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Patterns of substance use and cessation intentions among youths in internally displaced persons camps and host community in Northeastern Nigeria, 2021

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Abstract

Introduction: Forced displacement leading to internal displacement, especially in developing countries, is a growing global public health problem. The additional presence of substance use and abuse among forcefully displaced young people worsens the challenge by posing long-term health, social and legal consequences for both substance users and the general public. A better understanding of the pattern and drivers of substance use will be useful for the prevention and control of the menace among this vulnerable population. This study, therefore, aims to assess and compare the prevalence and willingness to stop substance use among youths in Internally Displaced Persons (IDP) camps and their host communities in Borno State, Nigeria.

Methods: A comparative cross-sectional study was conducted among youths (15-29 years old) in IDP camps and the host communities in Maiduguri, North-East Nigeria. A multistage sampling technique was used to recruit respondents from their households into the two study groups. Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), and Stages of Changes Readiness and Treatment Eagerness Scale (SOCRATES) instruments, were pretested and used to assess the prevalence, types and pattern of substance use, as well as willingness to stop substance abuse, via interviewer-administration

Results: Three hundred (300) respondents were surveyed, comprising one hundred and fifty (150) each, from IDP camp and their host communities. Male-to-female ratios were 1:0.85 for the host and 1:0.67 for IDP study groups. The mean age was 21.9 ± 4.58 years (15-29 years), with significantly younger respondents in IDP compared with host communities. Overall 138 respondents were involved in substance abuse, yielding a prevalence rate of 46.0%. The prevalence of substance use among host and IDP study groups was 59.3% and 32.7%, respectively ($p<0.05$). Among substance users, the mean age at onset of substance use was 17.9 ± 3.6 years, with significantly earlier onset among IDP compared with host groups ($p<0.05$). Also, the mean duration of substance use was 5.39 ± 3.3 years, but with a significantly longer duration of use among IDP compared with host groups ($p<0.05$). Tobacco was the most commonly abused substance with high (15.2%) and moderate (33.3%) degrees of dependence, and a significantly higher proportion among IDP compared with host groups ($p<0.05$). In both groups, the commonest social means of taking substances was with friends, who were also the most common introducers of substances to respondents in both study groups. Most subjects had low levels of recognition (94.9%), ambivalence (62.0%) and taking steps (72.3%). Compared with respondents in the host group, those in the IDP group had a significantly higher proportion of high degree for taking steps (20.4% vs. 4.5%, $p<0.05$). Multinomial regression analysis identified age and male gender as the significant

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predictors of substance use (p<0.00). For every unit increase in age by one year, there was a 15% increased likelihood of substance use. More so, compared with females, males had a 12.28 times increased likelihood of substance use (p<0.05).

Conclusion: There is a high prevalence of substance abuse among youths forcefully displaced due to Boko Haram insurgency in Northern Nigeria. Youths should be gainfully employed and/or engaged in diverse forms of capacity-building activities. Rehabilitation services should be made available in host communities and IDP camps, to provide health education and counselling, towards prevention, treatment and control of substance use and its consequences.

Keywords: Substance use; IDPs; Host communities; Maiduguri

1. Introduction

The World Health Organization (WHO) defines substance abuse as the harmful consumption of psychoactive substances, such as alcohol and illegal narcotics. (1) An estimated 296 million people, or 5.8% of the world's population between the ages of 15 and 64 years, used at least one drug in 2021. (2) According to projections, the prevalence of substance use will rise by 11% globally and by 40% in Africa. (3) The menace of substance use and eventual abuse has been associated with high morbidity and mortality, with youths using more drugs than adults, and having higher levels of use than in past generations. (3,4) An estimated 50% of people with substance use problems have been noted to have at least one form of mental health problem throughout their life course. (5) In sub-Saharan Africa (SSA), alcohol is the main psychoactive substance produced, while cannabis is the main illicit drug cultivated and consumed. (6) The illicit drug trade in West Africa is estimated at millions of US Dollars. (7) Among several factors associated with the high burden of substance use, vulnerability occasioned by conflict-related forced migration is key.

Globally, over 71 million individuals were internally displaced across nations and continents. (8) Within the last two decades, Nigeria has had a persistent armed conflict due to banditry, kidnappings and the Boko Haram insurgency, mainly in the North East region. (9) In Nigeria, about 2,388,703 people were internally displaced. The Boko Haram insurgency started in 2009 and has displaced more than 2.5 million people, thereby, creating internally displaced persons (IDP) camps in several communities mostly in Northern Nigeria. This forced displacement potentially increases the risk of substance use, with untoward mental health problems. The common mental health problems among persons in IDP camps are depression, post-traumatic stress disorder (PTSD), generalized anxiety and panic attacks. Consequently, studies among displaced persons in diverse settings have reported varying rates of substance use, ranging from 31.8% in Pakistan to 20% in Nigeria. (10,11) The prevalence rate of substance use in northeastern Nigeria in 2017 was estimated at 13.6%. The relationship between mental illness and substance use has also been well documented. (12,13) In 2013, the United Nations on Drug and Crime (UNODC), the European Union (EU) and the Nigerian government started a project aimed at reducing substance abuse and crime rate, which is being funded by the EU and implemented by the UNODC. (14) In Nigeria, the National Drug Law Enforcement Agency (NDLEA) and the National Agency for Food and Drug Administration and Control (NAFDAC) monitor possession and consumption of substance use. (15,16) These international and local agencies highlight the growing problem of substance abuse and the need for it to be curbed. Despite the efforts by international and local agencies to curb the menace of abuse of substances, substance use, driven by insurgency, persists in IDP camps. Also, there is paucity of data on the prevalence of substance abuse in the IDP camps in the areas of insurgencies in northeast Nigeria. Therefore, the objective of this study is to determine the prevalence of substance abuse and associated factors in the study setting.

2. Material and methods

2.1. Study Area

The study was conducted in Maiduguri, Borno State community and internally displaced camps. Borno State is situated in Northeastern Nigeria, and shares borders with the three neighbouring countries of Niger Republic, Chad, and Cameroun and the states of Adamawa, Gombe and Yobe in Nigeria. (17) Maiduguri has two Local Government Areas (Maiduguri Metropolitan Council and Jere). The LGA are urban with a population of 749,123 according to the 2006 census.(18) With an annual growth rate of 3.2%, the population is estimated at 1,180,617 in 2024. Of the population, 22.7% are youths (15-29 years) with 12.5% females and 10.2%. (19)

The Boko Haram insurgency started in North-East Nigeria in 2009 with about 4 million people displaced from their homes due to the insurgency. This led to the creation of IDP camps within the state capital. (20)

There are 138 IDP camps in Maiduguri but only eight (NYSC camp, Bakasi camp, EYN Christain Association of Nigeria Centre camp, Mohammed Goni College of Legal and Islamic Studies (MOGCOLIS) camp, Teacher's Village, Stadium camp, Farm Centre camp and Muna El Badawy camp) are operated and run by the government. Initially, the structure of the IDP camps was based on senatorial districts but was later merged due to lack of available space and logistics. Therefore, each camp has a representation of several local governments. (21)

2.2. Study Design

The study was a comparative cross-sectional study involving youths in IDP camps and in the host communities.

2.3. Study Population and Duration

The study populations were youths aged 15-29 years living in IDP camps and the host communities in Maiduguri, Borno State for at least one year.

2.4. Sample Size Determination

The minimum sample size to determine a difference in substance use among youths living in IDP camps and the host communities with a significant at the 5% level and with a 90% chance of detecting the difference (power) was calculated using the formula for comparison of two proportions. (25) After calculating and adding an allowance for 10% non-response, a minimum sample size of 274 was increased to 300 respondents to increase the power of the study and for better generalization to the larger populace.

2.5. Sampling Technique

After Community Entry, A Multistage Sampling Technique Was Used To Select 150 Respondents From Host Communities And 150 Respondents From IDP Camps Giving A Total Of 300 Respondents. In The Selection Of Respondents From The IDP Camps, Simple Random Sampling By Balloting Was Used To Select Four IDP Camps Out Of The Eight IDP Camps In Maiduguri. A Proportionate Allocation Ratio Of 3:1 Was Applied To Select Three Camps From MMC (Bakassi, Teacher's Village, And Stadium) And One Camp From Jere LGA (Farm Center). Systematic Random Sampling Was Used To Select Households Within The Chosen Camps. Within Selected Households, One Eligible Youth (Aged 15-29) Was Chosen.

In The Host Community, One Ward Was Selected From The 15 Wards In MMC (Shehuri North) And One From The 12 Wards In Jere LGA (Mairi) Using Simple Random Sampling By Balloting. One Settlement Was Randomly Selected From Each Ward: Gangamari In MMC And Gomari Costin In Jere. Systematic Random Sampling Was Used To Select Households. Within Selected Households, One Eligible Youth (Aged 15-29) Was Chosen.

2.6. Data Management

A semi-structured interviewer-administered questionnaire was used. This was adapted from a WHO-designed instrument the alcohol, smoking and substance involvement screening test (ASSIST) and Stages of Changes Readiness and Treatment Eagerness Scale 8d (SOCRATES). The latter is an experimental instrument designed to assess readiness for change in alcohol /drug users. SOCRATES subscales into acceptable range (ambivalence = 0.54; recognition = 0.87; taking steps = 0.84). (22–24)

The data were cleaned by checking for any data collection or coding errors. Data entry and analysis were carried out with the aid of the International Business Machines-Statistical Package for the Social Sciences (IBM-SPSS) Version 21.0. Frequency distributions of the variables were developed. Means and proportions were calculated, while associations between variables were tested using appropriate statistical significance tests- t-test, fisher's test, and chi-square.

2.7. Data analysis plan

Data collected was entered into Statistical Package for Social Sciences (SPSS) version 29.0 software for analysis. Descriptive analysis of the data included absolute and relative frequencies for categorical variables while numerical variables were summarized using means and standard deviations. Chi-square or Fisher's exact test was used to compare differences in proportions of categorical dependent or outcome variables and categorical independent or predictor variables. The cut-off point for the univariate logistic regression (bivariate) analysis was set at a 5% significance level.

2.8. Ethical Considerations

Ethical approval was obtained from the Ethics and Research Committee of the Federal Neuropsychiatric Hospital, Maiduguri. Permission and approval for the research were also obtained from the medical emergency department of the State Ministry of Health. Prior to data collection, the Borno State Emergency Management Agency (SEMA) was made to be aware of the research, via official notification of their country office and appropriate representative(s) at the IDP camps in Maiduguri, North East Nigeria

3. Results

Data was obtained from three hundred (300) respondents comprising one hundred and fifty (150) each from the IDP camp and their host communities. In Table 1, in both study groups, there were more males than females, with a male-to-female ratio of 1:0.85 (host) and 1:0.67 (IDP). However, the difference in proportions was not statistically significant. The mean age was 21.9 ± 4.58 years (15-29 years), with significantly younger respondents in IDP than in host communities (47% vs. 24%, p<0.001)". Primary education or lower level was more common among IDP (82.6% vs 18.0%), while secondary education or higher was common among the host group (82.0% vs 17.4%, p<0.05). Most subjects (215, 71.7%) were single, with no significant difference in marital status comparing study groups. There was a significantly higher proportion of artisans among IDP (54.7% vs. 22.0% p<0.001) and students among host groups (46.0 vs.14.0 p<0.001). Salaried work or a job was the most typical source of income (65.3%), though this was significantly more common among IDP (74.0% vs 56.7 p<0.001), while the parental source was more common among the host group (39.3% vs 13.3%, p<0.001)

Table 1 Socio-demographic Characteristics of the Respondents (n=300)

Variable	Host n (%)	IDP n (%)	Total n (%)	Test Statistics
Gender				
Male	81 (54.0)	90 (60.0)	171 (57.0)	
Female	69 (46.0)	60 (40.0)	129 (43.0)	0.29
Age groups (in years)				
15-19	36 (24.0)	71 (47.3)	107 (35.7)	
20-24	56 (37.3)	36 (24.0)	92 (30.7)	0.001*
25-29	58 (38.7)	43 (28.7)	101 (33.6)	
Mean ± SD	22.9 ± 4.05	20.9 ± 4.88	21.9 ± 4.58	<0.001*
Educational level				
None	3 (2.0)	24 (16.0)	27 (9.0)	
Quaranic	18 (12.0)	44 (29.3)	62 (20.7)	
Primary	6 (4.0)	56 (37.3)	62 (20.7)	<0.001⸸*
Secondary	57 (38.0)	22 (14.7)	79 (26.3)	
Tertiary	66 (44.0)	4 (2.7)	70 (23.3)	
Marital status				
Single	109 (72.7)	106 (70.7)	215 (71.7)	
Married	35 (23.3)	40 (26.7)	75 (25.0)	
Divorced/separated	5 (3.3)	2 (1.3)	7 (2.3)	0.57⸸
Widowed	1 (0.7)	2 (1.3)	3 (1.0)	
Occupation				
Artisan	33 (22.0)	82 (54.7)	115 (38.3)	

Student	69 (46.0)	21 (14.0)	90 (30.0)	
Petty trader	25 (16.6)	27 (18.0)	52 (17.3)	<0.001⸸*
Driver	10 (6.7)	8 (5.3)	18 (6.0)	
Housewife	9 (6.0)	1 (0.7)	10 (3.3)	
Farmer	0 (0.0)	9 (6.0)	9 (3.1)	
White collar job	3 (2.0)	0 (0.0)	3 (1.0)	
Others	1 (0.7)	2 (1.3)	3 (1.0)	
Main source of income				
Salary/Job	85 (56.7)	111 (74.0)	196 (65.3)	
Parents	59 (39.3)	20 (13.3)	79 (26.3)	
Charities	3 (2.0)	17 (11.3)	20 (6.7)	<0.001⸸*
Friends	2 (1.3)	1 (0.7)	3 (1.0)	
Others	1 (0.7)	1 (0.7)	2 (0.7)	

⸸ Fisher's exact test *Statistically significant

One hundred and thirty-eight (46%) respondents abused substances with 49(33%) among IDPs and 89 (59%) among host communities.

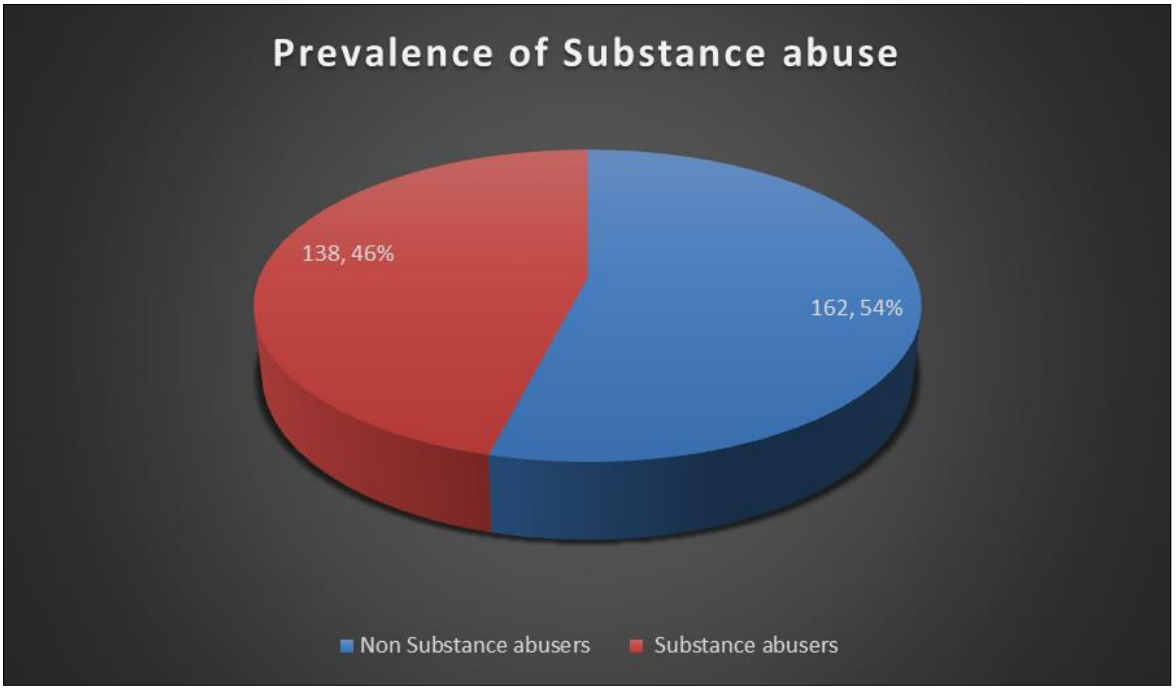

Figure 1 Prevalence of Substance Abuse among youths in IDP and Host community

Substances that were commonly reported as ever used were tobacco (24.0%), opioids (19.3%) cannabis (17.0%) and alcohol (Table 2). Five per cent or less of respondents reported ever using other substances, including alcohol (5.0%), cocaine (2.0%) and sedatives (2.0%), Compared with respondents in IDP camps, those in host communities had a significantly higher prevalence of reporting ever using opioids (26.7% vs. 12.0% p<0.001), alcohol and (8.7% vs. 1.3% p<0.001), cocaine (4.0% vs. 0.0% p<0.010).

Table 2 Ever abuse of substances by Respondents

Substances	IDP n (%)	Host n (%)	Total n(%)	Test Statistics
Tobacco				
Yes	34 (22.7)	38 (25.3)	72 (24.0)	0.590
No	116 (77.3)	112 (74.7)	228 (76.0)	
Alcohol				
Yes	2 (1.3)	13 (8.7)	15 (5.0)	<0.001ǂ*
No	148 (98.7)	137 (91.3)	285 (95.0)	
Cannabis				
Yes	20 (13.3)	31 (20.7)	51 (17.0)	0.090
No	130 (86.7)	119 (79.3)	249 (83.0)	
Cocaine				
Yes	0 (0.0)	6 (4.0)	6 (2.0)	0.010ǂ*
No	150 (100)	144 (96.0)	294 (98.0)	
Sedatives				
Yes	3 (2.0)	3 (2.0)	6 (2.0)	1.000ǂ
No	147 (98.0)	147 (98.0)	294 (98.0)	
Opioids				
Yes	18 (12.0)	40 (26.7)	58 (19.3)	<0.001*
No	132 (88.0)	110 (73.3)	242 (80.7)	

ǂ Fisher's exact test *Statistically significant

Within the last three months for all respondents, the most frequently used substances taken daily or almost daily were tobacco (47.8%), cannabis (15.9%) and opioids (10.1%) (Table 3). This sequence is similar, considering respondents in the host (tobacco:37%; cannabis:11.2%; opioids:10.1%) and IDP (tobacco:67.3%; cannabis:24.5%; opioids:10.2%) groups. Also, there was significantly more frequent abuse of tobacco and cannabis among respondents in IDP compared with host groups ($p<0.05$). There was no significant difference in the frequency of abuse of other substances ($p>0.05$). The daily or almost daily use of tobacco (63% vs 37%, $p=0.010$) and cannabis (25% vs 11%, $p=0.030$) was significantly higher among IDPs than people in the host communities. However, there were no significant differences in the frequency of use of alcohol ($p=0.150$), cocaine ($p=0.460$), sedatives ($p=0.110$) and opioids ($p=0.120$).

Table 3 Frequency of Substance abuse in the last three months by Substance abusers (n=138)

Substance	IDP n (%)	Host n (%)	Total n (%)	Test Statistics
Tobacco				
Never	15(30.6)	51(57.3)	66 (47.8)	
Once/Twice	1(2.0)	1 (1.1)	2 (1.4)	
Weekly	1(2.0)	2 (2.2)	3 (2.2)	0.010ǂ*
Daily/Almost daily	32 (65.4)	35 (39.4)	67(48.6)	
Total	49 (100)	89 (100)	138(100)	
Alcohol				
Never	47(95.9)	76(85.4)	123(89.1)	

Once/Twice	2 (4.1)	2 (2.2)	4(3.0)	
Monthly	0(0.0)	2(2.2)	2 (1.4)	0.150⸸
Weekly	0(0.0)	7 (8.0)	7 (5.1)	
Daily/Almost daily	0(0.0)	2(2.2)	2 (1.4)	
Total	49(100)	89 (100)	138 (100)	
Cannabis (C)				
Never	29(59.2)	58(65.2)	87 (63.0)	
Once/Twice	1(2.0)	3(3.4)	4 (2.9)	
Monthly	3(6.1)	7(7.8)	10 (7.2)	0.030⸸*
Weekly	4(8.2)	11(12.4)	15 11.0)	
Daily/Almost daily	12(24.5)	10(11.2)	22 (15.9)	
Total	49(100)	89(100)	138 (100)	
Cocaine (D)				
Never	49 (100)	83(93.3)	132 (95.7)	
Once/Twice0	0(0.0)	5(5.6)	5 (3.6)	
Monthly	0 (0.0)	1 (1.1)	1 (0.7)	0.46⸸
Total	49 (100)	89 (100)	138 (100)	
Sedatives (G)				
Never	46 (93.9)	86 (96.7)	132 (95.7)	
Monthly	2 (4.1)	2 (2.2)	4 (2.9)	
Weekly	1 (2.0)	0 (0.0)	1 (0.7)	0.11⸸
Daily/Almost daily	0 (0.0)	1 (1.1)	1 (0.7)	
Total	49 (100)	89 (100)	138 (100)	
Opioids (I)				
Never	31 (63.3)	49 (55.1)	80 (58.0)	
Once/Twice	3 (6.1)	2 (2.2)	5 (3.6)	
Monthly	6(12.2)	9(10.1)	15 (10.9)	0.12⸸
Weekly	4 (8.2)	20 (22.5)	24(17.4)	
Daily/Almost daily	5 (10.2)	9 (10.1)	14 (10.1)	
Total	49 (100)	89 (100)	138 (100)	

⸸ Fisher's exact test *Statistically significant

Table 4 shows the pattern of substance abuse among substance abusers. The mean age at onset of substance abuse was 17.9 ± 3.6 years p = 0.090, with significantly earlier onset among IDP compared with host groups (16.7 ± 4.0 years vs 18.7 ± 3.2 years p<0.001). Also, the mean duration of substance abuse was 5.39 ± 3.3 years, but with a significantly longer duration of abuse among IDP compared with host groups (6.3 ± 3.6 years vs 4.9 ± 3.0 years p=0.020). In both groups, the most common social means of taking substances was with friends (57.1% vs 56.2%) who were also the most common introducers of substances to respondents in both study groups (71.4% vs 59.6%).

Table 4 Pattern of Substance abuse among Substance abusers (n=138)

Variable	IDP n (%)	Host n (%)	Total n (%)	Test Statistics
Age at substance abuse (years.)				
≤10	3 (6.1)	1(1.1)	4 (2.9)	
11-20	41 (83.7)	70 (78.7)	111 (80.4)	0.090⸸
>20	5 (10.2)	18 (20.2)	23 (16.7)	
Total	49 (100)	89 (100)	138 (100)	
Mean ± SD	16.7 ± 4.0	18.7 ± 3.2	17.9 ± 3.6	0.001*
Duration of substance abuse (years.)				
≤5	23 (46.9)	58 (65.2)	81 (58.7)	
6-10	20 (40.8)	27 (30.3)	47 (34.1)	
>10	6 (12.)	4(4.5)	10 (7.2)	0.070⸸
Total	49 (100)	89 (100)	138 (100)	
Mean ± SD	6.3 ± 3.6	4.9 ± 3.0	5.39 ± 3.3	0.020⸸*
Means of taking substance				
Individually	10 (20.4)	25 (28.1)	35 (25.4)	
With friends	28 (57.1)	50 (56.2)	78 (56.5)	0.222⸸
In group	11 (22.4)	11 (12.4)	22 (15.9)	
Others	0 (0.0)	3 (3.4)	3 (2.2)	
Total	49 (100)	89 (100)	138 (100)	
Substance introducer				
Friends	53 (59.6)	35 (71.4)	88 (63.8)	
Curiosity	13 (14.6)	7 (14.3)	20 (14.5)	
Relative	15 (16.9)	4 (8.2)	19 (13.8)	0.45⸸
Father	1 (1.1)	0 (0.0)	1 (0.7)	
Brother	4 (4.5)	0 (0.0)	4 (2.9)	
Drug pusher	1 (1.1)	1 (2.0)	2 (1.4)	
Others	2 (2.2)	2 (4.1)	4 (2.9)	
Total	89 (100)	49 (100)	138 (100)	

⸸ Fisher's exact test *Statistically significant

Table 5 shows that most subjects had low levels of recognition (94.9%), ambivalence (62.0%) and taking steps (72.3%). Compared with respondents in the host group, those in the IDP group had a significantly higher proportion of high degree for taking steps (20.4% vs. 4.5%, p<0.001), the mean score was significantly higher among respondents in IDP compared with host group for recognition (21.14 vs. 18.35, p=0.040) ambivalence (12.7 vs. 11.2 p=0.040) and taking steps (22.9 vs. 18.1 p= 0.010).

Table 5 Degree of Willingness to Stop Substance Abuse using SOCRATES Scores (n=138)

Substance	IDP n (%)	Host n (%)	Total n (%)	Test Statistics
Recognition				
Low (7-30)	46 (93.8)	84 (94.4)	130 (94.2)	
Medium (31-33)	1 (2.0)	1 (1.1)	2 (1.4)	
High (≥34)	2 (4.2)	4 (4.5)	6 (4.4)	0.420ǂ
Total	49 (100)	89 (100)	138 (100)	
Mean ± SD	21.14 ± 7.2	18.35 ± 7.5	19.35 ± 7.5	0.040*
Ambivalence				
Low (4-13)	25 (51.1)	61 (68.5)	86 (62.3)	
Medium (14-15)	7 (14.3)	12 (13.5)	19 (13.7)	
High (16-20)	17 (34.6)	16 (18.0)	33 (24.0)	0.070
Total	49 (100)	89 (100)	138 (100)	
Mean ± SD	12.7 ± 4.0	11.19 ± 4.2	11.74 ± 4.1	0.040*
Taking steps				
Low (8-30)	29 (59.2)	71(79.8)	100 (72.5)	
Medium (31-33)	10 (20.4)	14(15.7)	24 (17.4)	
High (≥34)	10 (20.4)	4(4.5)	14 (10.1)	0.001ǂ*
Total	49 (100)	89 (100)	138 (100)	
Mean ± SD	22.90 ± 10.8	18.07 ± 9.5	19.80 ± 10.2	0.010*

ǂ Fisher's exact test *Statistically significant

Table 6 shows the binary logistic regression analysis was done to assess factors associated with substance abuse. Every unit increase in age by 1 year, yielded 11% and 20% increase in the likelihood of substance abuse among respondents in host (OR=1.11) and IDP (OR=1.20) groups, respectively (p = 0.001). Compared with females, males had at least three- and five-fold increased likelihood of substance abuse among respondents in host and IDP groups, respectively (p<0.001). Compared with respondents from *Kanuri* tribe, those from *Babur-bura* and other tribes, had 3.02 and 2.40 increased likelihood of substance abuse (p<0.05).

Table 6 Binary logistic regression of association of factors with Substance Abuse (n=300)

Variable	Host Community			IDP camp		
	OR	95% CI	P-value	OR	95% CI	P-value
Age	1.11	0.97-1.94	0.001	1.20	0.87-2.04	<0.001
Gender						
Females*	0.32	0.16-0.64	<0.001	0.05	0.02-0.17	<0.001
Males	3.09	1.57-6.08	<0.001	19.70	5.79-68.12	<0.001
Duration in comm./camp	0.95	0.90-0.99	0.04	1.02	0.85-1.23	0.80
Tribe						
Kanuri*						
Babur-bura	1.12	0.42-3.00	0.82	3.02	1.35-6.76	0.01

Margi	0.93	0.29-2.95	0.90	0.99	0.01-1.32	0.99
Shuwa-Arab	0.49	0.10-2.33	0.37	0.39	0.37-4.13	0.44
Hausa/Fulani	1.30	0.32-5.27	0.71	3.53	0.34-37.1	0.29
Others	0.48	0.15-1.58	0.23	11.77	2.40-57.7	<0.001
Religion						
Christianity	0.30	0.11-0.78	0.01	0.24	0.02-2.66	0.24
Islam*	3.39	1.29-8.88	0.01	4.26	0.38-9.11	0.24
Highest Education						
None*						
Quaranic	6.25	0.53-73.6	0.15	5.00	0.54-46.7	0.16
Primary	3.91	1.32-11.6	0.01	3.00	0.38-23.9	0.30
Secondary	3.13	0.57-17.0	0.19	2.29	0.30-17.7	0.43
Tertiary	3.47	1.61-7.47	<0.001	0.47	0.05-4.03	0.49
Marital status						
Married	0.66	0.31-1.41	0.28	5.10	2.35-11.06	<0.001
Unmarried*	1.52	0.71-3.27	0.28	0.20	0.09-0.43	<0.001
Age at marriage	1.07	0.98-1.18	0.14	0.94	0.86-1.04	0.24
Income source						
Salary	3.79	1.91-7.54	<0.001	0.36	0.15-0.89	0.03
Non-salary*	0.26	0.13-0.52	<0.001	2.94	1.71-5.02	0.03
Live with parents						
Yes	0.64	0.32-1.26	0.20	0.14	0.07-0.30	<0.001
No*	1.57	0.79-3.13	0.20	7.17	3.36-15.33	<0.001

*=reference category

4. Discussion

Forced displacements due to violent conflicts have continued to plague Nigeria for decades now, since the Boko Haram insurgency in 2009.(9) Hence, the need for evidence-based prevention and control of attendant consequences, including psychosocial trauma-induced substance abuse, which cannot be overemphasized. Yet, this is one of few studies assessing patterns and associated factors of substance abuse, with the comparison between youths in IDPs camps and those in their host communities in a war-torn North East Nigeria setting.(10,11).

There were significant similarities and differences in the socio-demographic characteristics comparing the study groups, that are worthy of note. Except for gender, marital status, and type of marriage, the proportions of other socio-demographic characteristics were significantly different when compared to the groups. Respondents in the IDP group were younger, less educated and commonly artisans, while those in host communities were mostly students. These findings suggest a potentially disadvantaged and more vulnerable state of displaced persons compared with non-displaced persons. Younger age also implies an early age of exposure to the traumatic experience of being forcefully displaced from their ancestral homes. They may, therefore, have to live with potentially post-traumatic disorders and other untoward effects, for a larger portion of their lives. The maturity required to better handle conflict situations may be lacking among younger individuals.(26,27) Young persons may also be at higher risk of ill effects of peer pressure, including substance abuse, unhealthy sexual practices and initiation into violent and non-violent crimes.[3,94] These vulnerabilities among the younger IDPs may be made worse by the additional presence of a lower level of education. Less educated IDPs may lack the cognitive capacity for more rational reasoning of the consequences and solutions to

the initiation and continuation of harmful practices, including substance abuse.(27) A lower level of education also implies less likelihood of gainful employment, potentially leading to further poverty and more vulnerability.

Considering the ethnic and religious peculiarities of Northern Nigeria, it is not unexpected to have Kanuri and Islam as the predominant tribes and religions, respectively, for both study groups. Therefore, among all tribes in the region, the Kanuris may have the highest burden of displacement and perhaps death due to armed conflicts. This phenomenon of forced displacement may have long-term consequence of loss of cultural values and identity, as we as a workforce and productivity, especially for future generations of the Kanuri people.This finding suggests overcrowding of IDP camps, perhaps with housing characteristics well below WHO recommended standards.(28) Besides the increased risk of overcrowding-related infectious diseases such as tuberculosis, lack of privacy in IDP camps may hinder family cohesion required for instilling value systems in younger generations. This disadvantage, couples with increased risk of exposure to peer pressure, may contribute to the initiation of young IDPs into unhealthy practices, including substance abuse and unprotected sexual intercourse.

The overall prevalence of substance abuse among young people in the study area was 46.0%, comprising 59.3% and 32.7% for host and IDP communities, respectively. In both host and IDP study groups, the key subgroups with the highest prevalence rates were males (71.6% and 51.1%, respectively), older respondents within 25-29 years (65.5% and 67.4%, respectively) and Muslims (80% and 66.7%, respectively). A systematic review of studies on the global pattern of substance use found a lower prevalence ranging from 17-36% in IDP camps to 4-7% in host community settings. (12)

Differences in prevalence may be due to the focus on alcohol's key psychoactive substance abuse. Also, most studies reviewed were conducted in high-income rather than LMICs, perhaps due to poor methodologies employed in most studies conducted in developing countries. Hence, the prevalence rates obtained may have been different and perhaps comparable, if review focus was on LMICs, with wider coverage including non-alcoholic substances of abuse, such as tobacco and cannabis.

Also, a multicenter study among 847 IDPs in Benue, Plateau and Nasarawa states, North Central Nigeria, found a lower 25.4% prevalence of substance abuse.(29) This finding may suggest geopolitical differences in burden and effects of forced displacement within Northern Nigeria, with North East where the index study was situated and main domain of Boko Haram insurgency, being worse hit compared with North Central region. Also, IDP camps in the relatively more secure North Central region, may have more presence of NGOs which may provide better aid assistance and contribute to containing drivers of substance abuse.(30) Therefore, in this index study, a higher prevalence of substance abuse reported among youths in IDP camps and host communities, may indicate or be a reflection of a potentially increasing trend of substance abuse in North-Eastern Nigeria, especially when compared with reports from previous studies in the region. It may suggest persistence cumulative effects of diverse drivers of substance abuse, perhaps due to consistent interruptions in intervention efforts by government and non-governmental organizations. (30) Also, one of such drivers is the increasing trend of youth unemployment, which is an established risk factor for substance abuse. Also, one of such drivers is the increasing trend of youth unemployment, which is an established risk factor for substance abuse.(3) Compared with employed youths, idle youths are more likely to suffer ill effects of peer-mediated initiation and sustenance of substance abuse. Considering the lack of mental rehabilitation services in North East Nigeria, where armed conflict has persisted for decades, the high prevalence of substance use found in the current study, suggests a high burden of unmet mental health needs of young people in the region. This scenario may lead to a high burden of psychological disorders and crime-related societal problems, which may eventually overwhelm the relevant systems in the region.

Approximately 1 in every 3 youths in IDP camps was found to abuse at least one substance. Unique characteristics of IDP camps may explain this finding of high prevalence in Nigeria compared with reports of studies in other settings.(12) Besides violent conflicts leading to forced displacement from their ancestral homes, these vulnerable persons continue to face traumatic events while in their camp, perhaps due to a lack of adequate security and other support aids. There are reports of rape, demand for sex in exchange for food and other aids, as well as suicide bomb attacks by insurgents and deplorable living conditions within the camps. (31)

This study found substance users to be significantly younger but with longer duration of use among respondents in IDP compared with host communities. Finding younger substance users among IDPs compared with host communities may not be unexpected, considering their generally younger age irrespective of substance use status. Yet, this finding suggests earlier age at initiation into substance use, and therefore longer duration of period of use among IDPs compared with host communities. Hence, though host communities have a higher prevalence of substance use, IDPs that use substances have a higher burden of use and potentially a higher likelihood of having untoward effects in the

near or remote future. Consequently, substance users in IDP camps may require more regular follow-up and monitoring for early identification and prevention of adverse mental, cardiometabolic and other health effects of substance use. (5,10)

In both study groups, friends were the commonest means of introduction to substance use and source of substances. Previous similar independent studies among IDPs in Northern and Southern Nigeria, also found friends to be the commonest sources of used substances. This finding reflects the potentially strong influence of peer pressure on both the initiation and maintenance of substance abuse among young people. Peers, who abuse substances, consistently provide misinformation concerning rationale, benefits and perhaps inconsequential effects of initiation and sustenance of the behaviour. (15,32) Also, in both study groups, tobacco, cannabis and opioids, were the substances that were ever used, as well as abused within the last three months. Similar previous studies in Maiduguri, Borno State, Nigeria, also reported tobacco and cannabis as commonly used substances. However, amphetamines and other stimulants (which were rarely used in this index study) were also found to be widely abused. (33)

In both study groups, compared with females, males were more likely to use substances. This finding is not unexpected, considering that males may be more likely to have peers who abuse at least one substance. (34,35) Also, this gender association with substance abuse was found to be stronger among IDPs compared with host communities. This finding may be explained by a potentially greater degree of chronic exposure to physical and psychosocial trauma, which may promote substance abuse among IDPs compared with relatively less challenged host communities. (32,36) Another significant predictor of substance abuse unique to IDPs was increasing age. Similar studies in similar and dissimilar developing country settings have also found older age to be associated with substance use and abuse. (5,15)

This study found a generally low level of recognition, ambivalence and taking steps, indicating a lack of willingness to change from substance abuse. This finding may reflect the degree of addiction to abused substances, as well as the lack of public health intervention measures in both IDP and host communities. Also, unlike recognition and ambivalence, a significantly higher proportion of youths in IDPs compared with host communities were found to have a medium or high degree of willingness to take steps towards change from substance use.(23)

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This comparative study has limitations, which are worthy of note. Due to the cross-sectional nature of the study design, a causal relationship cannot be inferred between substance use and the identified predictors. Though interviews were private and confidentiality assured, there is still the possibility of social desirability bias, especially among substance abusers. Hence, there is the possibility of variation from the true prevalence and pattern of use and dependence on the various substances assessed. This position may be more significant considering the possibility of respondents' perception of probable stigma, legal action and other consequences if their use of illegal/contraband substances (such as cocaine) is divulged.

This comparative study has limitations, which are worthy of note. Due to the cross-sectional nature of the study design, a causal relationship cannot be inferred between substance use and the identified predictors. There is a possibility of variation from the true prevalence and pattern of use and dependence on the various substances assessed. Also, despite host communities having a higher prevalence of substance use compared with IDPs, it may be difficult to infer what group may be influencing the other, considering their high degree of communal interactivity. In other words, IDPs may have a high prevalence of substance use due to negative peer-mediated influence by youths in neighbouring host communities. On the other hand, though the prevalence of substance use was higher in host communities, it may reflect an increase or decrease due to negative or positive influence by IDPs, respectively. Trend analysis of the prevalence of substance use in these communities is required to recognize the direction or potential source of increase or decrease in prevalence rates

5. Conclusion

This study found a high prevalence of use of substances among youths in IDP camps and host communities. Most substances used were those that were commonly available and accessible, including tobacco, cannabis and opioids.

Though the prevalence of substance abuse was higher in host communities, the degree of dependence was higher among IDPs. Some of the risk factors for substance abuse are associated with prior and perhaps ongoing psycho traumatic experiences especially faced by IDPs. These include the perception of the need for substance use, towards the attainment of psychological balance required to handle ill effects of past, ongoing and perhaps expected potential life-threatening psycho traumatic events, such as armed conflict and other forms of security breaches. The other risk factors found in both host communities and IDP areas were also found or reported for substance users in the general population. Male gender was a risk factor for both study groups, with a stronger association found for IDPs.

The high prevalence of substance use found in this study warrants urgent evidence-based intervention. Considering that a higher prevalence of substance use among host communities, reflects the high burden of the menace among the general population of youths in the study area and region, there is a need for improvement in the effort towards educating and gainfully engaging the youths to reverse the trend.

Recommendations for future research

Future research should prioritise longitudinal studies to understand the trajectory of substance use over time among young people in both internally displaced persons (IDP) camps and host communities. Such studies would help clarify causal pathways, particularly how prolonged displacement and exposure to trauma contribute to substance dependence. It is also essential to examine the effectiveness of trauma-informed psychosocial interventions in mitigating substance abuse, especially among IDPs who face unique psychological stressors. Further investigation into gender-specific patterns of substance use is warranted, given the stronger association found among males, particularly within the IDP population. Additionally, studies exploring the environmental and structural factors that influence the availability and accessibility of substances commonly abused, such as tobacco, cannabis, and opioids, would provide valuable insights for targeted interventions. Research should also focus on identifying protective factors and sources of resilience among young people who abstain from substance use despite experiencing similar adversities, to inform strength-based approaches to prevention.

Recommendations for policy and practice

There is an urgent need to integrate substance use prevention and treatment services into ongoing humanitarian and public health programmes, particularly in IDP camps and conflict-affected communities. Governments and stakeholders should prioritise the development and expansion of educational, vocational, and recreational programmes that engage youths constructively, thereby reducing vulnerability to substance abuse. Public awareness campaigns addressing the dangers of substance use and promoting available support services should be culturally sensitive and tailored to both IDP and host community contexts. Mental health and psychosocial support services must be scaled up to tackle the underlying trauma that contributes to substance use, with a particular focus on accessible and youth-friendly models of care. Moreover, policies regulating the supply and distribution of addictive substances should be strengthened, especially in areas with high youth populations or near displacement settlements. Finally, given the heightened risk among young males, targeted interventions such as mentorship, peer education, and male-focused outreach should be implemented to address the specific needs and behavioural drivers within this group. Collectively, these actions can help curb the rising tide of substance abuse among vulnerable youth populations and promote healthier, more resilient communities.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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