Marital status			
Married	11(4.4)	114(4.6)	125(4.6)
Single	207(81.8)	2289(92.4)	2496(91.4)
Divorce/Separated	35(13.8)	75(3.0)	110(4.0)

Gender Comparison of Five Years Prevalence Trends of Substance Use Disorders

The overall prevalence of drug abuse reported among females in this study is 9.3% (n = 253), while it is 90.7% (n = 2478) among males. However, the annual prevalence rates from 2012 to 2016 varied. Among females, the prevalence was 8.2% in the first year of the study, then the rates dropped to 6.3% and 6.0% in 2013 and 2014 respectively, then the rates increased to 11.6% and 12.2% in 2015 and 2016 respectively. Among the male participants, the prevalence rates increased steadily from 2012 to 2014, but decreased in 2015 and 2016, with rates of 91.8% in the first year and 87.8% in the fifth year. These findings are presented in table 2 and figure 1 respectively. The prevalence trend shows a statistically significant change ($\chi^2 = 51.764$, $p = \leq 0.001$) as depicted in table 3.

Table 2. Gender Comparison of Five-Year Prevalence Trend of Substance Use Disorder

Year	Females n(%)	Males n(%)	Total n(%)
		N = 2731	
2012	42(8.2)	473(91.8)	515(18.9)
2013	31(6.3)	462(93.7)	493(18.0)
2014	26(6.0)	406(94.0)	432(15.8)
2015	68(11.6)	519(88.4)	587(21.5)
2016	86(12.2)	618(87.8)	704(25.8)
Total	253(9.3)	2478(90.7)	2751(100.0)

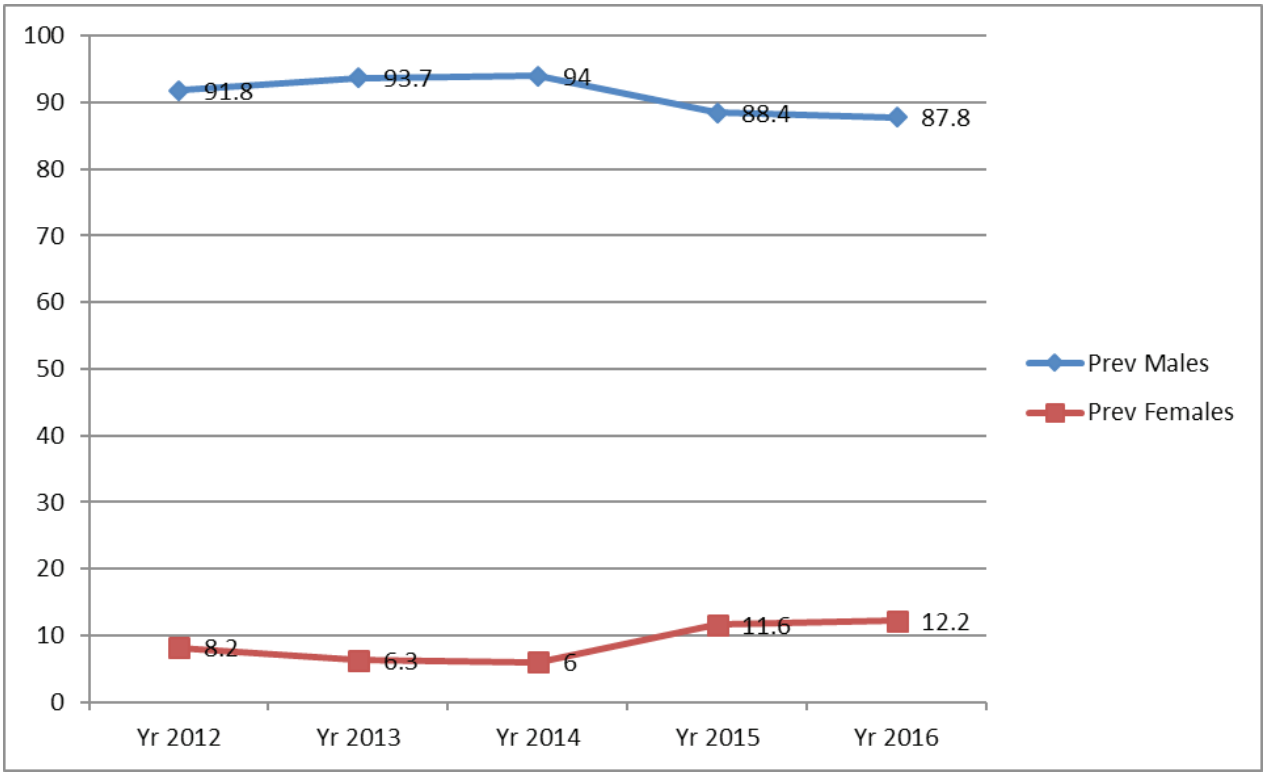

Figure 1. Comparative Five-Year Prevalence Trend Between Males and Females

Table 3. Bivariate Analysis of the Five-Year Prevalence Trend

Year	Total Users N = 2478	Female Users n = 253	%	χ^2	P-value
2012	515	42	8.2	51.764	<0.001**
2013	493	31	6.3		
2014	432	26	6.0		
2015	587	68	11.6		
2016	704	86	12.2		

Clinical Profiles of the Study Participants

The average age of onset of psychoactive substance use among the subjects is 24.45 ± 3.72 years, with a range of 12 to 56 years. Peer group pressures and use out of curiosity were the commonest 'push factors' for initiation while Codeine-containing cough syrup (CCCS), Tramadol, and Benzodiazepines were the most commonly used substances. Over 65% of the participants also met the ICD-10 diagnostic criteria for dependence (table 4).

Table 4. Clinical Parameters of the Female Study Participants

Variable	Frequency (%)	95% C.I.
	N = 253	
Age in years at onset of drug use [Mean =24.45±3.72 SD, Range = 12-56]		
<18	42(16.6)	10.26 - 24.77
18 - 27	126(49.8)	39.97 - 58.46
28 - 37	66(26.1)	22.91 - 35.72
38 - 47	17(6.7)	3.66 - 11.54
48 - 57	2(0.8)	0.27 - 1.44
≥ 58	0(0.0)	-
Mode(s) of initiation		
Peer group influence	149(58.9)	47.61 - 72.58
By a partner	17(6.7)	3.33 - 10.54
Prescribed by a health worker	17(6.7)	3.73 - 9.47
Out of curiosity	44(17.4)	10.89 - 24.17
Others	26(10.3)	5.67 - 14.13
Type(s) of psychoactive substance used		
Alcohol	8(3.2)	1.66 - 6.52
Shisha	26(10.3)	6.14 - 18.33
Cannabis	17(6.7)	3.51 - 10.72
Cough Syrup with codeine (CCCS)	73(28.8)	22.18 - 42.27
Jankee	23(9.1)	6.18 - 16.19
Benzodiazepine	31(12.2)	8.54 - 18.76
Pentazocine	5(2.0)	1.20 - 2.94
Cocaine	1(0.4)	0.12 - 0.83
Tramadol	41(16.2)	10.24 - 25.18
Multiple Psychoactive Substances	18(7.1)	4.77 - 12.21
Other	10(4.0)	2.12 - 6.70
Met ICD-10 Criteria for Dependence		
Yes	165(65.2)	45.81 - 79.45
No	88(34.8)	30.15 - 41.56

Modes of Presentations of Female Psychoactive Substance Users

The major modes of presentation of the clients to the facility were: compulsion by relatives to present 40.7% (n = 103), incidental finding 22.92% (n = 58), and because of the occurrence intolerable withdrawal symptoms 14.62% (n = 37) (table 5).

DISCUSSION

This study assessed the prevalence and patterns of psychoactive drug use among females in North-eastern Nigeria, the changing annual prevalence trend over a five year duration, and the modes of presentation of the study participants. This is informed by the growing public concerns and the public health implications of the raging psychoactive drug use epidemic in the country in general, and the North-east sub-region in particular.

The sociodemographic characteristics of the female drug users revealed, over two-third of them fall between 18 to 37 years, with an average age of onset of drug usage of 24.45 years, while just about a quarter were above 37 years with fewer subjects above 58 years of age. This is consistent with the findings of earlier studies by Gureje *et al.*, (2007), Alti-Muazu and Aliyu, (2008), Dankani, (2013), & Adamson *et al.*, (2015), in different parts of the country that have all demonstrated prevalent use of psychoactive substances among subjects below 40 years of age. This could be attributed to the socialization process, stressors encountered and the curiosity exhibited by the young adults as posited by Boys, *et al.*, (2001), Musick, *et al.,* (2008), Calcaterra, *et al.,* (2014), as well as Pavarin & Consonni, (2013).

In terms of their educational levels and occupational status, most of the female drug users had less than 12 years of education and an overwhelming majority of them (>70%) were either unskilled workers or unemployed. This is in tandem with the findings of earlier studies by Badel & Greaney, (2013), Dankani, (2014), and Ibrahim, *et al.,* (2017). This relationship could be explained by the obvious relationship between low education and employment status, as well as by the negative effect of psychoactive drugs on educational attainment and career progression. Like in some previous studies by Dankani, (2012) and Ibrahim, *et al.,* (2015) in similar settings, most of study participants (>95%) were either single or divorced. This could be attributed to the stigmatizing effects of feminine drug abuse or the inability of the drug users to settle and establish a secured relationship.

Table 5. Mode(s) of Presentation of Female Psychoactive Drug Users to the Facility

Mode of Presentation	Frequency (%)	95% C.I.
	N = 253	
Involuntary (Compelled by Relatives)	103(40.71)	29.46 - 53.17
Voluntarily	22(8.71)	5.18 - 11.24
Incidental (Acute Psychotic Episode)	58(22.92)	15.75 - 28.93
Intolerable withdrawal symptoms	37(14.62)	10.27 - 19.52
Referred from other sources	33(13.04)	8.06 - 11.59

In terms of the prevalence trends of drug abuse among the female subjects, the overall prevalence for the five year duration was 9.3%, but the rate at the inception of the study was -8.2% in 2012, which declined to 6.3% and 6.0% in 2013 and 2014 respectively. This then increased to 11.6% in 2015 and 12.2% in 2016. This was indicative of a rising trend, but the transient decline in 2013 and 2014 could be due to the raging 'Boko Haram insurgency' which coincided with the peak of the insecurity. This might have restricted the access to mental health care particularly by the womenfolk. The rising prevalence rates thereafter, could be attributed to the escalating wave of abuse of psychoactive substances, most especially Codeine-containing cough syrup (CCCS) by young adults (especially females) and Tramadol in Northern Nigeria which were earlier reported by Dankani, (2012), and Ibrahim, *et al.,* (2017). This could be due to ready availability and accessibility to the drugs without much control on the part of regulatory and enforcement agencies. The other probable reason for the increased prevalence among the female subjects might be due to increased mental health seeking behaviour due to the health promotion programmes sponsored by the institution on local radio channels. The prevalence trend of the male subjects was directly opposite to that of the females which is reflective of the changing gender trend.

Regarding the clinical profiles of the study participants, most of the subjects were initiated into psychoactive substance use due to peer group pressure and out of curiosity to know how it feels to take the drug. This is consistent with the outcomes of previous studies by Reed and Rountree, (1997), and by Simons-Morton and Farhat, (2010). A peculiar method of initiation noted in the female subjects in this study, is that by partners in intimate relationships which has also been reported by Fleming, *et al.*, (2010). The three commonest psychoactive substances used by the subjects were codeine-containing cough syrup (CCCS) reported in over a quarter of the them, Tramadol reported in over 16% of the subjects, and Benzodiazepines reported in 12% of them. This finding supports earlier assertion by the Substance Abuse and Mental Health Services Administration (SAMHSA), (2014) that female psychoactive substance users are more likely to use Opiates and sedatives while their male counterparts that are more likely to use alcohol and Cannabis. In addition, over 7.0% use multiple psychoactive substances. Multiple psychoactive substance use is common in the setting the study was conducted as reported by Gudaji, *et al.,* (2016) in Kano and Ibrahim, *et al.,* (2017) in Maiduguri. Finally, over 65% of the subjects met the ICD-10 diagnostic criteria for dependence. This might not be unconnected with the phenomenon of 'telescoping' which posits that women develop features of dependence at a faster rate when compared to their male counterparts (Brady & Randall, 1999).

An interesting outcome of this study was that less than one-tenth of female subjects presented voluntarily to the facility for treatment, while over three-fifth of them were either compelled by caregivers or were incidentally found to be using psychoactive substances when they presented with acute psychotic episodes. This is pertinent, considering the fact that self-efficacy and optimal motivation as indicated by the willingness to

present self for treatment is a positive prognostic indicator as posited by Ciraulo, *et al.*, (2003), and Gau, *et al.,* (2007) in the management of substance use disorders. The factors possibly responsible for the high rate of involuntary presentation include; stigmatization of mental illness, most especially feminine drug use, and the misconceptions about the aetiology of mental illnesses which are still being viewed from the supernatural perspective in most sub-Saharan African settings as reported by Adebowale and Ogunlesi, (1999); Kabir, *et al.,* (2004); Isa, *et al.,* (2008); Adewuya, *et al.*, (2008); Audu, *et al.,* (2011); Sheikh, *et al.*, (2015); and Armiya'u, *et al.*, (2015).

Strength and Limitations of the Study

This is the first study that attempts to answer the question of psychoactive substance use exclusively among females in northern Nigeria based on available literature, while the limitations include: (i) it is a hospital-based study, therefore, it might not be a true reflection societal problem since most patients do not present to the facility for the fear of being stigmatized (ii) causal inference cannot be made because of the cross sectional nature of the study.

Conclusion and Recommendations

This study revealed that there is a rising prevalence trend in the use of psychoactive substances among females, especially those in the 18 to 37 years age bracket in Northeastern Nigeria. Peer group pressure, curiosity and induction by a partner were the most common methods of initiation into drug use, and that CCCS and Benzodiazepines were the most common substances of abuse with over 60% of them meeting the criteria for dependence. The rate of voluntary hospital presentation is abysmally low. These findings have some policy implications. The authors, therefore, recommend the designing of culturally appropriate and gender-specific educational programmes that will mitigate the escalating scourge. Secondly, the operational capacities of control agencies should be enhanced to effectively implement drug demand reduction strategies as contained in existing policies. Thirdly, stigma-reduction strategies associated with female drug use should be implemented through massive community mobilization via social and conventional media outlets.

Competing Interests

The authors declare no competing interests

Acknowledgement

The authors are profoundly grateful to Mrs. Mary Midala, the head of health information management unit of the hospital and her entire staff for their immense help. The authors also acknowledge Mr. Mohammed Adamu (Abba) for providing support during data collection and entry.

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