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Original Research Article

Addressing substance abuse among healthcare professionals in a tertiary healthcare facility in Nigeria: a case study of Nnamdi Azikiwe university teaching hospital

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ABSTRACT

Background: The use of psychoactive substances is prevalent worldwide, including among healthcare workers whose well-being, productivity, and effectiveness in addressing substance addiction in patients and the wider community can be significantly impacted. However, the extent of substance misuse among healthcare professionals in Nigeria, with its substantial social and public health implications, remains poorly understood. This research focused on the prevalence, attitudes, substances used, and influencing factors regarding substance misuse among staff at Nnamdi Azikiwe university teaching hospital (NAUTH) in Nnewi.
Methods: A descriptive cross-sectional study was conducted involving 194 healthcare workers, using a multi-stage sampling method. Data were collected via a semi-structured self-administered questionnaire and analyzed with SPSS version 20. Results were presented in tables, considering p values less than 0.05 as significant.
Results: Of the 197 respondents, 63.5% were female and 36.5% male, spanning various professions including doctors, nurses, and other healthcare specialists. Notably, 66% of participants had used substances in their lifetime. Alcohol was the most commonly abused substance, with significant percentages of moderate and high-risk users. Socialization and peer pressure were identified as the predominant factors influencing substance use, with significant statistical associations found between substance use and variables such as profession, sex, and duration of practice.
Conclusions: The study highlighted a considerable prevalence of alcohol use among healthcare workers, who generally held a moderate view towards substance misuse and identified socialization and peer pressure as key factors. These findings underscore the pressing need for targeted training and intervention strategies for substance addiction among healthcare workers in Nigeria.

Keywords: Substance abuse, Alcohol, Caffeine, Cannabis

INTRODUCTION

Substance abuse involves the detrimental consumption of psychoactive materials that can result in physical, mental, and social harm or distress.[1] This condition falls under the category of substance-related disorders. "Psychoactive" denotes any material that affects the central nervous system.[2] There are ten different drug

classes: alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics, anxiolytics, stimulants (including amphetamine-type substances, cocaine, and other stimulants), tobacco, and other (or unknown) substances.[3] These substances may be legally available, illicit, or available through medical prescription by licensed practitioners.

The motives behind drug abuse are varied and can evolve throughout an individual's life. Reasons include seeking euphoria, replicating initially pleasurable sensations, cultural norms in certain subcultures, self-medicating for issues like anxiety, social phobia, insomnia, symptoms of psychotic disorders, to stave off withdrawal symptoms. The influence of environmental stressors in maintaining drug use is also significant.[4]

Healthcare workers are defined as all remunerated individuals working in settings primarily focused on health improvement. This includes direct health service providers and those involved in health management and support roles.[5] At Nnamdi Azikiwe University Teaching Hospital (NAUTH), this includes a broad spectrum of employees from medical professionals to administrative and support staff.

In the United States, the substance abuse epidemic significantly affects the medical field, with over 100,000 healthcare professionals grappling with addiction or abuse, often involving potent narcotics like oxycodone and fentanyl. Their specialized knowledge and access complicate detection of these issues, presenting substantial risks both to the public and themselves.[6]

Many physicians who misuse prescription drugs do so not for recreational purposes but rather to cope with physical pain, emotional or psychiatric distress, stressful conditions, or to prevent withdrawal symptoms.[7]

The global trend in illicit drug use and its health implications have escalated over recent decades. Despite widespread use worldwide, significant knowledge gaps remain regarding the extent and nature of problematic drug use. Estimates show a varied lifetime prevalence of illicit drug use across different countries.[8-11] Opioid-related disorders are particularly lethal, accounting for the majority of deaths from substance use disorders, despite lower prevalence rates compared to alcohol and tobacco.[12,13]

Substance abuse poses substantial social and public health challenges, particularly in Sub-Saharan Africa, where data are sparse.

The region has seen significant increases in alcohol consumption and uses substances like cannabis, tobacco, khat, cocaine, and heroin. Most global tobacco users reside in low and middle-income countries (LMICs), where the alcohol-attributable disease burden is also highest.[14]

Given the rising health issues from substance use disorders globally, and the impact on healthcare workers' effectiveness and attendance, understanding the prevalence and factors influencing substance use among healthcare personnel in LMICs, particularly Nigeria, is crucial.[15]

Therefore, the objective of this study was to identify substance use rates and factors associated with the substance use among health care workers in the Nnamdi Azikiwe University Teaching Hospital, Nnewi.

METHODS

Study area

This study was conducted at NAUTH, a federal government teaching hospital located in Nnewi town of Nnewi North local government area, Anambra State between September to November 2022.

Study design

The study was a descriptive cross-sectional study of substance abuse among healthcare workers in NAUTH, Nnewi, Anambra State, Nigeria

Study population

The study was carried out on doctors, nurses, medical laboratory scientists, radiographers, physiotherapists, ward assistants in NAUTH, Nnewi.

Inclusion criteria

These included health workers directly involved in direct care of patients.

They included doctors, medical laboratory scientists, radiographers, physiotherapists, nurses, pharmacist and ward assistants in NAUTH, Nnewi who were willing to give informed consent to be part of the research.

Exclusion criteria

The study excluded health care workers who have not worked for up to 6 months in the hospital and those who declined consent.

Sample size determination

The sample size was determined using the following formula:

$N=z^2\times p\times q/d^2$

Where N is the minimum sample size,

Z is the standard normal deviate=1.96 (constant)

P is the prevalence=0.148 (prevalence of health care workers who abused substances, obtained from previous study).[16]

Q is the proportion of persons in the population without factors under study.

Q=1-P. Q= 1-0.148

Q=0.852

d is the degree of precision=5% (0.05)

$N = (1.96^2 \times 0.148 \times 0.852)/0.5^2$

N= 193.77

N ≈ 194

For a population size less than 10,000.

nf =n/(1+n/N)

Where nf is desired sample size when the population is less than 10,000 (finite).

n is the sample size (194) and N is the size of the population of interest/source population (1801)

nf=194/1+(194/1801)

nf=194/1.1077

nf=175.13

nf ≈ 175

Attrition rate=10%

n/(1-f)

=175/ (1-0.1)

=194.44

Hence, the sample size = 194

Sampling technique

The multistage sampling technique was used for this study. It comprised of 2 stages:

Stage 1: Selection of professional groups. In this stage the healthcare workers were stratified into professional groups: doctors, nurses, pharmacists, medical laboratory scientists, physiotherapists, and ward assistants.

Stage 2: Selection of study participants. Proportionate allocation was used to get the required number of study participants from the different professional groups selected in stage 1. Simple random sampling technique was then used to enrol the required number of respondents per proportion.

Proportionate allocation was done using the numerical strength of each of these strata. The formula that was used to calculate the number of respondents per health care worker was.

[Total number of healthcare worker category/total population being considered] × sample size after attrition is corrected.

For doctors: (596/1801) × 194=64.2 (64 doctors), nurses: (565/1801) × 194=60.86 (61 nurses), radiographers: (34/1801) × 194=3.66 (4 radiographers), med lab scientist: (186/1801) × 194=20.03 (20 med lab scientists), pharmacists: (87/1801) × 194=9.37 (9 pharmacists), ward assistants: (317/1801) × 194=34.14 (34 cleaners) and physiotherapists: (16/1801) × 194=1.72 (2 physiotherapists)

Afterwards, a simple random sampling through balloting method was used to determine respondents to enroll into the study. The balloting method was done by folding papers with either 'yes' or 'no' and asking the respondents to pick. Respondents that picked yes were administered with the questionnaire.

Study instrument

Data was collected with the use of pre-tested semi-structured, self-administered questionnaire adopted and adapted from WHO manual and a reviewed literature.[17,18] It was structured according to the specific objectives which were administered using the inclusion criteria and after getting informed consent from them. The questionnaire was made up of 5 parts (section A to E); Section A contained socio-demographic data of the respondents; section B comprised of prevalence of substance abuse and substances commonly abused; section C attitude towards substance abuse among healthcare workers in NAUTH; Section E comprised of factors that influence substance abuse. The scoring system used for determining the prevalence of substance abuse categorizes risk levels based on scores for alcohol and all other substances as follows: For alcohol, a score of 0-10 indicates lower risk, 11-26 indicates moderate risk, and 27-39 indicates high risk. For all other substances, a score of 0-3 indicates lower risk, 4-26 indicates moderate risk, and 27-39 indicates the high risk.[17]

The questions used to assess attitudes towards substance abuse are categorized into five subgroups: permissiveness (Q5, Q15) implies acceptance of substance use as part of normal behavior; treatment intervention (Q8, Q9) gauges perception of substance abuse in a treatment context; treatment optimism (Q2, Q4, Q7, Q10, Q12) measures

expectations of successful treatment outcomes; non-stereotyping (Q6, Q11, Q14) reflects the extent to which individuals avoid relying on stereotypes of substance abusers; and non-moralism (Q1, Q3, Q13) involves avoiding moralistic views of substance abusers. Responses were scored on a scale of 1-3 (1 for strongly disagree/disagree, 2 for undecided, 3 for agree/strongly agree), with a total possible score of 45. Scores from 0-15 indicated a poor attitude, 16-30 a fair attitude, and 31-45 a good attitude.

Data collection

Data was collected in the hospital by the researcher and the research assistants through semi structured questionnaire by the researcher as well as the research assistants.

Data analysis

The data obtained was cleaned, coded, entered, verified, and analyzed using statistical package for social sciences (SPSS) version 25.

Categorical data was analyzed for frequency distribution, proportion, and percentages, while continuous data was analyzed using mean and standard deviation. The Chi-square test was used to determine the association between demographic characteristics and substance abuse in the study population. The value of p that would be considered statistically significant would-be $p \leq 0.05$. The variables were presented using the appropriate tables.

Study duration

Data collection for the study lasted for a period of one month. The questionnaire was administered to every eligible respondent during the one-month period scheduled for the data collection, until the required sample size was attained.

Ethical consideration

Ethical approval was obtained from the ethical committee of the NAUTH, Nnewi through the head of department of Community Medicine. The participants were assured of the confidentiality of their responses and were assured that any information given would be used primarily for academic research purposes. Only subjects who gave their informed consent were administered the questionnaire and they were free to withdraw consent at any point during the study. The consent form was read and explained to participants in English and the local language. An opportunity for questions and answers after this was provided before the signing of the form.

RESULTS

Table 1 showed that 63.5% of the study participants were females while 36.5% were males. The percentage of doctors and nurses were 32.5% and 31.5% respectively, followed by ward assistants 17.3%, medical laboratory scientists 10.2%, pharmacists 4.6%, radiographers 2.5%, physiotherapists 1.5%, 70.6% had not undergone any training in substance abuse management.

Table 2 showed that 66% of the healthcare workers had used a substance at least once in their lifetime, only 34% were lifetime abstainers; alcohol 60.4%, sedatives 12.7%, tobacco 10.2%, cannabis 5.6%, opioids 4.6%, cocaine, amphetamine, and inhalants 1% each, hallucinogens 0.5%. 45.7% had used only one substance while 12.2% had used two substances.

Table 3 showed that Out of the 72 males who took part in the study, 62 (86.1%) has used substance at least once in their lifetime, while 68 (54.4%) out of the 125 females were lifetime users.

The prevalence of substance abuse among the different professions were as follows; nurses (48.4%), radiographers (60%), medical laboratory scientists (70%), doctors (71%), pharmacists (77.9%), ward assistants (82.4%), physiotherapists (100%).

The profession and duration of practice were statistically significant in relation to substance abuse among healthcare workers while age, marital status and training in substance abuse management were not.

Table 4 showed that in the past 3 months, 50.8% of the participants had used alcohol, 5% sedatives, 4.1% tobacco, 1.5% cannabis, 1% opioids, 0.5% amphetamine.

Table 5 showed that 13.2%, 6.1%, 3.0% had the desire to use alcohol monthly, weekly, and daily respectively, in the past 3 months.

Table 6 reports the frequency of health, social, legal, or financial problems experienced by respondents due to their substance use. The substances are divided by their type, and the reported problems are categorized by frequency: never, once or twice, monthly, weekly, daily or almost daily. For example, problems due to alcoholic beverage use were reported as never by 39.1% of users, once or twice by 24 users, monthly by 12.2%, and daily by 0.5% of users.

Table 7 focuses on the concerns expressed by friends or relatives about the participants' use of substances and whether the participants have ever tried to cut down on their usage. The responses are divided into three categories: no, never; yes, in the past three months; and yes, but not in the past three months. For example, one hundred and six respondents indicated that no one had ever expressed concern about their alcoholic beverage use, while three reported concerns in the past three months, and eight noted concerns but not within the past three months.

Table 8 showed the percentage of moderate risk users among the participants had alcohol (37.1%) as the highest, followed by sedatives (5.6%), tobacco and cannabis 1.5% each; amphetamine and the opioids 1% each. The percentage of the high-risk users of alcohol was 1%.

Table 9 presents participants' attitudes towards substance abuse through a series of statements with responses ranging from strongly disagree to strongly agree. The statements cover various aspects of attitudes towards substance use, including permissiveness, treatment intervention, stereotypes, treatment optimism, and non-moralism. For example, for the statement "lifelong abstinence is a necessary goal in the treatment of alcoholism," 42.6% strongly agreed, reflecting a significant endorsement of abstinence.

Table 10 shows the overall attitude levels of participants towards substance abuse and the factors influencing substance abuse. Attitudes are categorized as good, fair, or poor. Factors influencing use include stressful and excessive workload, easy access to drugs, socialization/peer pressure, emotional distress, sleep disorders, and others. For example, 78.7% of participants had a fair attitude towards substance abuse, and the most cited factor influencing substance abuse was socialization/peer pressure (46.7%).

Table 1: Sociodemographic characteristics of the studied population.

Variables	N	Percentage (%)
Age (in years)		
<30	63	32.0
30-39	81	41.1
40-49	31	15.7
50-59	21	10.7
≥60	1	0.5
Sex		
Male	72	36.5
Female	125	63.5
Profession		
Doctor	62	31.5
Nurse	64	32.5
Med lab scientist	20	10.2
Pharmacist	9	4.6
Physiotherapist	3	1.5
Radiographer	5	2.5
Ward assistant	34	17.3
Duration of practice (in years)		
<5	69	35.0
5-9	50	25.4
10-14	43	21.8
15-19	23	11.7
20-24	5	2.5
25-29	3	1.5
≥30	4	2.0
Marital status		
Single	85	43.2
Married	109	55.3
Widowed	3	1.5
Divorced	0	0
Undergone any training in substance abuse management		
Yes	58	29.4
No	139	70.6

Table 2: Prevalence of substance abuse.

Variables	N	Percentage (%)
Ever used a substance		
Yes	130	66.0
No	67	34.0

Continued.

Variables	N	Percentage (%)
Substance used		
Tobacco products	20	10.2
Alcoholic beverages	119	60.4
Cannabis	11	5.6
Cocaine	2	1.0
Amphetamine-type stimulants	2	1.0
Inhalants	2	1.0
Sedatives or sleeping pills	25	12.7
Hallucinogens	1	0.5
Opioids	9	4.6
Number of substances used		
1	90	45.7
2	24	12.2
3	11	5.6
4	5	2.5
None	67	34.0

Table 3: Association of substance use with various demographic parameters.

Variables	Use substance, N (%)		X^2	P value
	No	Yes		
Age (in years)				
<30	19 (30.2)	44 (69.8)	9.159	0.057
30-39	27 (33.3)	54 (66.7)		
40-49	8 (25.8)	23 (74.2)		
50-59	13 (61.9)	8 (38.1)		
≥60	0	1 (100)		
Sex				
Male	10 (13.9)	62 (86.1)	20.470	0.000
Female	57 (45.6)	68 (54.4)		
Profession				
Doctor	18 (29.0)	44 (71.0)	15.853	0.015
Nurse	33 (51.6)	31 (48.4)		
Med lab scientist	6 (30.0)	14 (70.0)		
Pharmacist	2 (22.2)	7 (77.9)		
Physiotherapist	0	3 (100)		
Radiographer	2 (40.0)	3 (60.0)		
Ward assistant	6 (17.6)	28 (82.4)		
Duration of practice (in years)				
<5	24 (34.8)	45 (65.2)	13.068	0.042
5-9	14 (28.0)	36 (72.0)		
10-14	13 (30.2)	30 (69.8)		
15-19	9 (39.1)	14 (60.9)		
20-24	5 (100)	0		
25-29	0	3 (100)		
≥30	2 (50.0)	2 (50.0)		
Marital status				
Single	23 (27.1)	62 (72.9)	4.249	0.120
Married	42 (38.5)	67 (61.5)		
Widowed	2 (66.7)	1 (33.3)		
Divorced	0	0		
Undergone any training in substance abuse management				
Yes	19 (32.)	39 (67.2)	0.057	0.811
No	48 (34.5)	91 (65.5)		

Table 4: Frequency of use of substance in the past 3 months.

Substance used	Never, N (%)	Once or twice, N (%)	Monthly, N (%)	Weekly, N (%)	Daily or almost daily, N (%)
Tobacco products	12 (6.1)	8 (4.1)	0	0	0
Alcoholic beverages	21 (10.7)	52 (26.4)	34 (17.3)	13 (6.6)	1 (0.5)
Cannabis	9 (4.6)	3 (1.5)	0	0	0
Cocaine	2 (1.0)	0	0	0	0
Amphetamine-type stimulants	1 (0.5)	1 (0.5)	0	0	0
Inhalants	2 (1.0)	0	0	0	0
Sedatives or sleeping pills	16 (8.1)	6 (3.0)	4 (2.0	0	0
Hallucinogens	1 (0.5)	0	0	0	0
Opioids	5 (2.5)	2 (1.0)	0	0	0

Table 5: Desire to use substance in the past 3 months.

Substance used	Never, N (%)	Once or twice, N (%)	Monthly, N (%)	Weekly, N (%)	Daily or almost daily, N (%)
Tobacco products	9 (4.6)	7 (3.6)	4 (2.0)	0	0
Alcoholic beverages	58 (29.4)	0	26 (13.2)	12 (6.1)	6 (3.0)
Cannabis	6 (3.0)	0	0	0	0
Cocaine	2 (1.0)	0	0	0	0
Amphetamine-type stimulants	0	0	2 (1.0)	0	0
Inhalants	2 (1.0)	0	0	0	0
Sedatives or sleeping pills	22 (11.2)	0	0	1 (0.5)	0
Hallucinogens	1 (0.5)	0	0	0	0
Opioids	4 (2.0)	0	2 (1.0)	0	0

Table 6: How often the substance used led to health, social, legal or financial problems in the past 3 months.

Substance used	Never, N (%)	Once or twice, N (%)	Monthly, N (%)	Weekly, N (%)	Daily or almost daily, N (%)
Tobacco products	12 (6.1)	7 (3.6)	1 (0.5)	0	0
Alcoholic beverages	77 (39.1)	0	24 (12.2)	0	1 (0.5)
Cannabis	5 (2.5)	0	1 (0.5)	1 (0.5)	0
Cocaine	2 (1.0)	0	0	0	0
Amphetamine-type stimulants	0	0	0	2 (1.0)	0
Inhalants	2 (1.0)	0	0	0	0
Sedatives or sleeping pills	21 (10.7)	0	2 (1.0)	2 (1.0)	
Hallucinogens	1 (0.5)	0	0	0	0
Opioids	6 (3.0)	0	0	0	0

Table 7: Concern and effort regarding the use of substance.

Substance used	No, never, N (%)	Yes, in the past 3 months, N (%)	Yes, but not in the past 3 months, N (%)
Friend or relative has ever expressed concern about use of substance			
Tobacco products	17 (8.6)	1 (0.5)	2 (1.0)
Alcoholic beverages	106 (53.8)	3 (1.5)	8 (4.1)
Cannabis	9 (4.6)	2 (1.0)	0
Cocaine	2 (1.0)	0	0
Amphetamine-type stimulants	1 (0.5)	0	0
Inhalants	2 (1.0)	0	0
Sedatives or sleeping pills	23 (11.7)	2 (1.0)	0
Hallucinogens	1 (0.5)	0	0
Opioids	6 (3.0)	0	0

Continued.

Substance used	No, never, N (%)	Yes, in the past 3 months, N (%)	Yes, but not in the past 3 months, N (%)
Ever tried to cut down on using any of the substance			
Tobacco products	16 (8.1)	4 (2.0)	0
Alcoholic beverages	98 (49.7)	16 (8.1)	5 (2.5)
Cannabis	2 (1.0)	0	0
Cocaine	4 (2.0)	0	0
Amphetamine-type stimulants	0	1 (0.5)	0
Inhalants	2 (1.0)	0	0
Sedatives or sleeping pills	18 (9.1)	5 (2.5)	2 (1.0)
Hallucinogens	1 (0.5)	0	0
Opioids	4 (2.0)	0	0

Table 8: Level of risk of various substances used.

Substance used	Level of risk, N (%)		
	No/low	Moderate	High
Tobacco products	194 (98.5)	3 (1.5)	0
Alcoholic beverages	122 (61.9)	73 (37.1)	2 (1)
Cannabis	194 (98.5)	3 (1.5)	0
Cocaine	197 (100.0)	0	0
Amphetamine-type stimulants	195 (99.0)	2 (1.0)	0
Inhalants	197 (100)	0	0
Sedatives or sleeping pills	186 (94.4)	11 (5.6)	0
Hallucinogens	197 (100)	0	0
Opioids	195 (99.0)	2 (1.0)	0

Table 9: Level of agreement to statements regarding attitude towards substance abuse.

Statements	Strongly disagree, N (%)	Disagree, N (%)	Undecided, N (%)	Agree, N (%)	Strongly agree, N (%)
Permissiveness					
Daily use of one marijuana cigarette is not necessarily harmful	90 (45.7)	71 (36.0)	12 (6.1)	20 (10.2)	4 (2.0)
Lifelong abstinence is a necessary goal in the treatment of alcoholism	6 (3.0)	21 (10.7)	8 (4.1)	78 (39.6)	84 (42.6)
Treatment intervention					
Long-term outpatient treatment is necessary for the treatment of drug addition	19 (9.6)	25 (12,7)	18 (9.1)	85 (43.1)	49 (24.9)
Paraprofessional counselors can provide effective treatment for drug and alcohol abusers	3 (1.5)	8 (4.1)	28 (14.2)	124 (62.9)	34 (17.3)
Non-stereotypes					
A physician who has been addicted to narcotics should not be allowed to practice medicine again	30 (15.2)	62 (31.5)	32 (16.2)	42 (21.3)	31 (15.7)
A hospital is the best place to treat an alcoholic or drug addict	10 (5.1)	42 (21.3)	42 (21.3)	79 (40.10	24 (12.2)
A nurse who is drug dependent should not be allowed to give medications to patients	13 (6.6)	35 (17.8)	27 (13.7)	78 (39.6)	44 (22.3)
Treatment optimism					
An alcohol and drug dependent person cannot be helped until he/she has hit rock bottom	61 (31.0)	83 (42.1)	16 (8.1)	32 (16.2)	5 (2.5)
Physicians who diagnose alcoholism early improve the chance of treatment success	14 (7.1)	8 (4.1)	10 (5.1)	92 (46.7)	73 (37.1)
An alcohol or drug addicted person who has relapsed several times probably cannot be treated	45 (22.8)	93 (47.2)	15 (7.6)	34 (17.3)	10 (5.1)
Drug addiction is a treatable illness	8 (4.1)	7 (3.6)	15 (7.6)	87 (44.2)	80 (40.6)
Most alcohol and drug dependent persons are unpleasant to work with patients	14 (7.1)	30 (15.2)	33 (16.8)	94 (47.7)	26 (13.2)

Continued.

Statements	Strongly disagree, N (%)	Disagree, N (%)	Undecided, N (%)	Agree, N (%)	Strongly agree, N (%)
Non-moralism					
Alcohol is associated with a weak will	33 (16.8)	50 (25.4)	21 (10.7)	78 (39.6)	15 (7.6)
Alcohol and drug abusers should only be treated by specialists in that field	16 (8.1)	52 (26.4)	25 (12.7)	67 (34.0)	37 (18.8)
Coercive pressure, such as threat or punishment, is useful in getting resistant patients to accept treatment	35 (17.8)	64 (32.5)	28 (14.2)	51 (25.9)	19 (9.6)

Table 10: Level of attitude and factors influencing substance abuse.

Variables	N	Percentage (%)
Level of attitude towards substance abuse		
Good	5	2.5
Fair	155	78.7
Poor	37	18.8
Factors influencing substance abuse		
Stressful and excessive workload	63	32.0
Easy access to drugs	53	26.9
Socialization/peer pressure	92	46.7
Emotional distress	63	32.0
Sleep disorders	54	27.4
Others	14	7.1

DISCUSSION

This study fills an important literature gap regarding the prevalence of substance use among healthcare workers in Nigeria. This study is particularly important since most studies of healthcare workers' alcohol, tobacco, and other substance use have been conducted in a few high-income countries.

The results of the study showed that the lifetime use of tobacco among healthcare workers in NAUTH is 10.2%. This was in agreement with the prevalence in a study done among the general population in the South-Eastern region of Nigeria where the hospital is located. However, the prevalence among the general population in the country was higher. This could be due to some sociocultural reasons since the South-East region has the lowest prevalence of lifetime tobacco use in the country when compared to other regions. The prevalence of recent tobacco users were also found to be 3 times higher in the general population.[19]

The prevalence of lifetime users of alcohol was slightly higher among healthcare workers when compared to the general population. However, the percentage of recent users was significantly higher among the study population than the general population.[20] This could be attributed to the significant level of stress and workload that healthcare workers are subjected to. The sedatives lifetime and recent use rates were found to be higher among the study population than the general population.[21] This could possibly be because of sleep disorders that healthcare workers experience especially after night work shifts that alter their sleep cycle. Also, they have easy access to these drugs.

There were more lifetime abstainers among the females than males. This might be explained by the lower peer pressure to use substances among females. Nurses had the lowest prevalence of substance use among all the healthcare workers and this is due to the predominance of females in the profession. The prevalence among physiotherapists was very high because of the small number (3) that were included in the study.

The result of this study is significantly different from a similar study done in Kenya across 15 health facilities. The lifetime and past three months' alcohol and sedative use was higher among healthcare workers in NAUTH. The higher sedative use rate in this study could be due to lesser restrictions and regulations of prescription drugs in Nigeria. However, the use of other substances like tobacco, cannabis, amphetamine-like substances, cocaine, hallucinogens, and inhalants was higher among healthcare workers in Kenyan hospitals.[15] This could be due to the wider coverage of hospitals in the Kenyan study.

The percentage of moderate users of alcohol was almost twice higher in this study when compared to another study done in Ado-Ekiti teaching hospital. Meanwhile the hazardous/harmful alcohol users in the Ado-Ekiti study were almost 6 times higher when compared to percentage of high-risk users in this study. This could however be

explained by the fact that different assessment tools were used, the study in Ado-Ekiti made use of alcohol use disorders identification test (AUDIT-10).[22]

The level of attitude towards substance abuse was predominantly fair in the study population while a significant percentage had a poor level of attitude. Only a minority had a good level of attitude towards substance abuse. The significant level of poor attitude could be because only 29.4% had undergone training in substance abuse after graduation. In addition, the undergraduate education curriculum in Nigeria does not sufficiently include lectures in substance abuse for medical and health sciences students.

The study participants tended towards the non-permissive spectrum. Majority of the participants disagreed that daily use of marijuana cigarettes is not necessarily harmful. The importance of lifelong abstinence was not fully appreciated by a percentage of the participants which was like the study done by Kalebka et al in South Africa.[18] According to Scott et al longer periods of abstinence from drugs were associated with a reduced risk of mortality.[23]

The responses from the participants under the non-stereotype and non-moralism category were homogenous. Almost half of the study participants disagreed that a physician who has been addicted to narcotics should not be allowed to practice medicine again. Also, half of the participants agreed that coercive pressure is useful in getting resistant patients to accept treatment.

The participants had more positive views towards treatment optimism and treatment intervention category. A greater majority agreed that drug addiction is a treatable illness. However, the study done by Kalebka et al showed higher scores under this category, and could be explained by the fact that his study involved only physicians.[18] Physicians are the most directly involved in the management of substance abuse patients and receive more training in substance abuse management than other healthcare professionals.

The most used substance amongst the respondents in this study was alcohol. As reported, alcohol is the most abused drug among healthcare workers, and various factors account for this.[16] For instance, it is very commonly available in most communities and there are various types, brands and prices ranging from the very low to the very expensive, thereby, accommodating more abusers. In addition, it is quite socially accepted among the Igbos, who constituted the predominant ethnic group among the respondents to this study. It features very prominently in most cultural/social events amongst this ethnic group. Therefore, society provides a very convenient place for people to experiment with and abuse alcohol, in a pathological extension of the social use of alcohol. This could have contributed to the high use of alcohol among healthcare professionals in this study. The implication of this is that a healthcare professional with alcohol-related problems may go unattended for a long time before being brought to medical attention.[16]

Sedatives were the second most abused among the moderate risk users. This could be because of sleep disorders experienced by healthcare workers caused by night shift work.[24] Many studies have demonstrated a strong association between night shift work and sleep disorders. These disorders are related to the alteration of circadian rhythms and have been identified as a potential cause of certain addictive behaviors and psychological distress.[25,26] They are most likely self-medicate with sedatives to try and manage the consequences of sleep disorders and stress. In addition, they have easy access to these drugs.

It is surprising that tobacco did not feature as one of the commonly used substances despite being relatively cheap and commonly used by the general population. The likely explanations include that, unlike the other very available substances of abuse, there has been an extensive campaign against smoking by the federal ministry of health. Other plausible explanations could include the fact that these substances are usually smoked and thus, their use could not be easily hidden. Given that most healthcare workers are held in high esteem in their communities, they would not want to compromise their dignity and respect by being identified as drug addicts.[16]

Socialization / peer pressure was the most common reason for abusing substances. This does not agree with most studies done among healthcare workers and this could be because the study participants had a higher proportion of younger healthcare workers.[27-34] Excessive workload ranked second alongside emotional distress. It is known that the healthcare professionals' job is usually hectic and tasking especially in resource poor countries where there are scarcity of infrastructure and manpower like Nigeria. Healthcare professionals, therefore, could be using the drugs of abuse to cope with the stress of work. The stress of work, therefore, likely interacts with other factors to bring about this behavior.[24]

Limitations

The limitations encountered during the study were: Some of the health workers were reluctant to participate in the study, some respondents did not return the questionnaire administered to them, some questionnaires were incompletely filled in and some of the questionnaires were misplaced

CONCLUSION

The healthcare workers who participated in this study had a significant level of substance abuse, especially alcohol. They had a fair attitude towards substance abuse and socialization/peer pressure was the most important factor influencing substance use. However, despite the potential

for social desirability bias, some participants reported the use of substances identified as stigmatized. These findings indicate the need for a more rigorous assessment of substance use, abuse, and dependence in healthcare workers in the state, country and other poor resource countries, since there are few existing studies, and because healthcare workers' personal substance use affects their provision of substance-use related care. Furthermore, it cannot be assumed that they understand the consequences of their own consumption, as there is limited substance use training available. These findings indicate the need for training for healthcare workers and intervention for those who abuse substances, a need rarely addressed in Nigeria.

Recommendations

A more rigorous assessment of substance use, abuse, and dependence in healthcare workers in the state and country by the ministry of health. Adequate training for healthcare workers in NAUTH on substance abuse and its implications. Proper intervention measures should be put in place for healthcare workers who abuse substances.

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