Original Research Article

Prevalence, Correlates and Effects of Substance Abuse among Pharmacy Students in a Nigerian University

Uchenna Chukwuemeka Victory[1], Ibeneme Georgian Chiaka[4,8], Ogbonna Brian Onyebuchi[1,2,4,6*] (iD), Ogbonna Chigozie Ann[4], Umeh Ifeoma Blessing[1], Nwaodu Mercy Adamma[2,6], Chigozie Victor Uchenna[4,9], Adenola, Amanda Ugochi[1], Okpalanma Nneoma Ngozi[2,3], Mba Joseph Obinna[4,5], Okeke Anthony Ifeanyi[3], Anetoh Maureen Ugonwa[1], Udeh Simon Chijioke[4,6], David Obasi Chukwu[7]

[1]Department of Clinical Pharmacy and Pharmacy Management, Faculty of Pharmaceutical Sciences, Nnamdi Azikiwe University, Awka, Nigeria
[2]Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmaceutical Sciences, David Umahi Federal University of Health Sciences, Uburu, Ebonyi State, Nigeria
[3]Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmaceutical Sciences, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Nigeria
[4]International Institute for Health Policy, Systems and Knowledge Translation, David Umahi Federal University of Health Sciences, Uburu Nigeria
[5]Department of Pharmacology and Toxicology, David Umahi Federal University of Health Sciences, Nigeria
[6]International Institute for Pharmaceutical Research and Innovations (IIPRI), David Umahi Federal University of Health Sciences, Uburu, Ebonyi State, Nigeria
[7]Department of Medical Biochemistry, David Umahi Federal University of Health Sciences, Uburu, Ebonyi State, Nigeria
[8]Faculty of Nursing Sciences, David Umahi Federal University of Health Sciences, Uburu, Ebonyi State, Nigeria
[9]Department of Pharmaceutical Microbiology and Biotechnology Faculty of Pharmaceutical Sciences, David Umahi Federal University of Health Sciences, Uburu, Ebonyi State, Nigeria

Abstract: ***Background***: The World Health Organization (WHO) classifies substance abuse as one of the frequent activities that constitute "negative risk-taking," particularly among teenagers and young adults. ***Objective:*** We assessed the prevalence, correlates and effects of substance abuse among pharmacy students in a Nigerian university. ***Methods:*** This study was a questionnaire-based prospective cross-sectional study. Descriptive statistics of frequency, mean, and standard deviation were used to summarize the data, The relationship between categorical variables was determined using the Pearson Chi square (X2) test, with a P-mmvalue of <0.05 considered statistically significant. ***Results:*** Overall, 161 questionnaires were distributed for the study and retrieved. Overall, 147 (98%) of the participants were aged 20-25 years, 2 (1.3%) of the participants were aged 25-30 while 1 (0.7%) was above 35 years. Out of the 150 participants, 75 (50%) were males and 75 (50%) were females. Most of the participants 98 (65.3%) were in 400 level while the rest 52 (34.7%). About 136 (90.7%) of participants disagreed to having family history of alcohol use while 14 (9.3%) agreed to that. Most of the participants 124 (82.7%) were actively involved in religion. The p-value for the use a substance before passively was p= 0.000 and actively p= 0.000. ***Conclusion:*** The prevalence of substance abuse among the respondents was high. M The lifestyle of people in their immediate environment significantly affect the therapeutic outcome of patients directly or indirectly. Alcohol was the most abused substance. Stress relief, peer pressure, curiosity and recreation have been identified as the major reasons why the students abuse drugs. It is expected that health providers maintain high level of health standard both physically and psychologically in order to be fit enough to administer treatment to the public. For this reason, proper attention must be given to health providers in their formative years in college to reduce to the barest minimum this plague of substance abuse.
Keywords: substance abuse, undergraduates, Nigeria, public health, addiction.

*Corresponding Author: Ogbonna Brian Onyebuchi
Department of Clinical Pharmacy and Pharmacy Management, Faculty of Pharmaceutical Sciences, Nnamdi Azikiwe University, Awka, Nigeria

INTRODUCTION

The World Health Organization (WHO) classifies substance abuse as one of the frequent activities that constitute "negative risk-taking," particularly among teenagers and young adults who are more susceptible to engaging in risky behaviors with unfavorable long-term health effects [1]. During the formative pre-professional years, which encompass the pivotal college years or even the transitional period leading up to college, individuals often find themselves at a critical juncture where substance use habits and/or disorders can take root. Shedding light on this phenomenon, an illuminating study revealed that a substantial 88% of pharmacy professionals who courageously admitted to partaking in lifelong non prescription drug use attributed their college years as the genesis of their experimental foray into drugs. The pervasive and enduring concern surrounding the widespread prevalence of drug use among college students necessitates heightened awareness, targeted interventions, and comprehensive strategies to proactively address this pressing issue and safeguard the well-being of the student population [1].

Healthcare providers have reasonable influence on the lifestyles of their patients or clients. If healthcare workers engage in drug use or compromise the quality of their services due to substance abuse, it not only puts patients at risk but also jeopardizes public safety. Maintaining a healthy lifestyle and addressing substance abuse issues are important for ensuring patient safety and upholding public trust in the healthcare profession [2]. Presently, a diverse array of substances, including alcohol, opiates, cocaine, and cannabis, is commonly employed by a wide range of individuals, including healthcare professionals. It is imperative to conduct an assessment of drug usage among healthcare students, recognizing the significance of understanding the prevalence of substance use within the healthcare student population. Therefore, this study aims to investigate and determine the extent of substance use among students pursuing careers in healthcare. By undertaking this research, valuable insights can be obtained regarding the frequency and types of substances being utilized by this specific group, enabling a comprehensive evaluation of the prevailing drug usage trends in this educational setting and provide valuable insights to the field of substance abuse prevention among healthcare students and foster a healthier and safer educational environment. The widespread occurrence, interrelated factors, and detrimental consequences associated with substance abuse present a substantial obstacle to societal progress. To effectively combat this pressing public health concern and develop successful prevention and intervention strategies tailored for medical students, it is imperative to comprehensively comprehend the root causes of substance addiction and its multifaceted impacts. Therefore, it becomes paramount to undertake further research in order to gain a deeper understanding of this issue and establish evidence-based solutions. Expanding our knowledge base through rigorous investigation will help to unveil the complex dynamics that contribute to substance abuse, identify high-risk factors, and determine effective approaches for addressing this urgent challenge. It will help in generating practical and targeted interventions, fostering a healthier learning environment within medical education, and ultimately safeguarding the well-being and future prospects of aspiring students in health – related fields and society as a whole [3-6]. We assessed the prevalence, correlates and effects of substance abuse among pharmacy and medical students in the two universities.

METHODS

Study Setting

This study was conducted in Anambra State, Nigeria, specifically among pharmacy students of Chukwuemeka Odumegwu Ojukwu University (COOU), Igbariam Campus. COOU is a government-owned tertiary institution in southeastern Nigeria with a fully accredited Faculty of Pharmaceutical Sciences.

Study Design

The study was a questionnaire-based prospective cross-sectional study. The study design was deemed appropriate for assessing the prevalence, associated factors, and consequences of substance abuse among the target population.

Study Population

The study population consisted of undergraduate pharmacy students in their 400 and 500 levels of study at Chukwuemeka Odumegwu Ojukwu University. These levels were selected because students in these classes are typically more advanced in their academic journey and likely to have higher exposure to psychosocial and academic stressors that may influence substance use.

Eligibility Criteria

The inclusion criteria for the study include all pharmacy students in the 400 and 500 level, who gave their informed consent to participate in the study and who

were present during the period of data collection. The exclusion criteria are all pharmacy students in the 400 and 500 levels who were not willing to participate in the study and those who were willing to participate but absent at the time of data collection.

Sampling Method

A simple random sampling technique was utilized to ensure that each eligible student had an equal chance of selection. This method helps to minimize selection bias and ensure the generalizability of the findings to the target population.

Sample Size Determination

The sample size was determined using Yamane's formula for sample size estimation assuming a margin of error of 0.05 and an attrition rate of 5%. A total of 161 participants was estimated as the representative sample. Thus, a final sample size of 161 students were obtained. The study was conducted over six months, from March 2023 to August 2023. This duration allowed for thorough planning, data collection, and preliminary analysis.

Research Tool

Data were collected using a well-structured, self-administered questionnaire. The instrument was adapted and modified from previously validated questionnaires [3], incorporating both open- and close-ended questions that were used to assess the prevalence, correlates, and effects of substance abuse among pharmacy students. The questionnaire was divided into two major sections, sections 1 and 2. Section 1 was used to collect the sociodemographic information, including age, gender, academic level, and other relevant background data while the section 2 was used to assess the prevalence of and impact of participants' use of psychoactive substances, assessed participants' knowledge of drug and substance misuse, know the participants' reasons for engaging in substance misuse, understand the distribution of commonly abused drugs among them, the variables related to substance abuse among the participants, investigated the correlates of substance abuse among the participants, looked into the demographic correlates of lifetime substance use, look into the prevalence of recent substance use among the participants, and access the influences on participants'. The questionnaire was pilot-tested using five pharmacy students who met the inclusion criteria but were excluded from the main study. The feedbacks were used to refine the wording, structure, and clarity of the questions. Necessary corrections and adjustments were implemented to enhance reliability and validity. Internal consistency of the questionnaire was assessed using Cronbach's alpha, yielding a value of 0.72, indicating acceptable reliability.

Statistical Analysis

Data were entered into the Microsoft Excel spreadsheet, checked for correctness, and cleaned before exporting to IBM SPSS version 27. Descriptive statistics, including frequencies, means, and standard deviations, were used to summarize the participants' responses. To examine associations between categorical variables, the Pearson Chi-square (χ^2) test was employed. A p-value of less than 0.05 was considered statistically significant for all inferential tests.

Ethical considerations

Ethical approval was obtained from the Chukwuemeka Odumegu Ojukwu University Teaching Hospital Research and Ethics Committee. Participants were not asked for any form of identification such as name, address, and phone number to maintain uttermost confidentiality.

RESULTS

A total number of 161 questionnaires were shared for the study and retrieved. Most of the participants 147 (98%) were aged 20-25 years, 2 (1.3%) of the participants were aged 25-30 while 1 (0.7%) was above 35 years. mmmmm Most of the participants 98 (65.3%) were in 400 level while the rest 52 (34.7%) were in 500 level. About 136 (90.7%) of participants disagreed to having family history of alcohol use. Most of the participants 124 (82.7%) were actively involved in religion while 26 (17.3%) were not, as shown in Table 1.

Table 1: Sociodemographic Features of the respondents

Variable	Variable/ Category	Frequency (n)	Percent (%)
Age	20-25	147	98.0
	25-30	2	1.3
	>35	1	0.7
Sex	male	75	50.0
	female	75	50.0

Level	400	98	65.3
	500	52	34.7
family history of alcohol problem	yes	14	9.3
	no	136	90.7
family history of drug abuse problem	yes	10	6.7
	no	140	93.3
active participation in religion	yes	124	82.7
	no	26	17.3

Table 2: Estimation of the prevalence and effect of psychoactive substance use on the participants

Variable	Variable Category	Frequency (n)	Percent (%)
If you have used a substance before, please specify which substances you have used	alcohol	79	52.7
	tobacco	10	6.7
	marijuana	7	4.7
	cocaine	7	4.7
	heroin	4	2.7
	prescription drugs	36	24.0
	Indian hemp	7	4.7
How often do you use substances?	daily	13	8.7
	weekly	6	4.0
	monthly	27	18.0
	rarely	84	56.0
	never	19	12.7
Have you ever experienced negative consequences as a result of substance use?	poor academic performance	53	35.3
	relationship problems	19	12.7
	legal issues	5	3.3
	financial difficulties	13	8.7
	health problems	48	32.0
Have you ever engaged in risky behavior while under the influence of substances?	driving while intoxicated	14	9.3
	unprotected sex	20	13.3
	violence	16	10.7
	others	92	61.3
Have you ever experienced withdrawal symptoms when you tried to quit using substances?	yes	31	20.7
	no	104	69.3
	not sure	15	10.0
Five or more drink at one time in one occasion during lifetime	yes	45	30.0
	no	105	70.0
Cigarette smoking during lifetime	yes	15	10.0
	no	131	87.3
	not sure	1	0.7

Table 3: Evaluation of participants' awareness on drug and substance abuse

Variable	Variable Category	Frequency	Percent
Do you feel that substance abuse is a common problem among pharmacy students?	yes	115	76.7
	no	17	11.3
	not sure	18	12.0
Have you ever sought help for substance abuse?	counseling	47	31.3
	support group	17	11.3
	rehabilitation	6	4.0
	none	73	48.7
Have you ever lied or hidden your substance use from others?	yes	43	28.7
	no	97	64.7
	not sure	10	6.7
Do you feel that health schools should provide more education and resources related to substance abuse for students?	yes	136	90.7
	no	4	2.7
	not sure	10	6.7
Received any course about drug use in the college	yes	131	87.3
	no	10	6.7
	not sure	9	6.0

Table 4: Knowledge of the participant reason for involvement in substance abuse

Variable	Variable Category	Frequency (n)	Percent (%)
What is your primary reason for using substances?	stress relief	34	22.7
	peer pressure	28	18.7
	curiosity	29	19.3
	recreation	29	19.3
	others	26	17.3

Table 5: Investigation of the prevalence of substance use during lifetime

Variable	Variable category	Frequency (n)	Percent (%)
How old were you when you first used substances?	10-15	61	40.7
	15-20	45	30.0
	20-25	40	26.7
Five or more drink at one time in one occasion during lifetime	yes	45	30.0
	no	105	70.0
Cigarette smoking during lifetime	yes	15	10.0
	no	131	87.3

Table 6: Assessment of the factors affecting participants' lifestyle in the use of drugs

Teenagers' curiosity	not important	6	4.0
	slightly important	4	2.7
	undecided/neutral	12	8.0
	important	81	54.0
	very important	47	31.3
Joy-seeking	not important	7	4.7
	slightly important	7	4.7
	undecided/neutral	23	15.3
	important	68	45.3
	very important	45	30.0
Somatic diseases	not important	10	6.7
	slightly important	19	12.7
	undecided/neutral	78	52.0
	important	26	17.3
	very important	17	11.3
Mental disorder	not important	29	19.3
	slightly important	14	9.3
	undecided/neutral	14	9.3
	important	65	43.3
	very important	28	18.7
Lack of knonnnnnnwledge about complications	not important	18	12.0
	slightly important	4	2.7
	undecided/neutral	11	7.3
	important	43	28.7
	very important	74	49.3
Positive attitude (drug abuse)	not important	36	24.0
	slightly important	23	15.3
	undecided/neutral	34	22.7
	important	30	20.0
	very important	27	18.0
Low self-confidence	not important	3	2.0
	slightly important	22	14.7
	undecided/neutral	19	12.7
	important	48	32.0
	very important	55	36.7
To eliminate shyness	not important	6	4.0
	slightly important	11	7.3
	undecided/neutral	47	31.3

		important	47	31.3
		very important	39	26.0
Parents' divorce		not important	16	10.7
		slightly important	24	16.0
		undecided/neutral	27	18.0
		important	50	33.3
		very important	33	22.0
Lack of amusement facilities		not important	44	29.3
		slightly important	4	2.7
		undecided/neutral	51	34.0
		important	22	14.7
		very important	29	19.3
Disability in resolving routine problems		not important	35	23.3
		slightly important	26	17.3
		undecided/neutral	29	19.3
		important	27	18.0
		very important	33	22.0
Having strict parents		not important	35	23.3
		slightly important	20	13.3
		undecided/neutral	39	26.0
		important	27	18.0
		very important	29	19.3
Presence of an addicted person in the family?		not important	16	10.7
		slightly important	21	14.0
		undecided/neutral	29	19.3
		important	50	33.3
		very important	34	22.7
Friends offer		not important	28	18.7
		slightly important	19	12.7
		undecided/neutral	22	14.7
		important	31	20.7
		very important	50	33.3
Family disputes		not important	35	23.3
		slightly important	8	5.3
		undecided/neutral	28	18.7
		important	28	18.7
		very important	51	34.0
Access to drugs		not important	20	13.3
		slightly important	8	5.3
		undecided/neutral	26	17.3
		important	35	23.3
		very important	57	38.0
Lack of access to physician consultation		not important	31	20.7
		slightly important	6	4.0
		undecided/neutral	29	19.3
		important	35	23.3
		very important	49	32.7
Low cost of drugs		not important	36	24.0
		slightly important	15	10.0
		undecided/neutral	31	20.7
		important	35	23.3
		very important	33	22.0
Having free time		not important	52	34.7
		slightly important	18	12.0
		undecided/neutral	29	19.3
		important	23	15.3
		very important	28	18.7
Presence of an addicted person in a residential/educational place		not important	24	16.0

	slightly important	26	17.3
	undecided/neutral	28	18.7
	important	23	15.3
	very important	49	32.7

Table 7: Substance use with active participation

Variables		Active participation		Total	P-value
		yes	no		
If you have used a substance before, please specify which substances you have used	alcohol	62	17	79	0.000
	tobacco	10	0	10	
	marijuana	7	0	7	
	cocaine	7	0	7	
	heroin	4	0	4	
	prescription drugs	34	2	36	
	Indian hemp	0	7	7	
Total		**124**	**26**	**150**	

Table 8: Relationship between substance use and students gender

Variable		sex		Total	P-value
		male	female		
If you have used any of these substance before, please specify which substances you have used	alcohol	42	37	79	0.000
	tobacco	10	0	10	
	marijuana	1	6	7	
	cocaine	7	0	7	
	heroin	4	0	4	
	prescription drugs	4	32	36	
	Indian hemp	7	0	7	
Total		**75**	**75**	**150**	

Table 9: Substance use by the students levels of study

Variable		level		Total	P-value
		400	500		
Have you used a substance before, please specify which substances you have used	alcohol	41	38	79	0.000
	tobacco	10	0	10	
	marijuana	2	5	7	
	cocaine	7	0	7	
	heroin	4	0	4	
	prescription drugs	27	9	36	
	Indian hemp	7	0	7	
Total		**98**	**52**	**150**	

Table 10: Substance use and academic workload

		How often do you experience stress related to your academic workload?			Total	P-value
		very often	often	rarely		
If you have used any of these substances before, please specify which one you used	alcohol	53	23	2	78	0.000
	tobacco	5	5	0	10	
	marijuana	7	0	0	7	
	cocaine	0	7	0	7	
	heroin	0	4	0	4	
	prescription drugs	14	17	5	36	
	Indian hemp	0	7	0	7	
Total		**79**	**63**	**7**	**149**	

DISCUSSION

This study assessed the prevalence, effect and correlates of substance abuse among Pharmacy students. One hundred and sixty one students were selected to take part in this study. Majority were 400 level students within the ages of 20-25 years in line with the findings of Adeyemo et al., among university students in Benin which reported an average age for abusers as 20-25. Alcohol was the most abused substance [7]. This is similar to another study which revealed that coffee and alcohol were the most commonly abused drugs [8], but in contrast to Nonyelum's study in which marijuana was the most commonly substance among university students in selected faculties [4]. Next to this was prescription drugs comprising of opioids, nicotine and amphetamine, followed closed by tobacco, marijuana, cocaine, and heroin. This result is similar to that of Panthee et al., where 42.8% of people reported using drugs or alcohol at some point in their lifetime, including both legal and illegal prescription drug use. 8.7% of our study population used drugs daily, which is indicative of addiction [9]. Thirty percent of the population showed binge drinking (Five or more bottles on one occasion) and this is similar to a study by Al-Shatnawi [10].

Most of the participants in this study were religious, similar to Adeyome's study which saw most participants being religious with Christianity topping the chart at (97%). However, this study revealed that religious participants were heavier users of alcohol than non-religious participants, with a statistically significant level of p-value <0.01. Majority of the population agreed to have poor academic performance, health problems, relationship problems and financial difficulties due to the use or abuse of substances. This was in line with a study conducted by Al-Shatnawi et al., in colleges of pharmacy in the United States which showed that student pharmacists missed class or work, attended class or work while intoxicated, received lower grades or evaluation, dealt with legal and financial problems, faced marital and relationship problems [10]. Close to half of the population (40%) agreed to first time use of drugs at the age of 10-15 years. This is in contrast to Nonyelum's work where about 29% started using drugs between the ages of 16-18 years [4].

There were significant associations between gender and use of substances like alcohol, prescription drugs, cocaine, heroin and marijuana. This is similar to findings by Donald who reported significant association between gender and the use of cannabis, cocaine, other opioids, nicotine and some sleeping pills [3]. Similarly,

there was a significant association between drug use and academic level as students in 400 level used alcohol and prescription drugs more than those in 500 level. Donald's findings also showed significant association between academic level and drug use [3]. The effects of drug abuse include unprotected sex, violence, driving while intoxicated, poor academic performance, relationship and health problems. This is also similar to other studies which showed unprotected sex, loss of money, fight, poor academic performance and accident as the major effects of substance use among the students [4,11-13].

CONCLUSION

The lifestyle of healthcare providers "significantly affected" the respondents use of psychoactive substances and outcomes of patients. Alcohol was the most abused substance that affected the therapeutic outcome of patients. It is expected that health providers maintain high level of health standard both physically and psychologically in order to be fit enough to administer treatment to the public. For this reason, proper attention must be given to health providers in their formative years in college to reduce to the barest minimum this plague of substance abuse. The study revealed that most student "pharmacist" admitted to using psychoactive substances. Teenagers curiosity and joy-seeking were among the leading factors affecting participants' lifestyle in the use of drugs. Stress relief, peer pressure, curiosity and recreation have been identified as the major reasons why the students abuse drugs. Stress relief was the main reason for using substances. Both gender used alcohol predominantly. Poor academic performance, relationship problems, legal issues, financial difficulties, and health problems were also identified as some of the major negative effects of substance abuse among the respondents. Alcohol and prescription drugs cause most of the stress witnessed among the respondents.

What is already known on this topic: Substance abuse is on the increase among high school and graduate students in the tropics. However, the main causes remain grey.

What this study adds: Participants noted that the attitude and life style of people in their immediate environment impacted and influenced their behaviours. Alcohol was the most abused substance. Stress relief, peer pressure, curiosity and recreation have been identified as the major reasons why the students abused drugs.

How this study might affect research, practice or policy: Design of interventions towards the key findings of this study will lead to the development of policy formulations to wards stemming the tide.

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