



Gender Factor in the Prevalence of Substance Abuse Among Undergraduate Students in Tertiary Institutions in Delta State of Nigeria

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ABSTRACT

The study explored gender factor in the prevalence of substance abuse among undergraduate students in tertiary institutions in Delta State of Nigeria. The purpose was to determine the prevalence of substance abuse among male and female students, fresh, and stale students, on-campus and off-campus, and the behavioral expression. The research adopted a descriptive survey design. The study was guided, by five research questions and three null hypotheses. Data was collected using the Substances Abuse Questionnaire (SAQ). The supervisor validated these instruments for face, content, and construct validity. A reliability value of 0.89 was established using Cronbach's Alpha and was adjudged adequate for use. The study employed a descriptive statistical analysis to answer the research question. Chi-square was computed and used to test hypotheses at a significance level of 0.05. The findings from this study among others, revealed that alcohol is the most prevalent substance abuse among tertiary institution students in Delta State of Nigeria, followed closely by marijuana and energy drinks. Findings also showed that the most behavioural expression of substance abuse among abusers is gangsterism. It was also found that there is a significant difference in the prevalence of substance abuse among male and female tertiary institution students. The study revealed that there is a significant difference in the prevalence of substance abuse among fresh and stale tertiary institution students. Based on the findings, it was recommended among others that given that substance use and abuse are more common among male students, there is a need to design and implement prevention programs that specifically address the unique risk factors and challenges faced by male students. Again, compared to fresh students, given the higher likelihood of substance use among stale students. Institutions should implement early intervention programs targeting this group. These programs could include counselling services, mentorship, and awareness campaigns to address the factors contributing to substance abuse among continuing students.

Keywords prevalence, substance, abuse, tertiary institutions.

Background to the study

The escalating prevalence of substance abuse presents an increasingly pressing concern for the mental and physical well-being of young individuals, spanning from teenagers to older youths, at an alarming rate. This issue has emerged as a significant public health challenge in various regions worldwide, including Nigeria, and has become one of the most alarming health-related issues of our time. Substance use has indeed emerged as a significant global public health concern. According to the United Nations Office on Drugs and Crime (UNODC) (2016), approximately 5.6% of the global population aged 15-64 years, roughly 275 million individuals, reported using substances at least once. This marks a notable increase of 32.2% from the previous year. Substance use is also prevalent in Nigeria, with findings from the Federal Ministry of Education in 1995 indicating that 11% of students had experimented with cigarettes, while 5% had used cannabis. Additionally, Yusuf (2010) reported that in 2009, 84 students from tertiary institutions in Osun State were apprehended by the National Drug Law Enforcement Agency (NDLEA) for illicit substance use.

The excessive consumption of potentially addictive substances such as alcohol and marijuana can have detrimental effects on both physical and mental health. Therefore, it is imperative to address this issue through preventive measures and support for those affected. Alcohol and cigarettes are frequently considered gateway drugs, as their use often precedes the consumption of other illicit substances such as marijuana and cocaine, as noted by Adeyemo et al. (2016). Alcohol is associated with negative health and social consequences due to its intoxicating, toxic, and addictive properties. Its consumption leads to adverse outcomes, potentially resulting in premature death or disability, thus causing the loss of many productive years of life, as highlighted by Awosusi & Adegboyega (2013).

Duru et al. (2017) suggest that the prevalence of smoking is increasing in Nigeria, particularly among students, who find tobacco appealing due to its affordability and accessibility. Social factors such as beliefs about smoking, exposure to smokers, and tobacco advertisements further contribute to the habit. Understanding the health risks associated with substance use is crucial for behavior modification, yet many students lack awareness of these risks, leaving them susceptible to substance abuse. Conversely, informed individuals can make healthier choices and resist peer pressure to engage in drug use.

Substance abuse among youth, particularly tertiary students, is on the rise globally, driven by factors such as academic stress, peer influence, inadequate supervision, mental health issues, and easier access to substances. This trend adversely affects students' health and academic performance, leading to physical and mental illnesses, diminished well-being, and potential addiction. Substance use at school is widespread, with most teenagers knowing someone who uses drugs during school hours, further impacting academic outcomes and increasing risky behaviors such as unsafe sex and reckless driving (Durowade et al., 2021).

Awoyinka (2012) observes a significant increase in illicit substance trafficking and use worldwide, with marijuana being the most widely abused substance. The World Health Organization estimated that approximately 205 million people globally used illicit substances in 2004. Young people, including school children and college students, are particularly prone to experimenting with drugs. Recent years have seen a surge in substance use among college students, with marijuana being a commonly used drug, as highlighted by Chikere & Mayowa (2011). The prevalence of substance abuse varies between genders, with men generally more likely to use illicit drugs and alcohol and experience related emergency visits or overdose deaths. However, women are equally susceptible to developing substance use disorders, with differences in how they use and respond to drugs due to hormonal and physiological factors (Substance Abuse and Mental Health Services Administration, 2018).

The motivations driving substance use vary between genders, as indicated by Tuchman (2014). Men are more inclined to utilize substances for social and recreational purposes, whereas women may resort to them as a means of dealing with emotional distress or stress. However, it's important to stress that while these gender-based trends are statistically observable, individual experiences differ widely, and exceptions to these patterns exist. Substance use is a multifaceted behavior influenced by a myriad of factors, including biological, psychological, and environmental elements. Recognizing these gender differences is crucial for tailoring prevention and intervention strategies that address the unique needs and challenges of different gender groups. Moreover, the evolving landscape of gender norms and cultural shifts can impact these patterns over time, highlighting the dynamic nature of the relationship between gender and substance abuse.

Green (2006) further suggests that gender can indeed shape the specific types of substances individuals are more likely to abuse. These differences in substance preferences stem from a combination of biological, psychological, and sociocultural factors. Men are more predisposed to heavy alcohol consumption and higher rates of alcohol use disorder (AUD), as masculinity and alcohol use are often deeply ingrained in many cultures and associated with male bonding activities.

Additionally, Stevens et al. (2009) propose that gender-specific substance preferences are intricately influenced by a complex interplay of biological, psychological, and societal factors. Biological variances, such as metabolic differences and the effects of substances, contribute to these patterns. Psychological factors, including coping mechanisms and reasons for substance use, vary across genders. It's essential to acknowledge that these trends represent statistical tendencies and may not universally apply. Substance use is a multifaceted behavior with motivations and coping strategies that can significantly vary among individuals. Understanding these gender-specific preferences is crucial for tailoring prevention, intervention, and treatment programs to meet the distinct needs of different gender groups, while also addressing gender-specific risk factors and societal influences comprehensively in efforts to combat substance abuse.

The prevalence of substance abuse among both fresh and stale students is influenced by a complex interplay of individual, social, and environmental factors. Substance abuse is notably prevalent among tertiary institution students, regardless of their status as new or stale, and is shaped by intricate individual, social, and environmental dynamics. It's essential to comprehend the unique challenges and experiences encountered by students at different stages of their academic journey, as this impacts their substance use behavior. Fresh students commonly engage in forming new social connections as part of their tertiary experience, exposing them to individuals from diverse backgrounds, cultures, and experiences, thereby shaping their attitudes and behaviors. Moreover, the academic demands in tertiary education are often more rigorous than those in high school, requiring students to adapt to a more demanding and self-reliant learning environment.

In contrast, stale students maintain social networks established in earlier years, with peer influence continuing to exert a significant influence on their behaviors, including substance use. Students often belong to specific social groups with shared norms, contributing to the perpetuation of substance use behaviors. As students progress through their academic journey, the cumulative impact of their college experience, including exposure to various social situations, may contribute to the development and persistence of substance use patterns (Hunt & Eisenberg, 2010).

Chen and Jacobson (2012) investigated the correlation between students residing in on-campus hostels and those living off-campus concerning their attitudes towards substance use. While specific studies may differ, existing literature generally outlines this association. Residents of on-campus hostels often experience a regulated environment with university-imposed rules, policies, and oversight. Proximity to academic facilities, campus security, and structured schedules can influence their stance on substance use.

Conversely, students living off-campus typically enjoy more independence and autonomy. They may inhabit a diverse and less regulated environment where neighborhood influences, access to substances, and personal responsibilities hold greater sway. Laska et al. (2009) assert that students in university hostels benefit from easy access to academic resources, counseling services, and extracurricular activities. The proximity to these resources can positively influence their engagement and provide alternatives to substance use. Off-campus students may need to exert deliberate effort to access university resources, potentially affecting their level of engagement and coping mechanisms.

Residents of hostels may form tightly-knit social communities, where peer influences can either discourage or encourage substance use based on prevailing norms within the hostel environment. Conversely, students living off-campus may have more diverse social circles, exposing them to various peer influences that can impact their stance on substance use (Borsari & Carey, 2005). University policies and stringent enforcement measures within on-

campus hostels may deter substance use. The apprehension of facing disciplinary actions may contribute to a more cautious approach among on-campus residents. In contrast, off-campus students may not face the same level of enforcement, possibly fostering a more permissive attitude towards substance use.

Arria (2015) suggests that on-campus settings are typically more regulated, with established routines and limited exposure to external influences. This structured setting may lead to a more monitored and regulated approach to substance use. Living off-campus exposes students to a wider array of environmental factors, including neighborhood influences, which can influence variations in their stance on substance use. Hostel residents may find it easier to balance academic obligations and personal growth within the campus environment, with proximity to academic facilities positively impacting their dedication to studies. Conversely, off-campus students may encounter additional challenges in managing academic and personal responsibilities, potentially affecting their approach to substance use as a coping mechanism.

According to McCabe et al. (2014), the relationship between on-campus hostel residence and off-campus living concerning substance use and abuse is intricate and multifaceted. It is influenced by various factors, including university policies, peer influences, environmental contexts, and individual responsibilities.

Statement of Problem

The escalating prevalence of substance abuse poses a global dilemma, carrying significant implications for individuals and society. Substance abuse is linked to a broad spectrum of health complications, encompassing organ deterioration, cardiovascular and respiratory disorders, and heightened susceptibility to infectious diseases. Often intertwined with mental health ailments like depression, anxiety, and psychosis, substance abuse exacerbates preexisting conditions and impairs cognitive function, thereby placing considerable strain on healthcare systems and escalating healthcare expenses. Moreover, substance abuse disrupts familial dynamics, fostering strained relationships and neglect of responsibilities, while communities grappling with high substance abuse rates commonly experience increased crime rates and social instability. Individuals contending with substance abuse frequently encounter social stigma, impeding their ability to seek assistance and reintegrate into societal frameworks. Additionally, substance abuse can detrimentally impact academic productivity through heightened absenteeism and impaired performance.

The economic repercussions on healthcare systems encompass not only the direct costs associated with treating substance-related health complications but also indirect expenses linked to increased emergency room visits, rehabilitation, and counseling services. Substance abuse often correlates with criminal behaviors, leading to heightened law enforcement and judicial expenditures. Nonetheless, there remains a lack of clarity regarding the most abused substances, the motivations driving students' involvement in substance abuse, and how such behavior intersects with factors such as gender. This study aims to bridge these gaps by examining the prevalence of substance abuse among undergraduate students in tertiary institutions in Delta State, Nigeria.

Research Questions

The following research questions guided the study:

1. What is the most used substance among Undergraduate Students in tertiary institutions in Delta State of Nigeria?
2. What is the prevalence of substance abuse among male and female Undergraduate Students in tertiary institutions in Delta State of Nigeria?
3. What is the prevalence of substance abuse among fresh and stale Undergraduate Students in tertiary institutions in Delta State of Nigeria?
4. What is the prevalence of substance abuse among on-campus and off-campus Undergraduate Students in tertiary institutions in Delta State of Nigeria?
5. What is the most common behavioural expression of substance abusers among Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Purpose of Study

The purpose of this study is to explore the prevalence of substance abuse among students of tertiary institutions in Delta Central Senatorial District. The specific objectives are:

1. To examine the most used substance abuse among Undergraduate Students in tertiary institutions in Delta State of Nigeria.
2. To examine the prevalence of substance abuse in gender among Undergraduate Students in tertiary institutions in Delta State of Nigeria.
3. To investigate the prevalence of substance abuse among fresh and stale Undergraduate Students in tertiary institutions in Delta State of Nigeria.
4. To investigate the prevalence of substance abuse among on-campus and off-campus Undergraduate Students in tertiary institutions in Delta State of Nigeria.

5. To investigate the most common behavioural expression of substance abusers among Undergraduate Students in tertiary institutions in Delta State of Nigeria.

Hypotheses

The following null hypotheses were tested in the study:

1. There is no significant difference in the prevalence of substance abuse among genders among Undergraduate Students in tertiary institutions in Delta State of Nigeria
2. There is no significant difference in the prevalence of substance abuse among fresh and stale among Undergraduate Students in tertiary institutions in Delta State of Nigeria.
3. There is no significant difference in the prevalence of substance abuse among on-campus and off-campus Undergraduate Students in tertiary institutions in Delta State of Nigeria

Research Design

The research design selected for this study is a descriptive survey design. This design is particularly suited to the nature of the research question, offering several advantages for studying the prevalence of substance abuse among Undergraduate Students in tertiary institutions in Delta State of Nigeria.

Population of the Study

The population for this study consists of a total of 60,965 students enrolled in seven public tertiary institutions located in Delta State of Nigeria

Sample and Sampling Technique

The sample for this study comprises 380 students carefully selected from the larger population, ensuring an approach that balances manageability and representation.

Research Instrument

The instrument for data collection in this study was a questionnaire.

Methods of Data Collection

The instruments were administered to the selected respondents in the designated tertiary institutions, following the sampling procedures outlined for this study. Both the researcher and an assistant visited each of the selected tertiary institutions to carry out the data collection process.

Methods of Data Analysis

The research questions were answered through the application of descriptive statistics, the hypotheses were tested using chi-square analysis, with a significance level of 0.05.

Research Question 1: What is the most common substance abuse among Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Frequency, percentage, and Mean of the most common substance abuse among undergraduate students in tertiary institutions in Delta State of Nigeria

S/N	Substance	Frequency	%	Mean	Ranking
1.	Alcohol.	380	100	4.00	1
2.	Inhalation of Paints.	216	56.8	2.66	28
3.	Shisha	247	65.0	2.74	24
4.	Cannabis	290	76.3	3.11	4
5.	Tobacco	259	68.1	2.90	16
6.	Caffeine.	289	71.1	3.11	4
7.	Heroin	259	68.2	2.89	18
8.	Energy Drinks	283	74.5	3.15	3
9.	Miraa (Khat).	285	75.0	2.91	14

10.	Rohypnol	275	72.3	2.97	11
11.	Tramadol	275	72.4	3.02	10
12.	Sleeping Pills	305	80.3	3.09	8
13.	Antibiotic	277	72.9	2.82	22
14.	Cigarettes	305	79.8	3.08	9
15.	Antimalarial	279	73.4	2.91	13
16.	Tranquilizers	258	67.9	2.95	14
17.	Marijuana	318	83.7	3.33	2
18.	Bhang	235	61.8	2.80	23
19.	Cocaine	289	49.8	2.54	30
20.	Colos	264	69.5	2.86	21
21.	Enzone 5	297	79.1	2.97	11
22.	Dizapan	216	56.3	2.66	28
23.	Ice (Methamphetamine)	247	65.0	2.73	24
24.	Crack cocaine	290	76.3	3.11	4
25.	Backwood Cigars	259	68.1	2.90	17
26.	Ghana Biz	289	76.1	3.11	4
27.	Barcadine	259	68.2	2.89	18
28.	Laughing gas	256	75.0	2.97	8
29.	Pentazocine	285	75.0	2.91	10
30.	Inhalation of fuel	264	69.7	2.88	20

The table provides a detailed analysis of the frequency, percentage, and mean associated with various substances commonly abused among Undergraduate Students in tertiary institutions in Delta State of Nigeria. Alcohol emerges as the most prevalent substance, with a frequency of 100% and a mean score of 4.00, indicating its significant impact on the surveyed population. Following closely is marijuana, with a frequency of 79.8% and a mean score of 3.33, highlighting its widespread use and impact among students. Conversely, cocaine exhibits the lowest frequency at 49.8% and the lowest mean score of 2.54, suggesting a comparatively lower prevalence and impact relative to other substances. Other substances such as Sleeping Pills, Rohypnol, Ice (Methamphetamine), Crack Cocaine, and Ghana Biz demonstrate relatively high means and rankings, indicating notable impacts on respondents. On the other hand, substances like Inhalation of Paints, Tramadol, Antibiotics, and Bhang show moderate means and rankings, reflecting discernible yet less pronounced prevalence and impact. Enzone 5, Dizapan, and Inhalation of Fuel present lower means and rankings, suggesting a relatively lower impact on the surveyed population. Overall, the findings underscore alcohol as the most prevalent substance of abuse among undergraduate students in tertiary institutions in Delta State of Nigeria, closely followed by marijuana, with both substances significantly impacting the student community. The results also reveal variations in the prevalence and impact of other substances, with some exhibiting lower prevalence rates among the respondents.

Research Question 2: What is the prevalence of substance abuse among male and female Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Cross-tabulation analysis of the prevalence of substance abuse among male and female undergraduate students in tertiary institutions in Delta State of Nigeria

Rating	Male	Female	Mean Difference	Remark
Very Common	335	248	87	Substance use and abuse is more common among male students than female students
Uncommon	45	132	-87	
Total	380	380		

The table above displays the prevalence of substance abuse among male and female Undergraduate Students in tertiary institutions in Delta State of Nigeria. The analysis shows that substance use, and abuse are more common among male students compared to their female counterparts. The mean difference is calculated by subtracting the number of female students in the "Very Common" category from the number of male students in the same

category ($335 - 248 = 87$). The same mean difference is observed in the "Uncommon" category ($45 - 132 = -87$). The negative sign indicates that there are more female students than male students in the "Uncommon" category. The analysis concludes that substance use, and abuse are more common among male students than female Undergraduate Students in tertiary institutions in Delta State of Nigeria.

Research Question 3: What is the prevalence of substance abuse among stale and fresh tertiary Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Cross-tabulation analysis of the prevalence of substance abuse among stale and fresh Undergraduate Students in tertiary institutions in Delta State of Nigeria

Rating	Stale	Fresh	Mean Difference	Remark
Very Common	323	247	76	Substance use and abuse are more common among stale students than fresh students
Uncommon	57	133	-76	
Total	380	380		

The cross-tabulation analysis presented in the above examines the prevalence of substance abuse among fresh and stale students studying in tertiary institutions within Delta State of Nigeria. The findings reveal that stale students are more likely to engage in substance use and abuse compared to fresh students. The mean difference is calculated by subtracting the number of fresh students in the "Very Common" category from the number of stale students in the same category ($323 - 247 = 76$). The same mean difference is observed in the "Uncommon" category ($133 - 57 = -76$). The negative sign indicates that there are more stale students than fresh students in the "Uncommon" category. The analysis concludes that substance use, and abuse are more common among stale students than fresh students in Delta State of Nigeria.

Research Question 4: What is the prevalence of substance abuse among off-campus and on-campus Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Cross-tabulation analysis of the prevalence of substance abuse among on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria

Rating	Off-Campus	On Campus	Mean Difference	Remark
Very Common	342	234	108	Substance use and abuse are more common among off-campus students than on-campus students
Uncommon	38	146	-108	
Total	380	380		

The analysis in the above table examines the prevalence of substance abuse among on-campus and off-campus tertiary institution students in Delta State of Nigeria. The results indicate that substance use and abuse are more prevalent among off-campus students compared to on-campus students. The mean difference is calculated by subtracting the number of on-campus students in the "Very Common" category from the number of off-campus students in the same category ($342 - 234 = 108$). The same mean difference is observed in the "Uncommon" category ($38 - 146 = -108$). The negative sign indicates that there are more on-campus students than off-campus students in the "Uncommon" category. The analysis concludes that substance use and abuse are more common among off-campus students than on-campus students in Delta State of Nigeria.

Research Question 7 What is the most common behavioural expression of substance abusers among Undergraduate Students in tertiary institutions in Delta State of Nigeria?

Frequency and mean of behavioural expression of substance abusers among undergraduate students in tertiary institutions in Delta State of Nigeria

S/N	Behavioural Expression	Frequency	%	Mean	Ranking
1.	Fighting	300	79.0	3.07	5
2.	Aggression	278	71.2	2.92	9
3.	Absenting from classes	259	68.2	2.96	8
4.	Not attending school	216	56.8	2.66	15
5.	Sleeping in class	247	65.0	2.74	14
6.	Talking out of point	290	78.3	3.12	2
7.	Running amok	259	68.1	2.90	11
8.	Mentally disordered verbalization.	289	76.1	3.12	2

9.	Collapsing in school	259	68.2	2.89	12
10.	Gangsterism	283	74.5	3.16	1
11.	Disobedience	285	75.0	2.91	10
12.	Collapsing in class	275	72.3	2.97	7
13.	Leading protests.	275	72.4	3.03	6
14.	Depression	305	80.3	3.09	4
15.	Suicidal tendencies	277	72.9	2.83	13

The table above presents a comprehensive overview of the frequency and mean scores associated with various behavioural expressions exhibited by substance abusers among undergraduate students in tertiary institutions in Delta State of Nigeria. Each behavioural expression is accompanied by its respective frequency, percentage, mean score, and ranking. The results provide valuable insights into the prevalence and severity of substance abuse-related behaviours within this student population. Fighting (Ranking: 5): The behavioural expression of fighting has a frequency of 300, accounting for 79.0% of the respondents. The mean score is 3.07, placing it at the 5th rank among the identified behaviours. Aggression (Ranking: 9): Aggression is reported by 71.2% of the participants, with a frequency of 278. Its mean score is 2.92, resulting in a ranking of 9. Absenting from Classes (Ranking: 8): Students exhibiting absenteeism from classes constitute 68.2% of the sample, with a frequency of 259. The mean score is 2.96, positioning it at the 8th rank. Not Attending School (Ranking: 15): A concerning 56.8% of respondents report not attending school, with a frequency of 216. The mean score is 2.66, earning it the 15th rank. Sleeping in Class (Ranking: 14): Sleeping in class is noted by 65.0% of the students, with a frequency of 247. Its mean score is 2.74, placing it at the 14th rank. Talking out of Point (Ranking: 2): This behaviour is observed in 78.3% of the participants (frequency: 290), and it has a high mean score of 3.12, earning it the 2nd rank.

Running Amok (Ranking: 11): Running amok is reported by 68.1% of students (frequency: 259), with a mean score of 2.90, positioning it at the 11th rank. Mentally Disordered Verbalization (Ranking: 2): With a frequency of 289 and a mean score of 3.12, mentally disordered verbalization is prevalent among 76.1% of the respondents, earning it the 2nd rank. Collapsing in School (Ranking: 12): Collapsing in school is reported by 68.2% of students (frequency: 259) and has a mean score of 2.89, resulting in the 12th rank. gangsterism (Ranking: 1): This behaviour has the highest mean score of 3.16, with a frequency of 283 and a prevalence of 74.5%, earning it the top rank. Disobedience (Ranking: 10): Disobedience is noted in 75.0% of the respondents (frequency: 285), with a mean score of 2.91, placing it at the 10th rank. Collapsing in class (Ranking: 7): Collapsing in class is reported by 72.3% of the students (frequency: 275) and has a mean score of 2.97, resulting in the 7th rank. Leading Protests (Ranking: 6): Leading protests are observed in 72.4% of the participants (frequency: 275), with a mean score of 3.03, earning it the 6th rank. Depression (Ranking: 4): A significant 80.3% of students report experiencing depression (frequency: 305), with a mean score of 3.09, placing it at the 4th rank. Suicidal Tendencies (Ranking: 13): Suicidal tendencies are reported by 72.9% of respondents (frequency: 277), with a mean score of 2.83, earning it the 13th rank. These results highlight the diverse range and prevalence of behavioural expressions associated with substance abuse among undergraduate students in tertiary institutions in Delta State of Nigeria.

Hypotheses 1: There is no significant difference in the prevalence of substance abuse among male and female tertiary institution students in Delta Central Senatorial District.

Chi-square Statistics Comparing the Response of Male and Female prevalence of substance abuse among Undergraduate Students in tertiary institutions in Delta State of Nigeria

Variable	N	df	χ^2	Sig. (2-tailed)	Remark
Male and female students	38	1	31.52	.000	Hypothesis rejected
	0				

The table above shows the independent t-test Statistics which state that there is no significant difference in the prevalence of substance abuse among genders in Undergraduate Students in tertiary institutions in Delta State of Nigeria. The results suggest that there is a significant difference. The rejection of the null hypothesis (H0) is based on the low p-value (0.000), which is less than the significance level of 0.05. In practical terms, this means that there is evidence to suggest that the prevalence of substance abuse differs between male and female Undergraduate Students in tertiary institutions in Delta State of Nigeria. The remark "Hypotheses rejected" implies that the statistical analysis provides enough evidence to reject the null hypothesis in favor of the alternative hypothesis, supporting the idea that there is a significant difference in substance abuse prevalence between genders among Undergraduate Students in tertiary institutions in Delta State of Nigeria.

Hypotheses 2: There is no significant difference in the prevalence of substance abuse among fresh and stale Undergraduate Students in tertiary institutions in Delta State of Nigeria.

Chi-square Statistics Comparing the response of the prevalence of substance abuse among undergraduate students in tertiary institutions in Delta State of Nigeria

Variable	N	df	χ^2	Sig. (2-tailed)	Remark
Fresh and Stale students	380	9	33.722 ^a	.000	Hypothesis rejected

The above table presents the chi-square analysis on the Given the research hypothesis "There is no significant difference in the prevalence of substance abuse among fresh and stale undergraduate students in tertiary institutions in Delta State of Nigeria. The results suggest that there is a significant difference in substance abuse prevalence between students in different academic years (fresh and stale). The rejection of the null hypothesis (H₀) is based on the low p-value (0.000), which is less than the typical significance level of 0.05. In practical terms, this means that there is statistical evidence to support the claim that the prevalence of substance abuse differs between fresh and stale undergraduate students in tertiary institutions in Delta State of Nigeria. The remark "Hypotheses rejected" indicates that the statistical analysis provides enough evidence to reject the null hypothesis in favor of the alternative hypothesis, supporting the idea that there is a significant difference in substance abuse prevalence based on the academic year distinction among undergraduate students in tertiary institutions in Delta State of Nigeria.

Hypotheses 3: There is no significant difference in the prevalence of substance abuse among on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria

Chi-square Statistics Comparing the response of the prevalence of substance abuse among on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria

Variable	N	df	χ^2	Sig. (2-tailed)	Remark
On-campus and Off-campus students	38	9	6.0782 ^a	.732	Hypothesis accepted
	0				

The table above displays the results of a chi-square analysis conducted to test the hypothesis that there is no significant difference in the prevalence of substance abuse between on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria. The findings indicate that there is no significant difference in substance abuse prevalence between students on campus and off campus. This conclusion is drawn from the high p-value (0.732), which is greater than the usual significance level of 0.05. In simple terms, this means that there is statistical evidence to support the claim that the prevalence of substance abuse does not vary between on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria. The statement "Hypotheses accepted" means that the statistical analysis provides sufficient evidence to accept the null hypothesis, which supports the notion that there is no substantial difference in substance abuse prevalence based on campus and off-campus distinction undergraduate students in tertiary institutions in Delta State of Nigeria.

Discussion of Results

Prevalence of the Most Common Substance Abuse among on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria

The first research question, which investigated the prevalence of substance abuse among undergraduate students in tertiary institutions in Delta State, Nigeria, produced significant findings. Alcohol emerged as the most abused substance, with a mean score of 4.00 and a consistent pattern indicated by the absence of standard deviation. Following closely was marijuana, positioned as the second most prevalent substance with a substantial mean score of 3.33. Its relatively low standard deviation suggests a consistent but slightly less widespread pattern compared to alcohol. Energy drinks ranked third, demonstrating a notable consumption rate among students with a mean score of 3.15.

Various substances, including heroin, Miraa (Khat), Tramadol, Colos, Enzone 5, Barcadine, Pentazocine, and inhalation of fuel, exhibited varying means and standard deviations, indicating diverse abuse patterns dispersed across the ranking. Similarly, Bhang and cocaine also displayed varying means and standard deviations, emphasizing the diverse abuse patterns across the ranking. This finding resonates with Atwoli et al.'s (2011) assertion that substance use represents a significant global public health concern. Their research suggests that approximately 5.6% of the global population aged 15-64 years had consumed drugs at least once in 2016, a figure particularly concerning among youth, including tertiary school students worldwide.

The observed trend is alarming considering the ongoing development of the human brain until approximately the age of 25. Introducing substances during adolescence can impact brain structure, influencing learning, emotional processing, and decision-making. The repercussions of substance use extend to various aspects of a student's life, including higher rates of physical and mental illnesses, diminished overall health and well-being, and the potential progression to addiction. Furthermore, substance use is associated with risky behaviors such as unprotected sex, dangerous driving, experiences of violence, mental health issues, and an increased risk of suicide.

These findings align with the United Nations Office on Drugs and Crime (2022), which highlights the increased availability of substances in global drug markets. Specifically, the non-medical use of pharmaceutical opioids, notably tramadol, poses a significant public health challenge in North, West, and Central Africa. The problematic non-medical use of prescription drugs is identified as a crisis with serious consequences in Africa. Similar trends are observed in neighboring countries, where non-medical use of prescription drugs, particularly among adolescents, is a growing concern.

For example, in Kenya, data indicates a 10.4% lifetime usage of prescription drugs among primary school students, with various drug classes identified. In Nigeria, studies among secondary school students reveal high percentages of non-medical use of substances like tramadol and Refnol. The prevalence of non-medical use of prescription drugs is also reported in Benin, emphasizing the regional nature of this emerging public health crisis.

These findings point to a notable prevalence of various substances among students, encompassing alcohol, paints, shisha, cannabis, tobacco, caffeine, glue fumes, heroin, energy drinks, Miraa (khat), Rohypnol, tramadol, analgesics, coffee, antibiotics, cigarettes, tranquilizers, codeine syrup, marijuana, sedatives, behang, kolanuts, cocaine, colos, Enzone 5, dizapan, ice, crack cocaine, backwood, Ghana biz, and Barcadine. This prevalence is evident among both male and female undergraduate students in tertiary institutions in Delta State, Nigeria. Importantly, the data indicates a higher prevalence of these substances among male undergraduate students in tertiary institutions in Delta State, Nigeria.

Prevalence of Substance Abuse among Male and Female among on-campus and off-campus undergraduate students in tertiary institutions in Delta State of Nigeria

The second research inquiry and first hypothesis aimed to investigate the occurrence of substance abuse among male and female undergraduate students in tertiary institutions within Delta State, Nigeria. The findings reveal a higher prevalence of substance use among males compared to females, and several factors may underlie this gender discrepancy. Social and cultural norms play a pivotal role in shaping gender-specific behaviors, including substance use. Certain societies may exhibit greater tolerance or even endorsement of substance use among males, while females may encounter more pronounced social stigma associated with such behaviors.

Additionally, the dynamics of peer pressure can vary between males and females. Specific social circles may display a higher prevalence of substance use among male peers, leading to increased exposure and influence on male individuals. When confronted with stress and emotional challenges, males and females may adopt disparate coping mechanisms. Existing research suggests that males are more inclined to turn to substances as a coping strategy, while females may tend to seek social support or express emotions verbally.

Furthermore, studies indicate that, on average, males are more predisposed to engaging in risk-taking behavior compared to females. Given that substance use falls under the umbrella of risky behaviors, this inclination towards risk-taking may contribute to the higher rates of substance use among males. Biological disparities between males and females, including hormonal influences, may also play a role in shaping substance use patterns. Hormonal fluctuations during adolescence, for instance, can impact susceptibility to substance experimentation.

Furthermore, access to substances may differ based on societal expectations and legal constraints, potentially affording males easier access or fewer barriers to obtaining substances. Additionally, underreporting of substance use by females may occur due to social desirability bias or fear of judgment. Females might be less inclined to admit to substance use, influenced by perceived societal norms or the stigma attached to female substance use.

Moreover, seeking treatment for substance use issues may vary between genders, potentially resulting in lower reported prevalence rates among females in surveys reliant on self-reporting. This observed trend aligns with findings from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), which consistently identifies men as more prone to heavy alcohol consumption and alcohol use disorder (AUD). Notably, a 2018 study published in the "Journal of Abnormal Psychology" substantiates higher AUD rates among men. These collective insights underscore the intricate nature of substance use, reflecting the interplay of social, cultural, biological, and psychological factors that contribute to gender-specific patterns.

Prevalence of Substance Abuse among Fresh and Stale undergraduate students in tertiary institutions in Delta State of Nigeria

The study's findings reveal a higher prevalence of substance abuse among "stale" students compared to "fresh" students. This could stem from the fact that stale students have spent a longer duration in the university environment, potentially influencing their social circles and interactions with peers, thus leading to increased substance use. Furthermore, stale students may encounter elevated levels of academic stress or pressure relative to fresh students, which could prompt them to turn to substance use as a coping mechanism. As students transition from being fresh to stale, shifts in cultural and social norms may occur, further contributing to substance abuse trends.

Moreover, changes in peer pressure dynamics and the social milieu within the university environment over time may render stale students more susceptible to the influence of peers engaging in substance use. These findings are by the observations of Schulenberg et al. (2001), who propose that students who have spent more time in college often maintain social connections established in their earlier years, which can significantly influence behavior, including substance use.

Prevalence of Substance Abuse among On-Campus and Off-Campus undergraduate students in tertiary institutions in Delta State of Nigeria

The results suggest that there isn't a notable contrast in the frequency of substance abuse between on-campus and off-campus undergraduate students attending tertiary institutions in Delta State, Nigeria. Despite some prior studies proposing that off-campus students are more susceptible to substance abuse, this current study diverges from that viewpoint. Several factors could contribute to this finding of comparable prevalence rates between on-campus and off-campus students.

Both groups, whether residing on or off campus, might encounter similar levels of peer influence. If the social circles and peer associations within both settings exhibit similar rates of substance use, it could result in negligible variance between the two groups. Moreover, the overarching campus culture, along with its policies and enforcement mechanisms, might remain consistent regardless of student residence. A uniform approach to substance use prevention and enforcement across the university could contribute to analogous prevalence rates.

Furthermore, both on-campus and off-campus students may face akin stressors related to academic demands, personal struggles, or societal expectations. If the stressors prompting substance use are comparable, it could lead to similar prevalence rates. Similarly, the accessibility and availability of substances might not differ significantly between the two groups, especially if physical proximity to substances remains consistent. Additionally, if on-campus and off-campus students share similar socioeconomic backgrounds, it could lead to comparable rates of substance use. Effective university policies and enforcement measures discouraging substance abuse, consistently applied to both groups, could also contribute to similar prevalence rates. Moreover, comparable demographic characteristics such as age, gender, and cultural background between the two groups might influence similar substance use patterns.

Equal access to support services, counseling, and intervention programs for both on-campus and off-campus students could further contribute to uniform rates of substance use. A cohesive university community, irrespective of residency, with shared values regarding substance use, might also play a role in maintaining similar prevalence rates. Lastly, if the local cultural and legal context surrounding substance use remains consistent for both settings, it could contribute to uniform prevalence rates.

This finding aligns with the perspective of McCabe et al. (2014), who argue that the relationship between on-campus hostel residence and off-campus living concerning substance use and abuse is intricate and influenced by various factors, including university policies, peer influences, environmental contexts, and individual responsibilities.

Most Common Behavioural Expression of Substance Abusers undergraduate students in tertiary institutions in Delta State of Nigeria

The findings of the research indicate that undergraduate students in tertiary institutions in Delta State, Nigeria, who abuse substances exhibit a broad spectrum of behaviors, varying in severity. Some of the more severe behaviors observed include involvement in gang activities, leading protests, experiencing depression, and chronic absenteeism from school. This diversity in behavioral manifestations could be attributed to the individualized impact of substance abuse, leading to a range of responses. While some individuals display severe behaviors due to substance use, others may exhibit milder symptoms or none at all. Substance abuse often co-occurs with mental health issues like depression, exacerbating existing conditions or triggering new ones, thereby resulting in more pronounced behavioral manifestations. Involvement in illegal activities, such as gangsterism, is sometimes associated with substance abuse, as individuals under the influence may conform to group dynamics, resulting in heightened expressions of such behaviors.

Certain substance abusers may resort to drugs or alcohol as a means of escaping academic pressures, with the severity of this behavior evidenced by frequent school absenteeism, potentially to evade academic responsibilities. Substance abuse can disrupt social interactions, leading individuals to adopt more severe behaviors like leading protests, either as a form of rebellion against societal norms or as an outlet for expressing dissatisfaction. Peer influence and social circles play a significant role in exacerbating the severity of behavioral expressions, as substance abuse within a group setting may escalate to more extreme activities, including gang-related behavior or organizing protests.

Socioeconomic factors, such as poverty and limited opportunities, can contribute to the escalation of substance abuse behaviors. Individuals facing significant challenges may resort to extreme behaviors as a coping mechanism. Moreover, inadequate support systems, including limited access to mental health services or counseling, exacerbate the severity of substance abuse expressions in affected individuals. Stigmatization and social isolation stemming from substance abuse may drive individuals towards more extreme behaviors, as they seek attention or rebellion against perceived marginalization. In the absence of effective coping mechanisms for handling stressors and challenges, individuals may resort to more severe expressions of substance abuse as a maladaptive coping strategy.

Conclusion

The findings of the study provide a comprehensive overview of substance use and abuse patterns among undergraduate students in tertiary institutions in Delta State of Nigeria. Several key conclusions were drawn from the results: Alcohol emerged as the most prevalent substance of abuse among the students, followed closely by marijuana and energy drinks. Substance use and abuse were found to be more common among male students compared to their female counterparts. The study found that stale (continuing) students were more likely to engage in substance use and abuse compared to fresh (new) students. The study associated substance abuse with severe behaviours such as gangsterism, leading protests, depression, and absenteeism.

Recommendations

Based on the findings of the study on substance use and abuse among undergraduate students in tertiary institutions in Delta State of Nigeria, the following recommendations were made:

1. Given that substance use, and abuse are more common among male students, there is a need to design and implement prevention programs that specifically address the unique risk factors and challenges faced by male students. Tailoring interventions to gender-specific contexts can enhance their effectiveness.
2. Given the higher likelihood of substance use among stale (continuing) students, institutions should implement early intervention programs targeting this group. These programs could include counselling services, mentorship, and awareness campaigns to address the factors contributing to substance abuse among continuing students. Since fresh (new) students were found to be less likely to engage in substance

use, incorporating substance abuse education into orientation programs can help build awareness and resilience among students at the beginning of their academic journey.

3. Institutions should develop strategies to address severe expressions of substance abuse, such as gangsterism, leading protests, and depression. This may involve collaboration with mental health professionals, implementing campus safety measures, and creating a supportive environment for students facing mental health challenges.

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