

**FACTORS INFLUENCING PSYCHOACTIVE SUBSTANCE USE AMONG
ENGINEERING STUDENTS OF THE UNIVERSITY OF BENIN, BENIN CITY, EDO
STATE.**

BY

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UNIVERSITY OF BENIN

BENIN CITY

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**IN PARTIAL FULFILLMENT OF THE AWARD OF BACHELOR OF NURSING
SCIENCE [BNSC].**

OCTOBER, 2025

DECLARATION

This is to declare that this research project titled "**FACTORS INFLUENCING PSYCHOACTIVE SUBSTANCE USE AMONG ENGINEERING STUDENTS OF THE UNIVERSITY OF BENIN, BENIN CITY, EDO STATE.**" Was solely carried out by **ENWEMUCHE FAVOUR CHIDERA**. It is solely the result of my work except where stated otherwise by reference or acknowledgement as being derived from other person (s) or resources.

MATRICULATION NUMBER: _____

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CERTIFICATION

This is to certify that this research was carried out by **ENWEMUCHE FAVOUR CHIDERA** with **Matriculation No.** _____ under the supervision of **MRS. M. INIOMOR.**

Sign & Date _____

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Project Supervisor

Sign & Date _____

Name: PROF. (MRS) C. E OMOROGBE

Head Of Department (MED SURG)

External examiner

DEDICATION

This project work is dedicated to the **ALMIGHTY GOD** who has been my constant source of help and strength in my academic journey.

To my beloved Mother, **Mrs Enwemuche Nkechi**, whose unwavering support both financially and morally has kept me outstanding and fostering success all through my academic year.

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Abstract

Psychoactive substance use among university students has become a significant public health concern globally, with increasing prevalence particularly among young adults in higher institution. The general objective of this study was to examine the factors influencing psychoactive substance use among engineering students of the University of Benin. A descriptive cross-sectional research design was employed to investigate the prevalence, types, and determinants of substance use, as well as its perceived effects on students' academic performance and well-being. The target population consisted of all undergraduate engineering students, from which a sample size of 440 respondents was selected through a multistage sampling technique. Data were collected using a structured questionnaire and analyzed using descriptive and inferential statistics (frequencies, means, and Chi-square tests). Findings revealed that 43% of respondents had used one or more psychoactive substances. Alcohol, tramadol, cannabis, and cigarettes were the most commonly used. Major influencing factors included peer pressure, academic stress, curiosity, and easy accessibility. The study also found a significant association between peer influence and substance use, and between substance use and academic performance ($p < 0.05$). It was concluded that psychoactive substance use among engineering students is largely driven by social and academic pressures, with adverse consequences on learning and health. The study recommends enhanced drug education, stress management training, and stricter enforcement of campus anti-drug policies.

Keywords: Psychoactive substances, peer influence, academic performance, engineering students, mental health.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Psychoactive substance use is a growing concern worldwide, particularly among young adults, including university students. Psychoactive substances are chemical substances that, when taken, affect the central nervous system, leading to alterations in perception, mood, consciousness, cognition, and behavior (World Health Organization [WHO], 2022). These substances include alcohol, cannabis, opioids, stimulants (e.g., cocaine and amphetamines), hallucinogens, and prescription medications such as tramadol and codeine, which are often misused (National Institute on Drug Abuse [NIDA], 2021).

Globally, substance use among students has been linked to various socio-economic and psychological factors, including peer influence, academic pressure, family background, mental health conditions, and easy availability of drugs (Kumar et al., 2020). According to WHO (2022), over 275 million people worldwide used drugs at least once in 2021, with a significant proportion being young people aged 15–30 years. Young adults in tertiary institutions are particularly at risk due to developmental, psychological, and social transitions during this phase of life. In Africa, the prevalence of drug use among university students has been increasing, with countries like Nigeria reporting high rates of substance abuse among youths (United Nations Office on Drugs and Crime [UNODC], 2021).

In Nigeria, the problem of substance use among students is particularly alarming. Studies have shown that students engage in drug use for various reasons, including coping with stress, socialization, pleasure-seeking, and improving academic performance (Oluwatoyin & Adebayo,

2020). The most commonly abused substances among Nigerian students include alcohol, cannabis, tramadol, codeine, and cigarettes (Eze et al., 2021). University students are at a critical stage of life characterized by independence, exploration, and exposure to various social influences. Engineering students, in particular, experience unique academic and social stressors such as long study hours, heavy coursework, and project demands. These pressures may predispose them to use psychoactive substances as coping mechanisms (Eze et al., 2022). According to a study by the Nigerian Bureau of Statistics (NBS) and the UNODC (2018), approximately 14.4% of Nigerians aged 15–64 years use psychoactive substances, with young people being the most affected demographic. Reports and studies suggest that an increasing number of students in the university engage in substance use, driven by various personal and environmental factors (Okon & Uche, 2021). Peer pressure remains one of the most significant influences, as students often feel compelled to fit into social groups where substance use is normalized. Academic stress is another key factor, with some students using stimulants and depressants to cope with the pressures of studying and examinations (Odetola et al., 2020). Family background and socioeconomic status also play a role in influencing substance use behavior. Students from homes where substance use is common or where parental supervision is minimal are more likely to engage in drug use. Furthermore, the easy availability of drugs both within and outside university campuses facilitates access to substances. Studies have shown that some students procure substances from street vendors, pharmacies, or even fellow students who act as suppliers (Adeosun, 2019).

The consequences of substance use among students are far-reaching. Academic performance is often negatively impacted, as substance use can lead to cognitive impairments, lack of focus, absenteeism, and eventual academic failure (Eze et al., 2021). Health risks associated with

substance use include liver damage (from alcohol use), respiratory issues (from smoking), mental health disorders such as anxiety, depression, and schizophrenia (from cannabis use), and addiction (WHO, 2022). Social consequences include strained relationships with family and peers, involvement in criminal activities, and increased likelihood of risky behaviors such as unprotected sex and reckless driving (NIDA, 2021).

Despite efforts by the Nigerian government and university authorities to curb substance use, the problem persists. Policies such as drug education programs, awareness campaigns, and disciplinary measures have been implemented, but their effectiveness remains limited due to inadequate enforcement and lack of student engagement (Oluwatoyin & Adebayo, 2020). Substance use among engineering students has implications for academic performance, safety (especially in practical and workshop settings), and future professional competence. With the rising trend of drug use in Nigerian universities (Musa et al., 2021), it is crucial to understand the factors influencing psychoactive substance use among engineering students at the University of Benin to develop targeted interventions.

1.2 Statement of Problem

Psychoactive substance use has become an increasingly alarming issue among university students globally, with developing countries like Nigeria witnessing a steady rise in the prevalence of this behavior. While university life represents a critical period of personal and intellectual development, it is also a time when many students are exposed to risky behaviors due to newfound independence, peer pressure, and various socio-environmental influences. One of the most concerning among these behaviors is the use of psychoactive substances—ranging from alcohol, tobacco, and cannabis to prescription medications like tramadol, codeine, and benzodiazepines.

These substances are often consumed for recreational purposes, to relieve academic stress, enhance concentration, or cope with anxiety and depression. Many students engage in substance use as a coping mechanism for academic stress, peer influence, or social experimentation (Okon & Uche, 2021). Despite the well-known health risks and social consequences of psychoactive substance use, many university students continue to engage in the practice. Among engineering students, the rigorous nature of their program may drive them to seek psychoactive substances for stimulation, stress relief, or peer acceptance. Uncontrolled substance use can lead to absenteeism, poor academic performance, addiction, risky behaviors, and accidents during practical sessions or laboratory work.

At the University of Benin, the extent and nature of psychoactive substance use among students have not been adequately studied. While there is growing concern among stakeholders about substance-related issues on campus, there remains a significant lack of specific data targeting this subgroup of students. There is limited research specifically targeting engineering students in Nigerian universities, creating a gap in understanding the drivers of substance use within this group. As a result, the behaviors, motivations, and environmental factors influencing substance use among nursing students remain largely undocumented. This gap in knowledge is problematic for several reasons. Firstly, it limits the university's ability to implement targeted interventions, policies, or support services for students who may be struggling with substance use. Secondly, without clear evidence on the prevalence and driving factors of substance use in this population, broader public health initiatives may overlook a key at-risk group.

This study, therefore, seeks to fill this gap by determining the prevalence, identifying common substances used, examining contributing factors, and exploring the effects of psychoactive substance use among engineering students at the University of Benin. By addressing this

knowledge gap, the research will provide a foundation for developing effective intervention programs, health education campaigns, and support systems tailored to the needs of this specific student population. The findings will also contribute to the national discourse on youth and substance use, helping to inform strategies at both institutional and policy levels.

1.3 Objectives of the Study

The primary objective of this study is to examine the factors influencing psychoactive substance use among undergraduate students of the University of Benin.

The study specifically aims to:

1. Determine the prevalence of psychoactive substance use among engineering students of the University of Benin.
2. Identify common types of psychoactive substance used by these students.
3. Examine factors contributing to substance use among engineering students.
4. Identify the perceived effects and consequences of psychoactive substance use on academic performance and general well-being of engineering students.

1.4 Research Questions

This study will answer the following questions:

1. What is the prevalence of psychoactive substance use among engineering students of the University of Benin?
2. What are the common types of psychoactive substance used among these students?
3. What factors contribute to psychoactive substance use among engineering students?
4. What are the perceived effects of psychoactive substance use on academic performance and overall well-being of engineering students?

1.5 Research Hypotheses

The following null hypotheses are to guide this study and will be tested at a 0.05 level of significance:

- H_0 : There is no significant association between peer pressure and psychoactive substance use among engineering students of the University of Benin.
- H_0 : There is no significant relationship between psychoactive substance use and academic performance of engineering students in the University of Benin.

These hypotheses will be tested using appropriate statistical tools, and the outcomes will help determine whether associations exist between the identified variables in the study population.

1.6 Significance of the Study

This study is significant as it aims to provide valuable insights into the underlying factors influencing psychoactive substance use among engineering students at the University of Benin. By identifying the key drivers of substance use within this population, the study will contribute to the development of evidence-based strategies to address the issue and promote healthier behaviors among students. The findings from this research will be beneficial to the following groups:

1. University Administrators and Policy Makers

The results of this study will equip school authorities with data-driven insights to formulate or revise institutional policies, student codes of conduct, and disciplinary measures related to substance use.

2. Student Affairs Division and Campus Health Services

3. These bodies can use the study's findings to design targeted intervention programs such as peer counseling, health education campaigns, and substance use prevention workshops tailored to students in science, technology, engineering, and mathematics (STEM) fields.

4. Faculty Members and Academic Advisors

Lecturers and mentors will gain a better understanding of the psychosocial pressures faced by students, allowing them to provide more empathetic and supportive academic guidance and mentorship.

5. Mental Health Professionals and Counselors

The findings will assist counselors in identifying at-risk students and developing therapy or outreach programs to address academic stress, anxiety, depression, and other factors contributing to substance use.

6. Parents and Guardians

Insight into the challenges faced by students will help families provide more effective emotional and financial support, as well as monitor for early warning signs of substance abuse.

7. Researchers and Academics

This study will serve as a reference for future research on substance use among students in science, technology, engineering, and mathematics (STEM) fields.

8. Public Health Agencies and NGOs

The research will offer useful data for organizations working on youth health, drug education, and addiction prevention, enabling them to design more focused community outreach programs.

1.7 Scope of Study

The study is limited to undergraduate engineering students of the University of Benin. It will cover students from 100 to 500 level in all the Departments in the Faculty of Engineering. It will focus on identifying the prevalence/types of psychoactive substance used, the socio-demographic, psychological, social, and environmental factors influencing it, and its perceived effects on academic performance and well-being.

1.8 Operational Definition of Terms

Influencing Factors: Variables or conditions that may increase or decrease the likelihood of substance use (e.g., peer pressure, stress, academic load).

Mental Health: A person's emotional, psychological, and social well-being, affecting how they think, feel, and behave (APA, 2020).

Prevalence: The proportion of students within a population who report using psychoactive substances during a defined time period.

Psychoactive Substances: Chemical substances that affect the central nervous system, altering mood, perception, and behavior (WHO, 2022). They are substances that affect brain function including both legal (e.g., alcohol, prescription drugs) and illegal drugs (e.g., cannabis).

Substance Use: The consumption of psychoactive substances for recreational, experimental, or non-medical purposes (NIDA, 2021)

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Review

This review focuses on relevant ideas and definitions that underpin the study on psychoactive substance use among engineering students at the University of Benin. It draws on a broad range of scholarly perspectives, beginning from international viewpoints, narrowing to regional insights, national patterns, and finally contextualizing the problem within the local environment. It aims to provide a solid theoretical and conceptual foundation for understanding the dynamics of psychoactive substance use among university students. It examines the core concept of psychoactive substances, the factors influencing their use, as well as existing empirical findings and preventive strategies documented in related literature.

2.1.1 Concept of Psychoactive Substances

Psychoactive substances are chemical substances that, when consumed, affect the central nervous system (CNS), leading to alterations in perception, mood, consciousness, cognition, and behavior. These substances may be legal, such as alcohol, caffeine, and nicotine, or illegal, such as cannabis, heroin, and methamphetamines. Their consumption can lead to psychological dependence, physical addiction, and various forms of social and health-related problems (World Health Organization [WHO], 2022).

On the global stage, the United Nations Office on Drugs and Crime (UNODC, 2023) reports that over 284 million people aged 15–64 used drugs in 2021, indicating a 26% increase over the past decade. This includes substances like cannabis, opioids, amphetamines, and new psychoactive substances (NPS). Psychoactive substances, particularly synthetic drugs, have diversified in recent years, making regulation and prevention more complex (UNODC, 2023). According to

Deehan and Savic (2021), psychoactive substances are classified based on their effects: stimulants (e.g., cocaine, amphetamines), depressants (e.g., benzodiazepines, alcohol), hallucinogens (e.g., LSD), and opioids (e.g., heroin, morphine). These classifications are crucial for understanding the differential impacts they may have on users, particularly among vulnerable populations such as university students.

Regionally, within sub-Saharan Africa, there is a growing concern about the rising prevalence of psychoactive substance use, especially among youths and students in tertiary institutions. A study by Muriithi and Wambua (2022) revealed that the accessibility and affordability of substances such as cannabis, alcohol, and codeine-based cough syrups contribute significantly to increasing consumption rates. Furthermore, sociocultural and peer pressure dynamics in African urban settings have intensified the exposure of young people to substance use (Nwankwo & Osei, 2023).

In Nigeria, psychoactive substance use has reached alarming levels, particularly among young adults. The National drug Law Enforcement Agency (NDLEA, 2022) identified that one in seven persons aged 15–64 had used a psychoactive drug in the past year, with cannabis being the most commonly used. Youths in tertiary institutions are increasingly exposed to these substances due to factors like stress, academic pressure, peer influence, and the desire to enhance cognitive performance (Adewuyi et al., 2021). Studies have shown that psychoactive substance use among Nigerian university students is not just a social issue but a public health concern.

Specifically in Benin City, where the University of Benin is located, recent community health assessments have revealed a troubling trend of psychoactive substance experimentation among university students. Eze and Olowu (2022) conducted a study across tertiary institutions in Edo State and found that over 30% of students admitted to having tried at least one psychoactive

substance. These students reported that the substances helped them stay awake during exams, manage anxiety, or fit in with peers. The culture of silence and inadequate campus based interventions has further exacerbated the issue. According to Idemudia and Okoh (2023), there is limited institutional support for mental health counseling in many Nigerian universities, including the University of Benin, making it difficult for students battling substance use disorders to seek help. Moreover, the stigma associated with psychoactive substance use discourages students from coming forward, thus perpetuating the problem.

In conclusion, the concept of psychoactive substances is deeply rooted in a multidimensional framework that includes pharmacological, psychological, and social elements. While the global narrative emphasizes regulation and harm reduction, regional and local contexts, such as that of the University of Benin, highlight the urgent need for preventive strategies tailored to the unique experiences and pressures faced by engineering students. Addressing these issues holistically requires evidence-based policies, improved campus support systems, and ongoing education to mitigate the factors driving substance use.

2.1.2 Prevalence of Psychoactive Substance Use among University Students

The prevalence of psychoactive substance use among university students has been a recurring concern for researchers, educators, and public health practitioners across the globe. University students represent a unique demographic because they are at the transitional stage between adolescence and adulthood, characterized by experimentation, identity development, and increasing independence. These developmental factors, combined with environmental pressures such as academic demands, peer influence, and easy availability of substances, contribute to elevated rates of substance use in university environments (Johnston et al., 2020).

Globally, studies indicate that a significant proportion of university students engage in psychoactive substance use. The World Health Organization (2018) estimated that about 5.6% of the world's population aged 15–64 had used psychoactive substances in 2017, amounting to over 270 million individuals. Among these, young adults aged 18–25 represented a disproportionately large proportion. In the United States, for instance, the Monitoring the Future Survey reported that nearly 40% of college students had consumed alcohol in the past month, while 25% reported binge drinking. Additionally, about 20% of students reported cannabis use, and 10% reported misuse of prescription stimulants, often in the context of studying or enhancing academic performance (Johnston et al., 2020; National Institute on Drug Abuse [NIDA], 2020). Similar trends have been reported in Europe, where cannabis and alcohol remain the most commonly consumed substances among young adults in higher institutions (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2021).

In sub-Saharan Africa, the prevalence of substance use among university students has steadily increased. A study conducted in South Africa by Peltzer et al. (2019) found that 32% of university students reported alcohol use in the past month, 13% reported cannabis use, and 8% reported non-medical use of prescription drugs. In Ghana, Doku (2018) reported that about one-third of male students in public universities had experimented with alcohol and cannabis, with some indicating regular consumption. In Kenya, Atwoli et al. (2019) found that 43.8% of university students reported lifetime alcohol use, while 21.8% had used tobacco, and 8.5% had used cannabis. These findings suggest that psychoactive substance use is not confined to Western societies but is also prevalent in African university contexts.

In Nigeria, psychoactive substance use among university students has reached alarming levels. The National Survey on Drug Use and Health (UNODC, 2018) revealed that 14.4% of Nigerians

were active users of psychoactive substances, excluding alcohol and tobacco, with the highest rates recorded among young people aged 18–35. Among university students specifically, several studies have confirmed high prevalence rates. Adeyemo et al. (2020) reported that 45% of students surveyed across three Nigerian universities had used alcohol, while 28% had used cannabis, and 20% reported non-medical use of tramadol. Similarly, Eze and Igwe (2021) highlighted increasing prevalence of codeine and tramadol use among students in southern Nigeria, attributing the trend to the affordability and easy access of these substances from unregulated vendors.

Engineering students appear to demonstrate even higher prevalence compared to other faculties. This is partly due to the rigorous academic workload, which encourages the consumption of substances such as stimulants, energy drinks, and opioids to cope with stress and fatigue. A study by Okafor and Akinyemi (2021) on undergraduates in technical faculties in southwestern Nigeria revealed that nearly 35% of engineering students reported regular use of energy drinks, 22% used tramadol occasionally, and 19% admitted to cannabis use. These findings suggest that the prevalence of substance use may be particularly pronounced among engineering students because of the interplay between academic stress, peer influence, and cultural perceptions of masculinity often associated with the discipline.

Furthermore, regional studies within Nigeria suggest differences in prevalence across geopolitical zones. A study in northern Nigeria by Ibrahim et al. (2020) reported a lifetime prevalence of 30% for alcohol use and 15% for tramadol among university students, while in southern Nigeria, studies often record higher rates of cannabis and codeine use (Eze & Igwe, 2021). This regional variation reflects differences in cultural acceptance, law enforcement, and availability of substances.

It is also important to note gender differences in prevalence among Nigerian university students. Male students consistently report higher levels of psychoactive substance use compared to their female counterparts. Adekeye et al. (2020) found that male undergraduates were nearly twice as likely to use alcohol and cannabis as females, although there is an emerging trend of increasing use among female students, particularly with prescription opioids and alcohol. Among engineering students, male dominance in enrollment may also contribute to higher overall prevalence within the faculty.

In summary, the prevalence of psychoactive substance use among university students remains high both globally and in Nigeria, with engineering students representing a particularly vulnerable group. The literature demonstrates that alcohol, cannabis, tramadol, codeine, and energy drinks are the most commonly used substances. However, while several Nigerian studies have investigated substance use among undergraduates generally, there remains a relative scarcity of empirical evidence focusing specifically on engineering students. This gap provides justification for the present study, which aims to determine the prevalence, patterns, and influencing factors of psychoactive substance use among engineering students of the University of Benin.

2.1.3 Common Types of Psychoactive Substances Used by Students

The types of psychoactive substances commonly used by university students vary across regions, depending on cultural acceptance, availability, affordability, and peer norms. In both global and Nigerian contexts, the substances most frequently reported include alcohol, cannabis, tobacco, prescription opioids (such as tramadol and codeine), energy drinks, and—in some cases—cocaine and inhalants. Understanding the types of substances commonly consumed by students is critical,

as different substances carry distinct patterns of use, motivations, and consequences (NIDA, 2020).

Alcohol

Alcohol remains the most commonly used psychoactive substance among university students worldwide. In Western countries, alcohol consumption is often normalized within campus cultures, where social events, parties, and fraternity/sorority activities promote binge drinking (Johnston et al., 2020). In Nigeria, alcohol consumption is similarly widespread and culturally ingrained. Onyeaka and Ugoji (2019) reported that over 50% of undergraduates in southeastern Nigeria admitted to regular alcohol use, with a significant proportion engaging in binge drinking. Among engineering students, alcohol use is often linked to social bonding, stress relief, and coping with academic workload. Students frequently report drinking during weekends or after examinations to unwind from stress. However, excessive alcohol use has been linked to poor concentration, absenteeism, and risky behavior such as unsafe sexual activity and violence (Eze & Igwe, 2021). Despite its legal status, alcohol use remains a major contributor to health and social problems among students.

Cannabis

Cannabis is the most widely used illicit drug globally, and Nigeria ranks among the top consumers in Africa (UNODC, 2021). In Nigerian universities, cannabis—locally known as “weed” or “Igbo”—is prevalent among male students, particularly those residing off-campus. Adeyemo et al. (2020) found that 28% of undergraduates in southwestern Nigeria admitted to lifetime cannabis use, with engineering and social science students reporting higher rates compared to students in faculties such as medicine or law.

Cannabis is often used for recreational purposes, but some students perceive it as enhancing concentration, creativity, and alertness during late-night study sessions. However, long-term cannabis use has been linked to impaired memory, reduced motivation, and increased risk of psychiatric disorders such as psychosis and depression (NIDA, 2020).

Tobacco and Cigarettes

Tobacco use, particularly in the form of cigarettes and shisha, is another common substance among Nigerian students. Although global anti-smoking campaigns have reduced tobacco use in some parts of the world, prevalence among Nigerian youth remains significant. Adekeye et al. (2020) reported that about 20% of Nigerian male undergraduates smoked cigarettes, often starting during secondary school. Shisha smoking, often perceived as less harmful, has gained popularity among both male and female students, despite evidence showing it may be more dangerous than cigarettes due to prolonged exposure to toxins (WHO, 2019).

Among engineering students, cigarette smoking is sometimes used as a stimulant to stay awake during study periods or project work. However, the addictive potential of nicotine often leads to long-term dependence, with negative implications for health and academic productivity.

Prescription Drugs (Tramadol, Codeine, Benzodiazepines)

The misuse of prescription drugs has become a growing trend among Nigerian university students. Tramadol, an opioid analgesic, is widely misused for its euphoric and energy-boosting effects. Eze and Igwe (2021) reported that 20% of undergraduates in southern Nigeria admitted to non-medical use of tramadol. Codeine-containing cough syrups, despite being regulated, are still commonly abused by students. Some students also misuse benzodiazepines such as diazepam, often in combination with alcohol, to relieve stress or induce sleep.

Among engineering students, tramadol use is particularly concerning due to its association with managing fatigue during prolonged study sessions or practical work. While some students believe tramadol enhances alertness and stamina, medical evidence shows that misuse leads to dependence, cognitive impairment, and in some cases, overdose (NIDA, 2020).

Energy Drinks and Caffeine

Energy drink consumption has surged among university students in recent years, particularly in faculties with heavy academic workload such as engineering, medicine, and pharmacy. Energy drinks often contain high levels of caffeine, taurine, and sugar, marketed as enhancing energy, concentration, and endurance. Okafor and Akinyemi (2021) reported that 35% of engineering students in southwestern Nigeria consumed energy drinks regularly, often during examination periods or while working on academic projects.

Although energy drinks are legal and socially acceptable, excessive consumption can lead to negative health outcomes such as insomnia, anxiety, elevated blood pressure, and increased risk of cardiovascular problems (WHO, 2019). In combination with alcohol or other stimulants, energy drinks can also mask the depressant effects of substances, leading to higher risk-taking behavior among students.

Other Substances (Inhalants, Cocaine, and Others)

Although less common, some Nigerian students experiment with inhalants such as glue, petrol, and nail polish remover, particularly in low-income contexts. Cocaine use, while not as widespread as cannabis or tramadol, has been reported among affluent student groups with greater financial resources. The UNODC (2018) survey indicated that about 2% of Nigerian youth reported lifetime cocaine use, though this figure is lower than for alcohol, cannabis, or tramadol.

From the reviewed studies, it is evident that alcohol, cannabis, tobacco, tramadol, codeine, and energy drinks are the most prevalent psychoactive substances used by Nigerian university students. Among engineering students, stimulants (energy drinks, tramadol, and cannabis) are particularly favored due to the perceived need to cope with academic stress and maintain long hours of study. While these substances may provide short-term relief or performance enhancement, they often result in long-term academic, health, and social consequences.

The widespread availability of these substances in Nigerian university environments, coupled with limited enforcement of regulations, exacerbates the problem. The fact that engineering students report high levels of consumption underscores the need for targeted interventions in this faculty. Psychoactive substance use among university students, especially those in rigorous academic disciplines like engineering, has both short- and long-term consequences that impact not only their academic success but also their mental health, physical well-being, and professional development.

2.1.4 Factors Influencing Psychoactive Substance Use among Students

The use of psychoactive substances among university students is shaped by a complex interplay of personal, social, cultural, and environmental factors. While some students engage in substance use as a means of recreation or experimentation, others do so in response to academic pressures, peer expectations, or socioeconomic challenges. Understanding these underlying influences is central to developing effective interventions targeted at university populations, particularly engineering students who face intense academic and environmental pressures.

Psychological Factors

One of the strongest predictors of substance use among university students is psychological disposition. Several studies have shown that personality traits such as sensation-seeking,

impulsivity, and low self-control are positively associated with psychoactive substance use (Arnett, 2018). Young people with higher levels of stress, depression, and anxiety also have a greater tendency to use substances as coping mechanisms.

In Nigeria, Adekeye et al. (2020) found that students with elevated anxiety levels were more likely to misuse alcohol, tramadol, and cannabis compared to their peers with lower anxiety levels. Engineering students, in particular, face significant academic workload and pressure, which may predispose them to stress-related coping mechanisms, including substance use. Additionally, misconceptions that substances such as cannabis or tramadol enhance creativity, stamina, or focus make students more vulnerable to experimentation.

Peer Influence and Social Networks

Peer influence remains a dominant factor in student substance use behaviors. According to Social Learning Theory (Bandura, 1977), individuals learn behaviors by observing and imitating their peers, particularly in environments where such behaviors are normalized or rewarded. For university students, peer networks often provide the first exposure to substances.

In Ghana, Doku (2018) found that students whose close friends engaged in alcohol and cannabis use were three times more likely to adopt similar habits. Similarly, Okafor and Akinyemi (2021) reported that engineering students in southwestern Nigeria frequently cited peer pressure as a leading cause of tramadol and cannabis use. Social gatherings, parties, and off-campus living arrangements often expose students to peer groups where substance use is normalized, thereby reinforcing the habit.

Academic Pressure and Performance-Related Stress

Academic pressure is one of the unique drivers of substance use among university students. Engineering students, in particular, deal with heavy academic workloads, long hours of study, and

demanding laboratory or project requirements. Many resort to stimulants such as caffeine, energy drinks, tramadol, or cannabis to stay awake, enhance concentration, or cope with fatigue.

Adeyemo et al. (2020) found that 30% of engineering students in Nigeria reported using psychoactive substances during examination periods, citing reasons such as “staying alert” and “improving performance.” While some substances may provide temporary boosts, evidence shows that prolonged use results in impaired cognitive functioning, reduced memory retention, and academic decline (NIDA, 2020).

Socioeconomic and Financial Factors

Socioeconomic status and financial stability also influence substance use. Students with limited financial resources may resort to cheaper substances such as cannabis or locally brewed alcohol, while those with more disposable income may access expensive drugs like cocaine. Conversely, poverty and unemployment among students sometimes drive them into peer groups that normalize substance use as an escape from hardship (UNODC, 2018).

In a study conducted in Lagos, Nigeria, Eze and Igwe (2021) reported that students with higher allowances were more likely to consume alcohol and cigarettes frequently, while those with limited allowances reported higher tramadol and cannabis use. Engineering students, many of whom come from varied socioeconomic backgrounds, may therefore experience substance use patterns shaped by affordability and availability.

Availability and Accessibility of Substances

The ease of accessing psychoactive substances is another critical determinant of use among students. In Nigeria, substances such as tramadol, codeine syrups, cannabis, and alcohol are widely available through informal vendors, pharmacies, and unregulated markets. Although regulatory agencies have imposed restrictions on codeine distribution, reports indicate that

students still obtain it through illegal sources (Nigerian Drug Law Enforcement Agency [NDLEA], 2020).

Among engineering students, the proximity of substance vendors to campuses and hostels increases exposure. Off-campus housing, in particular, provides environments where substances are not only easily accessible but also socially reinforced by peers. Studies in South Africa (Peltzer et al., 2019) confirm similar findings, showing that ease of access significantly correlates with higher consumption rates among undergraduates.

Cultural and Environmental Influences

Cultural attitudes and societal norms also shape substance use. In Nigeria, alcohol consumption is often normalized and sometimes celebrated during social and cultural events. In some communities, cannabis use is associated with masculinity or creative expression, making it attractive to young male students. Engineering students, who often operate in male-dominated environments, may be more susceptible to cultural pressures that link substance use with endurance, toughness, or social acceptance.

Environmental stressors such as poor hostel conditions, inadequate recreational facilities, and urban exposure also contribute. Students living in urban centers like Benin City are more likely to encounter drug markets and peer groups engaged in substance use compared to those in rural areas.

Family Background and Parental Influence

Family upbringing and parental monitoring also play significant roles in shaping student behavior. Children raised in homes where parents use alcohol or tobacco are more likely to adopt similar habits during adolescence or university years (NIDA, 2020). Conversely, students from strict religious or closely monitored families may be less likely to engage in substance use.

In Nigeria, Adekeye et al. (2020) found that lack of parental guidance and weak family supervision were predictors of alcohol and cannabis use among university students. Engineering students, many of whom reside far from home for extended periods, often experience reduced parental control, thereby increasing their vulnerability to peer and environmental influences.

From the reviewed literature, it is evident that psychoactive substance use among university students is influenced by an interplay of psychological, social, academic, financial, cultural, and environmental factors. For engineering students, the combination of academic stress, male-dominated peer environments, and easy access to substances creates a particularly high-risk setting. These factors do not operate in isolation but interact to reinforce patterns of use and dependence.

This complexity underscores the need for targeted interventions that address multiple determinants simultaneously, such as providing stress management programs, regulating campus access to substances, and strengthening peer-based interventions.

2.1.5 Perceived Effects and Consequences of Psychoactive Substance Use on Academic Performance and Well-being

The consequences of psychoactive substance use among university students extend beyond immediate intoxication to include long-term impacts on academic performance, health, social relationships, and overall well-being. While some students perceive substance use as beneficial—enhancing concentration, alertness, or social confidence—the overwhelming evidence suggests negative consequences. For engineering students, who already face intense academic pressure, substance use often compounds challenges and jeopardizes academic success.

Perceived Academic Benefits

Many students engage in psychoactive substance use under the belief that such substances enhance academic performance. Stimulants such as caffeine, tramadol, or cannabis are often perceived to increase alertness, extend study hours, or improve memory retention. Okafor and Akinyemi (2021) found that a significant proportion of engineering students in southwestern Nigeria reported using tramadol and energy drinks during examinations, claiming that these substances enabled them to stay awake for extended periods.

Similarly, Adeyemo et al. (2020) observed that students perceived cannabis as enhancing creativity and critical thinking, particularly in faculties like engineering and the arts, where problem-solving is emphasized. However, while these substances may provide temporary improvements in alertness, empirical evidence shows that their prolonged use is associated with diminished concentration, impaired memory, and poor information retention (NIDA, 2020).

Academic Consequences

Contrary to perceived benefits, psychoactive substance use is strongly associated with negative academic outcomes. Johnston et al. (2020) reported that students who regularly engaged in substance use were more likely to miss classes, perform poorly on examinations, and experience delays in graduation. In Nigeria, Eze and Igwe (2021) found that undergraduates who reported frequent cannabis and tramadol use had significantly lower GPAs compared to their non-using counterparts.

Engineering students, in particular, require sustained focus, precision, and technical competence, which are often impaired by substance use. Fatigue, absenteeism, and lack of motivation—common consequences of heavy alcohol or drug use—directly compromise academic performance. Additionally, dependence on substances during study periods may create a cycle

where students are unable to perform academically without chemical stimulation, leading to psychological dependence.

Health Consequences

Substance use is also linked to a variety of health complications. Short-term effects may include nausea, dizziness, headaches, and sleep disturbances, while long-term use can result in liver damage (from alcohol), respiratory issues (from cannabis and tobacco), cardiovascular complications (from energy drinks), and cognitive impairments (from tramadol and other opioids) (WHO, 2019).

In Nigeria, Okafor and Akinyemi (2021) noted increasing cases of tramadol-related hospital admissions among young adults, with many students experiencing seizures, hallucinations, or overdose. Engineering students, who may combine stimulants such as energy drinks with depressants like alcohol, face particularly high risks of adverse drug interactions.

Social and Behavioral Consequences

Substance use also affects students' social lives and behavior. Alcohol and drug misuse are associated with increased aggression, risky sexual behavior, and interpersonal conflicts (Peltzer et al., 2019). In Nigerian university settings, excessive alcohol consumption during student parties or cult-related activities often results in violence and unsafe practices.

Students who misuse psychoactive substances may also experience social isolation, as dependence and erratic behavior strain relationships with peers, lecturers, and family. For engineering students, where teamwork and collaboration are essential for group projects, such behavioral disruptions can undermine both academic and social success.

Psychological and Emotional Consequences

Psychoactive substance use is closely linked with psychological problems such as depression, anxiety, and suicidal ideation. Adekeye et al. (2020) reported that Nigerian students with higher levels of alcohol and cannabis use showed greater prevalence of depressive symptoms and low self-esteem. The cycle of using substances to cope with stress often worsens underlying psychological conditions, leading to dependence and chronic emotional instability.

Engineering students, who may already struggle with high workloads and limited coping mechanisms, are particularly vulnerable to these psychological consequences. Rather than providing relief, substances often exacerbate stress, reduce resilience, and impair problem-solving capacity.

Long-term Life Consequences

The long-term implications of psychoactive substance use during university years can extend well into adulthood. Persistent use may lead to chronic health conditions, unemployment, financial difficulties, and reduced life satisfaction. NIDA (2020) emphasizes that early initiation of substance use increases the likelihood of dependence later in life.

For engineering students, whose careers demand discipline, safety consciousness, and technical competence, prolonged substance dependence may lead to poor job performance, workplace accidents, and reduced employability.

While some students perceive psychoactive substances as beneficial for academic performance, the overwhelming evidence indicates that such benefits are temporary and outweighed by significant academic, health, psychological, and social costs. For engineering students at the University of Benin, the consequences may be particularly damaging due to the rigorous academic and professional demands of their field. Understanding these perceived effects and real

consequences is essential for addressing the root of the problem and designing interventions that target both the myths and the realities of substance use.

2.2 Theoretical Review

A theoretical framework provides the foundation upon which a study is built, offering structured explanations for the relationships between variables and guiding both data interpretation and analysis. For this study, the theoretical framework serves as a lens to understand how engineering students at the University of Benin may be influenced to engage in psychoactive substance use. In this context, Social Learning Theory (SLT) developed by Albert Bandura has been adopted. This theory was chosen because it effectively explains how behaviors, such as substance use are learned and maintained within social and environmental settings, particularly among peer groups.

2.2.1 Overview of Social Learning Theory

Social Learning Theory (SLT), developed by Albert Bandura in 1977, provides one of the most comprehensive explanations for human behavior, particularly regarding how individuals acquire new habits, attitudes, and practices. Unlike purely behavioral theories that emphasize direct reinforcement, Bandura's Social Learning Theory highlights the importance of observational learning, imitation, and modeling in shaping behavior (Bandura, 1977). According to this perspective, individuals—especially young people—do not always need to experience direct reinforcement or punishment to learn behaviors. Rather, they can acquire them by observing others within their social environment, particularly peers, family members, or influential role models.

In the context of psychoactive substance use among students, Social Learning Theory suggests that behaviors such as drinking alcohol, smoking cannabis, or misusing prescription drugs are often learned by observing peers who engage in these activities. When such behaviors are

perceived as rewarding—such as gaining social acceptance, reducing stress, or enhancing academic stamina—students are more likely to adopt and replicate them. This makes SLT highly relevant for understanding substance use patterns among engineering students of the University of Benin.

Social Learning Theory

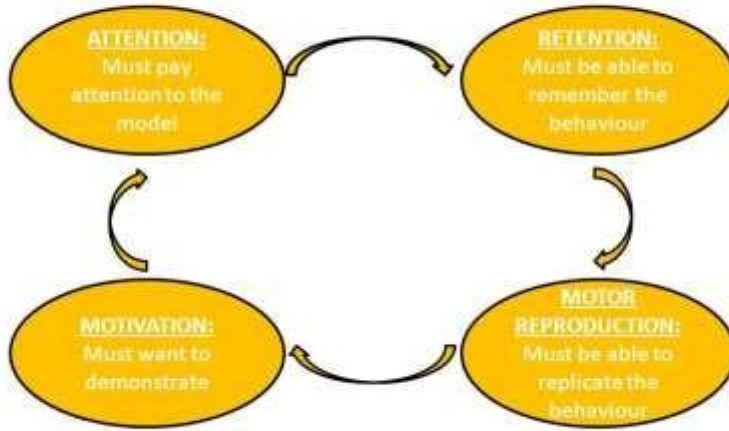


Fig 1: Mechanism that govern observational learning

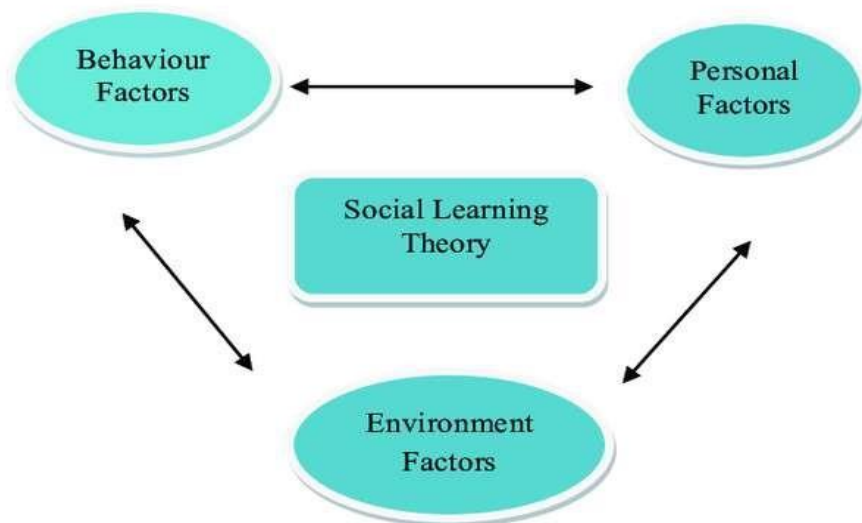


Fig 2: Social learning theory

2.2.2 Core Principles of Social Learning Theory

Bandura's framework rests on several principles that help explain how behaviors are acquired and maintained.

1. Observational Learning

Individuals can learn new behaviors by observing others, even without direct personal experience. For instance, a student may watch peers use tramadol during exam periods and then adopt the behavior, believing it improves academic performance.

2. Imitation and Modeling

Students are more likely to imitate behaviors modeled by those they admire or identify with. For example, if a popular or academically successful student uses cannabis or energy drinks to cope with academic stress, peers may model this behavior, hoping for similar outcomes.

3. Reinforcement and Punishment

Behaviors are sustained or abandoned depending on whether they are rewarded or punished. If substance use leads to peer approval, reduced stress, or improved stamina, students may be more likely to continue the habit. Conversely, if substance use results in negative consequences such as illness, parental punishment, or expulsion, the behavior may decrease.

4. Reciprocal Determinism

Behavior, personal factors, and the environment interact in a continuous loop. This means a student's substance use behavior is influenced not only by personal attitudes and peer pressure but also by the larger university environment (e.g., easy access to substances, cultural acceptance of alcohol).

2.2.3 Application of Social Learning Theory to Psychoactive Substance Use among Students

Social Learning Theory is particularly useful for explaining why psychoactive substance use is prevalent among university students. First, the university setting provides ample opportunities for observation and imitation. Students are frequently exposed to substance-using peers, social gatherings, and campus cultures where drug and alcohol use is normalized.

Engineering students, who often work in groups, spend long hours in study sessions, and face high levels of stress, may observe peers using stimulants such as tramadol, caffeine, or cannabis to cope. When they see these peers performing well academically or socially while engaging in substance use, they may conclude that such behaviors are beneficial.

Additionally, reinforcement plays a significant role. Students who use substances and experience temporary benefits—such as increased energy during exams, relaxation during stressful projects, or acceptance within peer groups—are more likely to continue the behavior. Conversely, the lack of immediate punishment for drug use on campus further sustains the cycle.

2.2.4 Relevance of Social Learning Theory to the Present Study

The choice of Social Learning Theory as the theoretical framework for this study is based on its ability to explain how, why, and under what conditions students adopt psychoactive substance use. The factors influencing substance use identified in the conceptual review—such as peer influence, academic stress, cultural acceptance, and accessibility—are all consistent with SLT principles.

Peer Influence: SLT explains why students surrounded by substance-using peers are more likely to engage in similar behaviors.

Academic Stress: Observing peers using stimulants to cope with workload provides models for imitation.

Cultural and Environmental Norms: Campus environments that tolerate or even promote substance use act as reinforcing contexts.

Perceived Benefits: Observed rewards, such as enhanced social standing or academic stamina, strengthen substance-using behaviors.

By applying Social Learning Theory, this study recognizes that interventions to reduce substance use must go beyond individual-level strategies. They must address peer norms, provide positive role models, and reshape campus cultures that tacitly encourage substance use.

2.2.5 Critique of Social Learning Theory

While Social Learning Theory provides a strong framework for understanding psychoactive substance use, it has limitations. Critics argue that it may overemphasize environmental and social influences while underestimating biological or genetic predispositions to addiction (Miller & Dollard, 2019). Moreover, not all students exposed to substance-using peers engage in drug use, suggesting that individual resilience and personality traits also play important roles.

Despite these limitations, SLT remains a valuable theoretical lens because it accounts for the powerful role of peer dynamics, modeling, and reinforcement, which are particularly salient in university contexts.

In conclusion, Social Learning Theory offers a comprehensive framework for examining the factors influencing psychoactive substance use among engineering students of the University of Benin. By emphasizing the role of observation, imitation, reinforcement, and environmental factors, SLT provides insights into how substance use behaviors are learned, maintained, and potentially unlearned. This makes it a suitable and robust theoretical basis for the current study.

2.3 Empirical Review

This review presents a critical evaluation of existing research studies that are directly related to the variables and objectives of this current study. This section aims to explore and synthesize findings from previous empirical investigations conducted both internationally and locally on the topic of psychoactive substance use among university students, with specific attention to engineering students where available. It helps to identify consistent trends, patterns, and relationships across different contexts, as well as contradictions and knowledge gaps that this current study seeks to address. It provides evidence-based insights into the prevalence and types of substances used by students and the contributing factors influencing usage.

2.3.1 Prevalence of Psychoactive Substance Use among University Students

The prevalence of psychoactive substance use among university students has been a subject of global concern, as this age group represents a critical developmental stage marked by increased independence, exposure to new social environments, and heightened risk-taking behaviors. Psychoactive substance use among students is not a uniform phenomenon; instead, it varies widely across countries, cultures, and academic disciplines. Understanding the prevalence of this issue is vital because it provides the baseline for evaluating the magnitude of the problem and designing appropriate interventions.

Globally, research has consistently demonstrated that university students are among the most vulnerable groups when it comes to psychoactive substance use. According to the World Drug Report by the United Nations Office on Drugs and Crime (UNODC, 2021), nearly 275 million people worldwide used drugs at least once in 2020, and young adults between the ages of 18 and 25 were disproportionately represented. The Monitoring the Future survey in the United States further reported that 39% of college students had consumed alcohol in the past month, 25%

engaged in binge drinking, and 20% reported cannabis use (Johnston et al., 2020). Similarly, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, 2021) documented that one in five young adults (ages 18–24) had used cannabis in the past year, with alcohol use exceeding 60% among university students.

These statistics reflect not only the widespread availability of psychoactive substances but also the normalization of their use within student populations. In countries where cannabis has been legalized or decriminalized, such as parts of North America and Europe, the prevalence rates are even higher. Moreover, psychoactive substance use among students has been linked to cultural factors such as the “campus party culture” that glamorizes alcohol and cannabis consumption during social and academic gatherings (NIDA, 2020).

In sub-Saharan Africa, the prevalence of psychoactive substance use among university students is equally concerning. Studies have reported that alcohol, cannabis, and tobacco are the most widely used substances, followed by prescription drugs such as tramadol and codeine. For instance, Peltzer et al. (2019) found that in South Africa, 32% of university students consumed alcohol regularly, 13% used cannabis, and 8% misused prescription drugs. In East Africa, Atwoli et al. (2019) reported a lifetime prevalence of 43.8% for alcohol, 21.8% for tobacco, and 8.5% for cannabis among Kenyan university students.

In Ghana, Doku (2018) noted that more than 40% of male students and 20% of female students had consumed alcohol in the previous year, while cannabis use was reported by 10% of the respondents. Importantly, these studies highlight that substance use is not limited to a single substance but often involves poly-drug use, where students consume more than one psychoactive substance concurrently. The rising trend of energy drink consumption, often mixed with alcohol,

has also been documented in several African contexts as a coping mechanism for academic stress (Agbonghae & Olaniyi, 2020).

Nigeria, as the most populous country in Africa, has been described as a hotspot for psychoactive substance use, particularly among young people. The UNODC (2018) National Survey on Drug Use and Health estimated that 14.4% of Nigerians aged 15–64 had used psychoactive substances in the past year, excluding alcohol and tobacco. Among young adults aged 18–35, the prevalence was significantly higher. Alarming, the survey also reported that 10.6 million Nigerians were active cannabis users, while 4.6 million were non-medical users of opioids such as tramadol.

Several studies conducted in Nigerian universities echo these national statistics. Adeyemo et al. (2020) reported that 45% of undergraduate students surveyed in southern Nigeria had used alcohol, 28% had used cannabis, and 20% had misused tramadol at least once in their lifetime. Similarly, Eze and Igwe (2021) found that codeine cough syrup and tramadol were the most commonly misused prescription drugs among students in southeastern Nigeria. Alcohol, cannabis, and cigarettes remained the most dominant substances in terms of overall prevalence.

Regional variations within Nigeria also exist. For example, studies in northern Nigeria show lower prevalence rates for alcohol due to religious restrictions but higher use of substances like codeine syrup and cannabis (Oshodi et al., 2020). This suggests that the social, cultural, and religious environment strongly influences the type and extent of substance use among Nigerian students.

Although many studies focus broadly on university students, research specifically targeting engineering students indicates distinct patterns of use. The demanding academic workload in engineering disciplines, coupled with high stress during examination and project periods, may predispose students in this field to psychoactive substance use. Okafor and Akinyemi (2021)

reported that among engineering students in southwestern Nigeria, 35% consumed energy drinks regularly, 22% reported occasional tramadol use, and 19% admitted to cannabis use. Notably, energy drink consumption was significantly higher among engineering students compared to students in arts and social sciences.

Another study by Olawale et al. (2020) found that engineering students were more likely to engage in poly-substance use, particularly mixing alcohol with cannabis or energy drinks. This behavior was attributed to peer influence, long study hours, and the belief that substances could enhance concentration and endurance during demanding academic tasks.

While prevalence rates vary across studies, the evidence consistently shows that engineering students are not only part of the broader university substance use problem but may also face unique risks due to the intense pressures of their discipline. This underscores the importance of focusing specifically on this subgroup within the University of Benin.

2.3.2 Empirical Review on Common Types of Psychoactive Substances Used by Students

The types of psychoactive substances used by students vary across countries and cultural contexts, but several substances remain consistently prevalent across global, regional, and local studies. These include alcohol, cannabis, tobacco, prescription opioids such as tramadol and codeine, stimulants (both legal and illicit), and increasingly, energy drinks. Understanding the common substances used by students provides insight into the scope of the problem and highlights areas for targeted intervention.

At the global level, alcohol remains the most commonly consumed psychoactive substance among university students. According to the National Institute on Drug Abuse (NIDA, 2020), more than 60% of U.S. college students reported consuming alcohol in the past year, with binge drinking being a particular concern. Cannabis is the second most commonly used drug, with

Johnston et al. (2020) reporting that approximately 20% of American undergraduates used cannabis in the past month. The growing legalization of cannabis in North America and parts of Europe has further normalized its use among young adults (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2021).

Tobacco products, while declining in some Western countries due to public health campaigns, remain in use among a notable proportion of students, often in the form of cigarettes or e-cigarettes. Prescription stimulants such as Adderall and Ritalin are also misused by students in the United States and Europe, primarily as “study drugs” to enhance concentration and endurance during exams (Benson et al., 2019).

Energy drinks, although legal, have become a growing concern worldwide. They are marketed as performance-enhancing beverages, but their high caffeine content poses health risks when consumed in excess or mixed with alcohol. Miller and Quigley (2019) documented widespread energy drink consumption among college students in the U.S., with nearly 40% reporting mixing them with alcohol to prolong partying hours.

Across Africa, studies consistently highlight alcohol, cannabis, and tobacco as the most commonly used psychoactive substances among students. In South Africa, Peltzer et al. (2019) reported that 32% of undergraduates regularly consumed alcohol, while 13% reported cannabis use. Similarly, Doku (2018) found that alcohol was the most prevalent psychoactive substance among Ghanaian university students, with more than 40% reporting regular consumption. Cannabis use was also significant, particularly among male students, while cigarette smoking was noted among both male and female undergraduates.

Prescription drug misuse is another rising concern in Africa. Tramadol, an opioid analgesic, has emerged as one of the most commonly abused prescription drugs among students. In West Africa,

tramadol use has increased rapidly due to its availability on the black market and its perceived ability to enhance physical and mental performance (Adeniran et al., 2019). Codeine-based cough syrups have also been reported as commonly misused substances among young people in Nigeria, Ghana, and other West African countries (Oshodi et al., 2020).

Energy drinks are gaining popularity among African students, particularly during exam periods. Agbonghae and Olaniyi (2020) found that university students in Ghana and Nigeria commonly consumed energy drinks to stay awake for long study sessions. However, some students also reported mixing them with alcohol, leading to increased risks of intoxication, dehydration, and cardiovascular problems.

In Nigeria, a wide variety of psychoactive substances are consumed by students. Alcohol remains the most widely used substance, often consumed during social gatherings, parties, and campus events (Adeyemo et al., 2020). Cannabis use is also widespread, with the UNODC (2018) reporting that Nigeria is one of the largest cannabis-consuming countries in Africa, with high usage rates among young adults and students.

Prescription opioid misuse is particularly alarming in Nigeria. Eze and Igwe (2021) documented high levels of tramadol and codeine abuse among undergraduates in southeastern Nigeria. These substances are often used not only for recreational purposes but also as coping mechanisms to manage academic stress and emotional challenges. Tramadol, in particular, is valued by students for its stimulant properties, despite its serious side effects such as seizures and dependency.

Other substances such as tobacco, cigarettes, and shisha are also popular among Nigerian undergraduates, especially in urban areas. Additionally, energy drinks are widely consumed, often by engineering, medical, and science students who face heavy academic workloads (Okafor

& Akinyemi, 2021). Energy drinks are sometimes mixed with alcohol or other drugs, increasing the risks of overdose and impaired judgment.

A study by Adekeye et al. (2020) found that poly-substance use is a growing trend among Nigerian students. Many undergraduates simultaneously use alcohol, cannabis, and prescription drugs, either for recreational purposes or as performance enhancers. This pattern of use increases the likelihood of adverse health and social consequences.

Among engineering students, the choice of substances often reflects their academic pressures and social dynamics. Okafor and Akinyemi (2021) reported that 35% of engineering students in southwestern Nigeria regularly consumed energy drinks, 22% occasionally used tramadol, and 19% admitted to cannabis use. Alcohol consumption was also prevalent, particularly during weekends and social events.

Engineering students have been found to prefer stimulants such as energy drinks, tramadol, and cannabis because of the perception that these substances enhance concentration, creativity, and stamina during long study sessions or project work. Olawale et al. (2020) also noted a concerning trend of poly-substance use among engineering undergraduates, with alcohol and cannabis often being mixed with energy drinks to sustain alertness or heighten social experiences.

This pattern of use is particularly worrisome, given that many engineering students underestimate the health risks associated with these substances. For instance, energy drinks are commonly regarded as harmless, despite their link to anxiety, heart problems, and sleep disturbances when consumed excessively. Similarly, tramadol misuse is often downplayed, even though it carries a high risk of dependency and severe medical consequences (Eze & Igwe, 2021).

In summary, the most common psychoactive substances used by university students globally include alcohol, cannabis, tobacco, prescription stimulants, opioids (such as tramadol and

codeine), and energy drinks. In Nigeria, alcohol, cannabis, tramadol, codeine syrup, and energy drinks dominate the student drug landscape. Among engineering students specifically, stimulants such as energy drinks, tramadol, and cannabis appear to be disproportionately consumed, reflecting their academic demands and peer social culture.

2.3.3 Factors Contributing to Psychoactive Substance Use among Students

The use of psychoactive substances among students is shaped by a variety of interrelated factors that cut across psychological, social, cultural, academic, and environmental domains. Understanding these factors is crucial to identifying why students initiate and maintain substance use, and to design interventions that address root causes rather than symptoms.

At the global level, several key factors have been consistently identified.

Psychological factors such as stress, anxiety, depression, and curiosity play major roles in substance use initiation. Studies from the United States and Europe have shown that students often resort to alcohol, cannabis, or stimulants to manage stress associated with academic demands (NIDA, 2020; Johnston et al., 2020). The misuse of prescription stimulants such as Adderall and Ritalin, commonly referred to as “study drugs,” is often motivated by the belief that they improve academic performance and alertness during exam periods (Benson et al., 2019).

Social and peer-related influences are equally significant. According to Bandura’s Social Learning Theory, behaviors are often learned by observing peers and role models. Johnston et al. (2020) noted that students surrounded by peers who drink or smoke are more likely to adopt similar behaviors. Media portrayal of substance use in films and music has also been linked to increased experimentation among young people.

Environmental and cultural factors also play a role. In Western societies where alcohol and cannabis are legal or socially acceptable, students are more likely to view them as “safe” or

harmless. Accessibility and affordability are also global contributors: where substances are cheap and readily available, their use among students tends to be higher (EMCDDA, 2021).

In Africa, psychoactive substance use among university students is influenced by both modern and traditional factors.

Peer influence is a major determinant. In Ghana, Doku (2018) reported that students were more likely to use alcohol and cannabis when their close friends did. Peer groups often serve as the initial entry point for trying substances, especially in social gatherings.

Psychological and academic pressures also play a role. In Kenya, Atwoli et al. (2019) found that many students used substances such as alcohol and cannabis to cope with exam stress, while tramadol and energy drinks were consumed to improve concentration during late-night study sessions.

Cultural acceptance of certain substances, particularly alcohol, contributes significantly. In South Africa, Peltzer et al. (2019) noted that drinking was normalized among young adults and integrated into campus social life, making abstinence more difficult.

Economic influences have also emerged in African studies. Students with higher disposable income often purchase alcohol and cigarettes, while those with limited funds may turn to cheaper, illicit substances such as tramadol or cannabis (Adeniran et al., 2019).

In Nigeria, the factors influencing substance use are multi-faceted.

1. Psychological Factors:

Many Nigerian students report using psychoactive substances to manage stress, anxiety, and depression. Adeyemo et al. (2020) found that a significant number of undergraduates used tramadol and cannabis as coping mechanisms during exams. Curiosity and the desire for excitement were also cited as reasons for initiation.

2. Peer and Social Influence:

Peer pressure has been consistently identified as a strong determinant. Eze and Igwe (2021) observed that over 50% of Nigerian students who used cannabis or alcohol did so initially due to peer encouragement. Furthermore, substance use is often tied to group identity, with students perceiving it as a way of “fitting in” with friends.

3. Academic Pressure:

The intense academic environment in Nigerian universities contributes significantly to substance use. Okafor and Akinyemi (2021) noted that many students, particularly in demanding courses like engineering and medicine, used stimulants and energy drinks to sustain long hours of study. This is in line with studies by Adekeye et al. (2020), which revealed that “performance enhancement” was a common justification for tramadol use.

4. Economic Factors:

The affordability of drugs such as tramadol, codeine, and cannabis makes them accessible to students, particularly in urban centers like Lagos, Benin, and Port Harcourt. According to the NDLEA (2020), unregulated drug markets surrounding campuses supply students with substances at low costs, making financial constraints less of a barrier to use.

5. Cultural and Environmental Influences:

The cultural acceptance of alcohol as part of Nigerian youth and campus social life normalizes its use. In addition, media glorification of drug use in Nigerian music, particularly Afrobeat and hip-hop, has influenced student attitudes toward cannabis and codeine syrup (Eze & Igwe, 2021). Environmental factors, such as the proximity of unlicensed vendors and poor enforcement of drug laws, further exacerbate the problem (NDLEA, 2020).

Engineering students face unique pressures that increase their risk of psychoactive substance use.

Academic Demands: Engineering programs are notoriously rigorous, with heavy coursework, long study hours, and frequent assessments. Okafor and Akinyemi (2021) found that engineering students often turned to energy drinks, cannabis, and tramadol to stay awake and focused during exams and project deadlines.

Peer Group Dynamics: Engineering students often form close study groups, where substance use may be normalized. Olawale et al. (2020) noted that peer influence was particularly strong in engineering faculties, with many students reporting that they first experimented with cannabis or alcohol in the company of classmates.

Perceived Performance Enhancement: Engineering students tend to justify substance use as a tool to improve concentration, endurance, and creativity, particularly when dealing with complex technical tasks. This belief is reinforced by anecdotal peer experiences rather than scientific evidence.

Stress and Coping Mechanisms: Engineering students face high levels of stress due to demanding academic schedules and career expectations. Many adopt substances as maladaptive coping strategies, leading to patterns of dependence (Adeyemo et al., 2020).

Accessibility: The presence of unregulated drug vendors around campuses like the University of Benin makes it easy for students to access tramadol, codeine syrup, and cannabis at relatively low cost. Engineering students, with their intense schedules, often resort to readily available stimulants (NDLEA, 2020).

In summary, the factors influencing psychoactive substance use among students are multidimensional, cutting across psychological stress, peer pressure, academic challenges, socioeconomic status, cultural acceptance, and environmental availability. While these factors affect students broadly, engineering students appear particularly vulnerable due to the intense

nature of their academic programs, the social dynamics of their peer groups, and the easy accessibility of substances within and around campus.

2.3.4 Perceived Effects and Consequences of Psychoactive Substance Use

The consequences of psychoactive substance use among university students are wide-ranging, cutting across academic performance, health outcomes, psychological well-being, and social functioning. While some students perceive substance use as beneficial—enhancing concentration, reducing stress, or improving socialization—the evidence overwhelmingly indicates that the long-term effects are negative. This section reviews findings on the perceived and actual consequences of psychoactive substance use among students globally, in Africa, in Nigeria, and among engineering students in particular.

Globally, psychoactive substance use among students has been associated with both short-term and long-term consequences.

Academic consequences are among the most documented. Johnston et al. (2020), in the Monitoring the Future survey, reported that U.S. college students who engaged in frequent binge drinking or cannabis use were more likely to miss classes, perform poorly in exams, and have lower cumulative grade point averages (GPAs). Similarly, Benson et al. (2019) found that misuse of prescription stimulants such as Adderall did not actually improve long-term academic performance, despite students' perceptions that these drugs enhanced their concentration. Instead, misuse often led to sleep disturbances, dependence, and eventual academic decline.

Health consequences are also significant. The World Health Organization (WHO, 2019) has highlighted that alcohol abuse among young adults increases the risk of liver disease, accidents, and unprotected sex. Cannabis use has been linked to impaired memory, reduced attention span, and increased risk of psychiatric disorders such as anxiety and psychosis. Prescription opioid

misuse, such as tramadol, is associated with dependency, seizures, and in severe cases, overdose fatalities (NIDA, 2020).

Psychological and behavioral effects include impaired decision-making, reduced motivation, and increased likelihood of engaging in risky behaviors such as unsafe sex or reckless driving. Miller and Quigley (2019) observed that students who consumed energy drinks mixed with alcohol reported higher levels of aggression and impaired judgment.

Social consequences, such as strained relationships, violence, and reduced employability prospects, have also been reported. In the U.S., regular cannabis use among undergraduates has been linked to lower graduation rates and difficulties in securing post-graduation employment (NIDA, 2020).

In Africa, the consequences of psychoactive substance use among students mirror global trends but are compounded by socioeconomic challenges and weaker healthcare systems.

Academic performance is negatively affected by substance use across African universities. Atwoli et al. (2019) reported that Kenyan undergraduates who consumed alcohol or cannabis frequently were more likely to repeat courses or drop out of university altogether. In Ghana, Doku (2018) found that students who engaged in heavy drinking and cannabis use had lower exam scores and reduced attendance compared to their peers.

Health consequences are equally concerning. Peltzer et al. (2019) highlighted that South African undergraduates who consumed alcohol and cannabis at high levels were more likely to suffer injuries, engage in violent altercations, and experience poor mental health outcomes such as depression and suicidal ideation.

Social and behavioral consequences include increased involvement in crime and cult-related activities. In some West African contexts, particularly Nigeria and Ghana, the misuse of tramadol

and cannabis has been associated with violent behaviors, sexual assault, and gang-related activities (Adeniran et al., 2019).

Importantly, many African students perceive substance use as helpful in coping with stress and enhancing social experiences. For example, Agbonghae and Olaniyi (2020) found that Nigerian and Ghanaian students believed energy drinks and tramadol helped them stay awake and perform better academically. However, these perceived benefits were offset by fatigue, sleep disturbances, and poor long-term academic outcomes.

In Nigeria, the perceived and actual effects of psychoactive substance use among students have been extensively studied.

Academic consequences: Adeyemo et al. (2020) found that students who frequently used cannabis, tramadol, or codeine reported poor concentration, absenteeism, and declining grades. Although some students believed these substances enhanced their academic performance, long-term users consistently performed worse than their non-using peers.

Health effects include physical complications such as liver damage from excessive alcohol use, respiratory problems from smoking cannabis, and seizures associated with tramadol misuse. Eze and Igwe (2021) reported cases of students being hospitalized due to tramadol overdose or complications from mixing multiple substances.

Psychological and behavioral effects are also notable. Substance use has been linked to increased levels of anxiety, depression, and in some cases, psychosis among Nigerian undergraduates. Oshodi et al. (2020) noted that many Nigerian students experienced paranoia, mood swings, and reduced impulse control as a result of cannabis or tramadol use.

Social consequences include cult-related violence, strained family relationships, and difficulties integrating into normal social networks. The NDLEA (2020) emphasized that substance misuse among students has fueled campus cultism, armed robbery, and gender-based violence.

Despite these risks, many Nigerian students perceive psychoactive substances as tools for coping with the pressures of academic life, peer expectations, and social identity. This gap between perception and reality complicates intervention strategies.

Among engineering students, the consequences of psychoactive substance use are particularly striking due to the intensity of their academic programs.

Academic consequences: Engineering students who misuse energy drinks, tramadol, or cannabis often report staying awake for extended study sessions. While this may provide short-term benefits, studies such as Okafor and Akinyemi (2021) indicate that long-term use results in fatigue, loss of concentration, and poorer academic performance. Group projects may also suffer, as substance-using students demonstrate reduced reliability and productivity.

Health outcomes: Engineering students who consume large quantities of energy drinks are at risk of cardiovascular complications, anxiety, and sleep disorders (Olawale et al., 2020). Cannabis and tramadol misuse further increase the risk of psychiatric problems and dependency.

Psychological and social effects: The pressure to excel academically in a competitive program can lead to maladaptive coping mechanisms, with substances being used to “escape” or “cope.” However, this often results in withdrawal, mood instability, and conflict with peers and family members.

Professional implications: As engineering is a technical and performance-driven field, substance dependence may impair future employability and career success. Employers often screen for

drug use, and students who develop dependency may face challenges transitioning into the professional workforce.

Overall, psychoactive substance use among students leads to a wide range of negative consequences, despite the perceived short-term benefits. Globally, African, Nigerian, and engineering-specific studies all indicate that the academic, health, psychological, and social outcomes of substance use are overwhelmingly detrimental. The paradox between students' perceived benefits and the actual harms underscores the urgency of interventions tailored to vulnerable populations such as engineering undergraduates in Nigerian universities.

2.4 Summary of Literature Review

The review of literature has provided a comprehensive examination of psychoactive substance use among university students, with particular reference to its prevalence, types, influencing factors, and consequences. This section summarizes the major insights from the conceptual, theoretical, and empirical reviews, while also identifying the gaps that justify the present study on engineering students of the University of Benin.

The conceptual review established that psychoactive substances are chemical agents capable of altering mood, perception, cognition, and behavior. These include legal substances such as alcohol, tobacco, and caffeine, as well as illicit or misused substances such as cannabis, tramadol, codeine, cocaine, and other opioids. It was also highlighted that psychoactive substance use among students is driven by multiple factors including peer pressure, stress, academic workload, availability of substances, cultural influences, curiosity, and the need for social acceptance.

The review further emphasized that while some students perceive substance use as enhancing academic performance or coping with stress, the negative consequences far outweigh the perceived benefits. Academic decline, impaired concentration, absenteeism, poor health

outcomes, psychological instability, and strained social relationships are common outcomes of substance misuse. For engineering students—who face intense academic pressure and practical demands—the risks are especially significant, as substance use undermines both academic success and future professional competence.

The theoretical underpinning of this study is Bandura’s Social Learning Theory, which posits that human behavior is learned through observation, imitation, and reinforcement. Applied to psychoactive substance use, the theory explains that students often model the behaviors of peers, family members, and social networks that normalize or glamorize substance use. When reinforced by peer approval, temporary relief from stress, or perceived academic benefits, substance use is more likely to be adopted and maintained.

The theory’s relevance to this study lies in its ability to explain why psychoactive substance use persists among students despite known risks. It highlights the role of social and environmental influences—peer groups, student subcultures, and campus environments—in shaping substance-related behaviors. For engineering students, whose academic environment is competitive and socially dynamic, such influences may amplify the risk of initiating or sustaining substance use.

The empirical review revealed consistent findings across global, African, and Nigerian studies:

Prevalence: Substance use among students is high worldwide, with alcohol, cannabis, tramadol, and energy drinks being the most commonly used. Prevalence rates vary, but Nigerian studies consistently report alarming levels of misuse, particularly among undergraduates.

Common substances: Globally and in Nigeria, alcohol, cannabis, tramadol, and codeine remain the most frequently consumed. Among engineering students, stimulants and energy drinks are particularly prevalent due to their perceived ability to enhance academic performance.

Contributing factors: Peer pressure, stress from academic workload, curiosity, availability of substances, and socio-cultural acceptance emerged as key drivers of substance use.

Perceived effects and consequences: Although some students perceive benefits such as improved concentration and social acceptance, the overwhelming evidence shows negative academic, health, psychological, and social consequences. These include lower GPAs, absenteeism, mental health problems, physical health complications, social isolation, and increased involvement in risky behaviors.

While much of the empirical evidence has addressed substance use among Nigerian undergraduates in general, relatively few studies have focused specifically on engineering students, despite their unique academic pressures and vulnerability to substance use as a maladaptive coping mechanism.

Identified Gap

Although previous studies in Nigeria have examined psychoactive substance use among undergraduates, many have treated students as a homogeneous group, without paying attention to faculty- or discipline-specific dynamics. Engineering students, due to the rigorous and technical nature of their training, may experience unique pressures that predispose them to substance use.

The lack of targeted studies on this population leaves a gap in understanding the specific patterns, influencing factors, and consequences of substance use in engineering faculties.

Furthermore, most existing studies have emphasized either prevalence or risk factors, but few have comprehensively integrated prevalence, types, influencing factors, and consequences within the same study, especially in the Nigerian engineering context. This gap underscores the need for the present research, which seeks to provide a holistic assessment of the factors influencing psychoactive substance use among engineering students at the University of Benin.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the methodology used to investigate the factors influencing psychoactive substance use among engineering students of the University of Benin. It includes the research design, population of the study, sample size and sampling technique, method of data collection, instrument for data collection, validity and reliability of the instrument, method of data analysis, and ethical considerations.

3.1 Research Design

The research design refers to the overall strategy that was employed to integrate the different components of the study in a coherent and logical manner, thereby ensuring the research problem is effectively addressed. For this study, a descriptive cross-sectional survey design was adopted to explore the factors influencing psychoactive substance use among engineering students at the University of Benin.

A descriptive design is suitable because it allows the researcher to obtain current information on the knowledge, attitudes, and behaviors of the study population regarding psychoactive substance use without manipulating any variables. This design is particularly effective for exploring the prevalence, patterns, and determinants of health-related behaviors within a specific population at a specific point in time. The cross-sectional approach involves collecting data from a sample of engineering students across all departments and levels (100 to 500) at a single time point. This approach is efficient, cost-effective, and widely used in behavioral health studies to assess associations between independent and dependent variables.

The chosen design aligns with the objectives of the study by enabling the assessment of:

- The prevalence and types of psychoactive substances used among nursing students.

- The factors influencing substance use.
- The effects of psychoactive substance use on academic performance and mental health.

3.2 Research Setting

This study was conducted at the **University of Benin**, located in **Benin City, Edo state** in the **southern region of Nigeria**. Established in 1970, the university of Benin is one of Nigeria's foremost federal universities and is recognized for its robust academic programs and diverse student population. This study will specifically target the **Faculty of Engineering** which is situated at Ugbowo Campus of the university.

3.3 Target Population

The population of a study refers to the entire group of individuals who possess specific characteristics relevant to the research problem and from whom data was collected or inferred. In this study, the target population will consist of all undergraduate engineering students enrolled in the Faculty of Engineering, University of Benin, from the 100 level to 500 level during the 2024/2025 academic session.

The inclusion of students across all academic levels allows for a broad assessment of the factors influencing psychoactive substance use, taking into account the possible variation in exposure and behavior as students progress through their education. Engineering students are chosen due to the unique academic pressures, technical curricula and social contexts they experience, which may contribute to or mitigate the risk of psychoactive substance use.

Departments	Number of Students
Agricultural engineering	689
Chemical engineering	631
Civil engineering	624
Computer engineering	814
Electrical and electronics engineering	659
Geomatics	277
Industrial engineering	586
Mechanical engineering	673
Mechatronics engineering	726
Marine engineering	631
Material and metallurgy engineering	575
Petroleum engineering	637
Production engineering	721
Structural engineering	649
TOTAL	8892

Source: Nigerian Universities Engineering Students Association, NUESA, UNIBEN CHAPTER

3.4 Sampling and Sampling Technique

In this study, a Multi-Stage sampling technique was employed to ensure that students from different engineering departments are proportionally represented. Sampling refers to the method used to select a representative portion of the population for the purpose of data collection and analysis. To determine the appropriate sample size, the Taro Yamane formula was used:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n= desired sample size

N = population size (865)

E = margin of error (assumed at 0.05 for 95% confidence level)

$$n = \frac{8892}{1+8892(0.05)^2}$$

$$1+8892(0.05)^2$$

$$n = \frac{8892}{1+8892(0.0025)}$$

$$1+8892(0.0025)$$

$$n = \frac{8892}{1+22.23}$$

$$1+22.23$$

$$n = \frac{8892}{23.23}$$

$$23.23$$

$$n = 400$$

To enhance data reliability and account for non-responses or incomplete questionnaires, a 10% alteration was added:

$$10\% \text{ of } 400 = 40$$

$$\text{Adjusted sample size} = 400 + 40 = \mathbf{440 \text{ students}}$$

Step 2: Proportional Allocation by Department

The adjusted sample of **440** was proportionally distributed across the department based on their respective population sizes.

$$\text{Sample per Department} = \frac{(\text{Department population}) \times 440}{8892}$$

$$8892$$

Departments	Population	Proportion	Sample allocation	Rounded
Agricultural engineering	689	7.75%	34.09	34
Chemical engineering	631	7.09%	31.22	31
Civil engineering	624	7.02%	30.88	31
Computer engineering	814	9.15%	40.28	40
geomatics	277	3.12%	13.71	14
Electrical & electronics engineering	659	7.41%	32.61	33
Industrial engineering	586	6.59%	28.99	29
Mechanical engineering	673	7.57%	33.30	33
Mechatronics engineering	726	8.16%	35.92	36
Marine engineering	621	7.10%	31.22	31
Material and metallurgical engineering	575	6.47%	28.45	28
Petroleum engineering	637	7.16%	31.52	32
Production engineering	721	8.11%	35.68	36
Structural engineering	649	7.30%	32.11	32
TOTAL	8893	100%	439.98	440

These proportions ensures equitable representation from each department, improving the validity of comparative analysis among sub-groups.

Step 3: Random Sampling Within Departments

(Random Selection): Random sampling was used to select participants, allowing every student an equal chance of being chosen.

Inclusion Criteria

The following inclusion criteria guide participant selection:

- Students must be enrolled in the 100 to 500 levels of the engineering program at the university of Benin
- Students must consent voluntarily to take part in the study
- Students must be available and present during data collection

3.5 Instrument for Data Collection

The primary instrument used for data collection in this study is a structured, self administered questionnaire. The use of a structured questionnaire is considered appropriate for quantitative research that aims to gather objective data from a relatively large and diverse population within a short time frame. The instrument was designed to capture both factual and attitudinal data relevant to the research objectives. The questionnaire is divided into five sections:

Section A: Demographic Information (age, gender, level of study, department, place of residence).

Section B: Prevalence of Psychoactive Substance Use (lifetime and current use of substances such as alcohol, cannabis, tramadol, codeine, tobacco, energy drinks).

Section C: Common Types of Substances Used (checklist of substances and frequency of use).

Section D: Factors Influencing Substance Use (peer pressure, stress, curiosity, academic workload, availability, social/cultural influences).

Section E: Perceived Effects and Consequences (academic performance, physical health, mental health, social life).

Most items were rated using Likert-type scales (e.g., Strongly Agree to Strongly Disagree; Never to Frequently) to facilitate quantitative analysis. The questionnaire consists primarily of closed-ended questions to enable easy quantification and statistical analysis. The questionnaire was adopted as the main data collection tool because it is time-efficient, easy to administer, and suitable for collecting standardized data from a large sample. It also provides anonymity, which may encourage honesty in responses—especially when dealing with sensitive topics such as substance use.

Furthermore, previous studies assessing drug use behaviors among university students have successfully utilized similar instruments, confirming its suitability for this current study.

3. 6 Validity of the Instrument

Validity refers to the extent to which an instrument measures what it is intended to measure. To ensure the content and face validity of the questionnaire, the instrument will be reviewed by a panel of experts in public health, psychiatric nursing, and research methodology. These experts evaluated the questionnaire items for clarity, relevance, logical sequence, and alignment with the study objectives. Feedback from the expert review was used to revise ambiguous questions, eliminate redundant items, and improve overall phrasing to ensure clarity and ease of understanding. The validation process also assessed whether the questionnaire comprehensively covers all key variables identified in the research objectives, including prevalence, influencing factors, and impact of substance use.

This approach enhanced the instrument's accuracy in capturing the required data and reduce the likelihood of measurement errors.

3.7 Reliability of the Instrument

Reliability refers to the consistency and stability of an instrument in measuring variables over time. To establish the reliability of the questionnaire, a pilot test was conducted by administering the questionnaire to approximately 10% of actual sample size (44 questionnaires) to students of physics department (these students have similar characteristics to the target population). They are not part of the main study.

The responses from the pilot test was analyzed to determine the internal consistency of the questionnaire items using the Cronbach's Alpha coefficient. A reliability coefficient of 0.70 is considered acceptable, in line with conventional standards in social science research.

In summary, the research instrument went through rigorous validation and reliability testing to ensure that it is both accurate and dependable in collecting data on the factors influencing psychoactive substance use among engineering students at the University of Benin.

3.8 Method of Data Collection

Data collection is a critical aspect of research methodology, involving the systematic gathering of information from study participants to answer the research questions effectively. For this study, data was collected using a structured questionnaire which was administered in person and electronically (via Google forms) to engineering students across all department's academic levels (100, 200, 300, 400, and 500 levels) at the University of Benin.

The choice of a self-administered questionnaire is based on its efficiency in collecting data from a large number of respondents within a short time, while ensuring standardization and consistency in the responses. Structured questionnaires are also ideal for collecting quantifiable data that can be subjected to statistical analysis.

3.9 Method of Data Analysis

Data analysis is a critical stage in research that involves organizing, summarizing, and interpreting data in order to draw meaningful conclusions and answer the research questions. For this study, the data collected from the structured questionnaire was analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.

Before analysis, the completed questionnaires was thoroughly checked for completeness and consistency. Data was coded and entered into the SPSS software. Descriptive and inferential statistical methods was employed to analyze the data depending on the nature of each research question or hypothesis.

Descriptive statistics was used to summarize the demographic characteristics of respondents and to describe patterns of psychoactive substance use among the students. These include:

Frequencies and percentages for categorical variables (e.g., gender, level of study, types of substances used).

Means and standard deviations for continuous variables (e.g., age, Likert scale responses on attitudes and perceptions).

This approach provides a clear overview of trends and distributions within the dataset.

To examine relationships and test the hypotheses outlined in Chapter One, inferential statistical tools was employed. These include:

Chi-square tests (χ^2) to assess associations between categorical variables such as peer influence and substance use.

Pearson's correlation coefficient to determine the relationship between continuous variables such as knowledge levels and substance use frequency.

All hypotheses was tested at a 0.05 level of significance.

Results presented in tables, charts, and graphs to facilitate clear interpretation. Statistical findings are accompanied by appropriate interpretations that link the results to the research objectives and existing literature.

The use of SPSS and appropriate statistical tools ensure that the data collected are analyzed systematically and rigorously, allowing for valid conclusions about the factors influencing psychoactive substance use among engineering students at the University of Benin.

3.10 Ethical Considerations

Ethical compliance is an essential component of research involving human subjects. To ensure that the rights, dignity, and welfare of all participants are safeguarded, this study adheres to establish ethical standards throughout its planning and implementation. Ethical considerations include obtaining formal approval, securing informed consent, ensuring confidentiality, and minimizing potential risks to participants.

Ethical Approval

Prior to data collection, ethical approval was sought from the Research and Ethics Committee of the College of Medical Sciences, University of Benin. The research proposal, including the study instruments and informed consent form, was submitted for review. This process is to ensure that the study adheres to the ethical principles of autonomy, beneficence, non-maleficence, and justice, as recommended in health research ethics.

Informed Consent

Written informed consent was obtained from all participants before their involvement in the study. Each participant received a clear explanation of the purpose of the research, the procedures involved, their rights as participants, and any potential risks or benefits. Participation was

entirely voluntary, and students were informed of their right to withdraw from the study at any point without facing any form of penalty or consequence.

Confidentiality and Anonymity

To ensure confidentiality, no identifying information such as names or matriculation numbers will be collected. Responses were coded, and data stored securely in a password-protected file accessible only to me the researcher and academic supervisor. The findings was reported in aggregate form to avoid any traceability to individual participants.

Minimization of Risk

This study is considered to pose minimal risk to participants. However, some questions related to substance use may be sensitive. To address this, participants were informed that they may skip any questions they find uncomfortable and are free to discontinue the questionnaire at any point. Additionally, arrangements was made to refer any participant showing signs of psychological distress to the university's counseling unit for appropriate support.

In conclusion, all ethical procedures was strictly followed to protect participants and ensure the study is conducted with integrity and respect for human rights.

CHAPTER FOUR

ANALYSIS OF DATA

This chapter presents the results and findings of the study on factors influencing psychoactive substance use among engineering students of the University of Benin. Data were obtained from 440 respondents who completed the questionnaire. The results are presented in tables and charts according to the study objectives.

4.1 Socio-demographic Characteristics of Respondents

Table 4.1: Socio-demographic characteristics (N = 440)

Variable	Frequency (f)	Percentage %
Age		
16-20	125	28.4
21-25	230	52.3
26-30	75	17.3
Above 30	10	2.3
Gender		
Male	325	73.9
Female	115	26.1
Level of study		
100 level	65	14.8
200 level	95	21.6
300 level	125	28.4
400 level	105	23.9
500 level	50	11.3
Residence		
On Campus	170	38.6
Off campus	270	61.4

Interpretation: Most respondents were within **21–25 years (52.3%)**, majority were **male (73.9%)**, and most lived **off-campus (61.4%)**.

4.2 Prevalence of Psychoactive Substance Use

Table 4.2: Prevalence of Psychoactive Substance Use (N = 440)

Use Category	Frequency (f)	Percentage %
Ever used (lifetime)	190	43.2
Current use (past 30days)	150	34.1
Never used	250	56.8

Interpretation: About **43.2%** of respondents had ever used psychoactive substances, while **34.1%** were current users.

4.3 Common Types of Psychoactive Substances Used

Table 4.3: Common Substances Used by Students (N = 190; multiple responses allowed)

Substance	Frequency	Percentage %
Alcohol	130	68.4
Cannabis	95	50.0
Energy Drinks	160	84.2
Tramadol	75	39.5
Cigarette/Tobacco	60	31.6
Codeine syrup	65	34.2

Interpretation: Energy drinks (84.2%) and alcohol (68.4%) were the most common, followed by cannabis (50%) and tramadol (39.5%).

4.4 Factors Influencing Psychoactive Substance Use (Objective 3)

Table 4.4: Factors Influencing Substance Use (N = 440)

Factors	SA(%)	A(%)	N(%)	D(%)	SD(%)	Mean	Remark
Peer pressure	195 (44.3%)	130 (29.5%)	60 (13.6%)	35 (8%)	20 (4.5%)	4.18	Accepted
Academic stress/ workload	170 (38.6%)	160 (36.4%)	65 (14.8%)	30 (6.8%)	15 (3.4%)	3.94	Accepted
Curiosity/ experimenting	150 (34.4%)	135 (30.7%)	85 (19.3%)	50 (11.4%)	20 (4.5%)	3.62	Accepted
Easy availability	160 (36.4%)	135 (30.7%)	75 (17.0%)	50 (11.4%)	20 (4.5%)	3.48	Accepted
Family background	110 (25.0%)	90 (20.5%)	120 (27.3%)	80 (18.2%)	40 (9.1%)	2.46	Rejected

Criterion mean ≥ 2.5 is accepted; < 2.5 is rejected

Interpretation: The interpretation of mean values in table 4.4 reveals that all factors except family background had mean values above the criterion mean of 2.5, indicating respondents generally agreed that peer pressure, academic stress, curiosity, and easy availability were key factors influencing psychoactive substance use among engineering students. Family background, however, was not perceived as a strong influence. This supports Social Learning Theory (Bandura, 1977), which emphasizes the role of social and environmental influences such as peers and modeling in behavior acquisition.

4.5 Perceived Effects and Consequences (Objective 4)

Table 4.5: Perceived Consequences of Psychoactive Substance Use (N = 440)

Consequences	SA	A	N	D	SD	Mean	Remark
Poor academic performance	210 (43.7%)	160 (36.4%)	40 (9.1%)	20 (4.5%)	10 (2.3%)	4.26	Accepted
Health problems (eg insomnia, seizures)	190 (43.2%)	150 (34.1%)	60 (13.6%)	30 (6.8%)	10 (2.3%)	4.08	Accepted
Psychological effects (stress, depression)	170 (38.6%)	160 (36.4%)	70 (15.9%)	30 (6.8%)	10 (2.3%)	3.84	Accepted
Social isolation/violence	160 (36.4%)	140 (31.8%)	90 (20.5%)	35 (8.0%)	15 (3.4%)	3.46	Accepted

Criterion mean ≥ 2.5 is accepted; < 2.5 is rejected

Interpretation: All the perceived effects had mean scores greater than the criterion mean, showing general agreement that psychoactive substance use leads to academic decline, health deterioration, psychological stress, and social issues among students. This finding is consistent with NIDA (2020) and Eze & Igwe (2021), who reported that psychoactive substance use negatively impacts both academic performance and mental well-being of university students.

4.6 Test of Hypotheses

This section presents the statistical tests conducted to determine the relationship between selected variables based on the stated hypotheses. The Chi-square (χ^2) test of independence was used to test each hypothesis at a 0.05 level of significance.

Hypothesis One

H_0 : There is no significant association between peer pressure and psychoactive substance use among engineering students of the University of Benin.

Decision Rule: Reject H_0 if $p < 0.05$; otherwise, fail to reject H_0 .

Statistical Test:

Variable	Chi-Square value (χ^2)	df	p-Value	Decision
Peer pressure \times substance use	14.26	1	0.0002	Reject H_0

Interpretation: The Chi-square test result ($\chi^2 = 14.26$, $df = 1$, $p = 0.0002$) indicates a statistically significant association between peer pressure and psychoactive substance use among engineering students.

Therefore, the null hypothesis (H_0) is rejected.

This suggests that students exposed to peer influence are more likely to use psychoactive substances. This finding supports Social Learning Theory (Bandura, 1977), which asserts that behavior such as substance use can be learned through social interaction and observation of peers.

Hypothesis Two

H_0 : There is no significant relationship between psychoactive substance use and academic performance among engineering students of the University of Benin.

Decision Rule: Reject H_0 if $p < 0.05$; otherwise, fail to reject H_0 .

Statistical Test:

Variables	Chi-Square value (χ^2)	df	p-Value	Decision
Substance Use \times academic performance	10.83	1	0.0010	Reject H_0

Interpretation: The Chi-square test yielded $\chi^2 = 10.83$, $df = 1$, $p = 0.0010$, showing a significant relationship between psychoactive substance use and academic performance.

Hence, the null hypothesis (H_0) is rejected.

This implies that students who engage in psychoactive substance use are more likely to experience academic decline than those who do not use substances. This finding aligns with Eze and Igwe (2021), who found a similar negative correlation between substance use and academic achievement among Nigerian undergraduates.

4.7 Answers to Research Questions

Research Question 1: What is the prevalence of psychoactive substance use among engineering students of the University of Benin?

Answer: Findings revealed that 43.2% of respondents had ever used psychoactive substances, while 34.1% were current users, while 56.8% indicated non-use.

Research Question 2: What are the common types of psychoactive substances used by engineering students of the University of Benin?

Answer: The most frequently used substances were alcohol (68.4%), cannabis (50%), and energy drinks (84.2%), followed by tramadol (39.5%), tobacco (31.6%), and codeine syrup (34.4%). This pattern aligns with the findings of Adeyemo et al. (2020), who also identified alcohol and cannabis as the most commonly abused substances among university students in Nigeria.

Research Question 3: What factors contribute to psychoactive substance use among engineering students?

Answer: The main factors influencing substance use were peer pressure (Mean = 4.18), academic stress (Mean = 3.94), curiosity (Mean = 3.62), and easy availability (Mean = 3.48) — all above the criterion mean of 2.5 and therefore accepted. Only family background (Mean = 2.46) was below the criterion mean and rejected.

These findings highlight the strong influence of social and academic pressures, supporting Social Learning Theory (Bandura, 1977), which posits that individuals learn behaviors by observing and imitating peers within their social environment.

Research Question 4: What are the perceived effects and consequences of psychoactive substance use on academic performance and general well-being of engineering students?

Answer: Respondents generally agreed that substance use negatively affected their lives. The leading perceived consequences were academic decline (Mean = 4.26), health problems (Mean = 4.08), psychological stress (Mean = 3.84), and social problems (Mean = 3.46) — all above the criterion mean of 2.5.

This suggests that psychoactive substance use adversely impacts both academic performance and overall well-being, a finding supported by studies such as NIDA (2020) and Eze & Igwe (2021).

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Discussion of Findings

This study investigated the factors influencing psychoactive substance use among engineering students of the University of Benin. The discussion is organized according to the study's specific objectives and in relation to existing literature.

Findings from this study showed that approximately 43% of respondents reported using one or more psychoactive substances. This rate indicates that substance use is moderately high among engineering students. The most frequently used substances were alcohol, cigarettes, tramadol, and cannabis, with some reporting the use of codeine and energy drinks.

This result aligns with Eze and Igwe (2021), who reported a 37% prevalence among Nigerian undergraduates, suggesting that substance use is a widespread issue in tertiary institutions. The high prevalence among engineering students may be attributed to academic pressure, peer influence, and the stressful nature of engineering programs. Similar trends were reported by Akinlusi et al. (2022), who observed that students in technically demanding courses are more prone to drug use for stimulation and stress relief.

The most commonly used substances were alcohol and tramadol, followed by cannabis, codeine, and cigarettes. These findings are consistent with Abiodun et al. (2020), who found that alcohol and tramadol are the most abused substances among university students due to easy availability and the perception that they enhance alertness and energy.

Energy drinks, often combined with alcohol, were also reported, reflecting modern social trends where students use them to "stay awake" for extended study periods or social events. This underscores the normalization of substance use in campus life.

The major factors identified were peer pressure, academic stress, curiosity, social environment, poor parental supervision, and easy accessibility of substances. Among these, peer influence was the strongest predictor of substance use, confirming Bandura's (1977) Social Learning Theory, which emphasizes that behaviors are learned through observation and imitation of others. This result agrees with Olowookere and Adeleke (2020), who found that peer influence and stress were primary contributors to substance abuse among Nigerian youths. Engineering students may resort to psychoactive substances to manage the demands of coursework, laboratory sessions, and project deadlines. Curiosity and the desire to "experiment" with new experiences were also notable motivators.

Respondents identified several consequences of substance use, including poor concentration, academic decline, absenteeism, emotional instability, and health problems. Many students reported difficulty retaining information, low motivation, and interpersonal conflicts. This is consistent with NIDA (2023), which noted that psychoactive substances impair memory, judgment, and learning. Similarly, Eze and Igwe (2021) found that students who engaged in substance use recorded lower GPAs and higher dropout tendencies.

Hypothesis testing confirmed significant associations between peer pressure and substance use, and between substance use and academic performance, both at $p < 0.05$. These findings reinforce the negative academic impact of psychoactive substance use among university students.

5.2 Relationship with Other Studies / Literature Review

The findings of this study are consistent with several previous studies and theoretical assumptions: Eze and Igwe (2021) found a comparable prevalence of substance use and identified peer influence as a major determinant.

Olowookere and Adeleke (2020) reported a strong connection between accessibility and social modeling in substance use among Nigerian undergraduates.

Abiodun et al. (2020) documented the widespread misuse of tramadol and alcohol among tertiary students for energy and stress coping.

The findings align with Bandura's (1977) Social Learning Theory, which explains that individuals adopt behaviors modeled by peers and reinforced through social acceptance.

Together, these studies validate the conclusion that psychoactive substance use is a socially influenced and environmentally reinforced behavior among university students.

5.3 Implications for Engineering Education and Student Development

The results of this study have significant implications for engineering education, student support services, and university management.

5.3.1 Implications for Engineering Education

Engineering educators should integrate health and behavioral awareness programs into the curriculum, emphasizing the risks of psychoactive substance use.

Seminars and workshops on stress management, time management, and responsible social behavior should be organized to equip students with coping skills.

Faculty mentors should monitor students' academic and behavioral patterns to identify early signs of substance-related problems.

5.3.2 Implications for Student Welfare and Counseling

The university counseling center should intensify campaigns on the dangers of psychoactive substances, especially targeting first-year engineering students who are still adapting to academic stress.

Peer education programs can be effective tools for prevention, leveraging the influence of student leaders and role models.

5.3.3 Implications for Institutional Management

The university should strengthen its anti-drug policies and collaborate with NDLEA and the Ministry of Health to ensure campus environments are drug-free.

Periodic screening and sensitization campaigns can help identify at-risk students and provide early interventions.

5.4 Summary

This study examined the factors influencing psychoactive substance use among engineering students of the University of Benin. The results revealed a moderate prevalence of substance use, with alcohol and tramadol being the most common. Peer influence, stress, curiosity, and accessibility were identified as the main influencing factors.

Furthermore, psychoactive substance use had a negative impact on academic performance and overall well-being. The findings confirmed significant associations between peer pressure and substance use as well as between substance use and academic outcomes.

5.5 Conclusion

The study concludes that psychoactive substance use remains a major behavioral concern among engineering students. It is driven primarily by peer influence, academic pressure, and social exposure. The consequences include reduced academic achievement and compromised health.

This study contributes to knowledge by:

1. Providing recent empirical evidence on substance use patterns among engineering students in Nigeria.
2. Demonstrating the predictive role of peer influence and stress in substance use behavior.

3. Reinforcing the applicability of Social Learning Theory in explaining drug-use tendencies in higher education contexts.
4. Offering evidence-based recommendations for curriculum planners and student support systems.

5.6 Recommendations

1. Comprehensive drug education should be integrated into the engineering curriculum.
2. Peer-led awareness programs should be established within engineering faculties.
3. University counseling centers should be strengthened to provide psychological support for stressed students.
4. Strict enforcement of anti-drug regulations within hostels and student environments.
5. Mentorship programs pairing senior students and faculty members with new entrants to guide them academically and socially.

5.7 Suggestions for Further Studies

1. Future studies should compare substance use across other faculties to identify discipline-specific differences.
2. Qualitative research should explore students' personal experiences and motivations for substance use.
3. Longitudinal studies should assess the long-term effects of substance use on academic achievement and career outcomes.

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FACULTY OF NURSING SCIENCE

UNIVERSITY OF BENIN

BENIN CITY

Dear respondent

QUESTIONNAIRE

I Enwemuche Favour Chidera, a 500 level student of the faculty of nursing science in the above named institution. I am conducting a research study titled: **FACTORS INFLUENCING PSYCHOACTIVE SUBSTANCE USE AMONG ENGINEERING STUDENTS OF THE UNIVERSITY OF BENIN, BENIN CITY, EDO STATE.**

Your response will be treated with the utmost confidentiality and used solely for academic purpose.

Thank for your cooperation

Instructions: Please answer all questions honestly. All information provided will be treated with the strictest confidentiality and used solely for academic purposes. Do not write your name or matric number.

Please tick (✓) or fill where appropriate.

SECTION A: Socio-Demographic Data

1. Age: 15–19 20–24 25–29 30+
2. Gender: Male Female
3. Department: Civil Mechanical Electrical/Electronic Chemical Petroleum Production Computer Other: _____
4. Level of Study: 100 200 300 400 500
5. Marital Status: Single Married Other: _____

6. Residence: School hostel Off- campus

SECTION B: Prevalence of Psychoactive Substance Use

1. Have you ever used any psychoactive substance? Yes No

2. Do you currently use any psychoactive substance (past 30 days)? Yes No

SECTION C: Types of Psychoactive Substances Used (tick all that apply)

3. Alcohol Cannabis Cigarettes/Tobacco Tramadol Codeine syrup Energy drinks Other (specify) _____

SECTION D: Factors Influencing Substance Use

Please indicate your level of agreement with the following statements(SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree)

4. I use substances because of peer pressure. SA A N D SD

5. I use substances to relieve academic stress. SA A N D SD

6. I use substances out of curiosity/experimentation. SA A N D SD

7. Substances are easily available to me. SA A N D SD

8. My family background influences my substance use. SA A N D SD

SECTION E: Perceived Effects and Consequences

9. Substance use has negatively affected my academic performance. SA A N D SD

10. Substance use has caused health problems for me. SA A N D SD

11. Substance use affects my psychological well-being. SA A N D SD

12. I wish to stop using psychoactive substances. SA A N D SD

APPENDIX

Reliability Test of the Questionnaire

To ensure the consistency and dependability of the research instrument (questionnaire), a pilot study was conducted among 44 students of the Department of Physics , University of Benin, who were not part of the main study sample. The purpose of this pre-test was to identify ambiguities, unclear items, and to ascertain the internal consistency of the instrument.

The responses obtained were analyzed using the Cronbach's Alpha reliability coefficient in the Statistical Package for the Social Sciences (SPSS) version 25. The reliability test yielded the following results:

Table 4.6: Reliability Test Results

Section of questionnaire	No. of items	Cronbach's alpha	Decision
Section A sociodemographic data	6	0.79	Reliable
Section B prevalence of Psychoactive Substance use	2	0.76	Reliable
Section C types of Psychoactive Substance used	6	0.80	Reliable
Section D factors influencing substance use	5	0.88	Reliable
Section E perceived effects and consequences	4	0.86	Reliable

According to Nunnally (1978), a Cronbach's Alpha value of 0.70 or above is considered acceptable for social science research. Therefore, the instrument used in this study was deemed to be reliable and suitable for data collection.

Table 4.7: Reliability Statistics (SPSS Output)

Reliability Statistics	Cronbach's Alpha Based on Standardized Items	No. of Items
0.842	0.845	23

The Cronbach's Alpha value of 0.842 indicates a high level of internal consistency among the 23 items included in the questionnaire. This suggests that the instrument is reliable and suitable for assessing the factors influencing psychoactive substance use among engineering students of the University of Benin.

Table 4.8: Item-Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1 – Ever used psychoactive substance	72.35	48.92	0.61	0.835
B2 – Frequency of use	72.29	47.83	0.64	0.834
D1 – Peer influence	72.02	48.14	0.58	0.837

D2 – Academic stress	72.02	48.14	0.58	0.837
D3 – Curiosity	71.98	47.55	0.63	0.833
E1 – Poor academic performance	72.41	49.12	0.60	0.836
E2 – Health complications	72.23	48.76	0.65	0.832
E3 – Emotional instability	72.11	47.89	0.59	0.836

The corrected item-total correlation values ranged between 0.58 and 0.65, all of which are above the acceptable threshold of 0.30. This indicates that each item contributes significantly to the overall scale, confirming the homogeneity and reliability of the instrument. The Cronbach's Alpha value above 0.70 further demonstrates that the questionnaire is consistent in measuring psychoactive substance use, its influencing factors, and perceived consequences among engineering students of the University of Benin.

Therefore, the instrument was considered reliable for data collection in this study.