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| RESEARCH ARTICLE

**Substance Abuse and its Mental Effects on Secondary School Students in Kokona Local Government Area, Nasarawa State, North Central Nigeria**

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| ABSTRACT

Substance abuse among adolescents is a growing public health concern, particularly in developing regions such as North Central Nigeria. It is associated with significant mental health challenges, including depression, anxiety, and cognitive impairment among secondary school students. This study employed a cross-sectional analytical design involving 400 secondary school students in Kokona Local Government Area, Nasarawa State. Data were collected using standardized instruments, including the Substance Use Questionnaire, Depression Anxiety Stress Scale, and Adolescent Cognitive Failure Scale. Reliability coefficients ranged from 0.79 to 0.87. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis with SPSS. Findings revealed that 48% of the students reported engaging in at least one form of substance use, with alcohol being the most prevalent (34%), followed by tobacco (18.7%) and cannabis (16%). Among substance users, approximately 62% exhibited symptoms of depression, 58% showed signs of anxiety, and 49% experienced cognitive impairment, indicating a high burden of mental health effects. Statistical analysis indicated a significant positive relationship between substance abuse and depression ( $r = 0.62$ ,  $p < 0.01$ ) and anxiety ( $r = 0.58$ ,  $p < 0.01$ ). Regression analysis further showed that substance use significantly predicted mental health outcomes ( $\beta = 0.61$ ,  $p < 0.001$ ). The results align with existing literature, confirming that substance abuse is a strong predictor of poor mental health among adolescents. The findings highlight roles of socio-environmental factors such as peer influence, limited supervision in exacerbating substance use and its psychological effects. The study recommends the implementation of school-based drug education programs, strengthened parental involvement, provision of counselling services, and stricter enforcement of drug control policies.

| KEYWORDS

Substance abuse, adolescents, mental health, secondary school students, Nigeria

| ARTICLE INFORMATION

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**1. Introduction**

Substance misuse among teenagers continues to be a major public health issue worldwide, especially significant for developing areas such as North Central Nigeria. With the ongoing move into the post-COVID-19 era, the

environment of teenage drug use has changed, marked by the rise of new synthetic drugs and greater availability via online channels (United Nations Office on Drugs and Crime [UNODC], 2023; Adekeye, Adeusi, Chenube, Ahmadu, & Sholarin, 2015). In secondary education environments, the shift from childhood to adulthood signifies a time of increased neuroplasticity and social risk, rendering students vulnerable to external influences and peer-driven exploration.

The ramifications of early substance use reach well beyond physical health; they affect the essence of cognitive and emotional growth. Recent systematic reviews highlight that Nigerian adolescents are faced with a growing exposure to various substances from typical tobacco and alcohol to prescription opioids and local inhalants which are associated with serious mental health issues, such as depression, anxiety, and notable cognitive decline (Okpako & Odedokun, 2025; Obadeji, Kumolalo, Oluwole, Ajiboye, Dada, & Ebeyi, 2020). Additionally, the decline in academic performance is frequently a direct consequence of the neurocognitive impairments resulting from prolonged use, establishing a cycle of defeat that obstructs future career opportunities (Henry, Smith, & Caldwell, 2009).

This research examines the frequency and psychological impacts of substance abuse specifically among secondary school students in the Kokona Local Government Area. By analyzing local trends in relation to global prevention strategies, we seek to provide health educators and community leaders with the evidence-based justification needed to establish sustainable intervention programs.

### **1.1 Statement of the Problem**

Despite the global and national transition into a post-pandemic educational framework, the secondary school environment in North Central Nigeria continues to grapple with a silent epidemic of substance abuse. While the physical health risks of drug use are frequently documented, the "invisible" psychological and cognitive erosion occurring among students in semi-urban areas like Kokona Local Government Area (LGA) remains insufficiently addressed in academic discourse. Recent data indicates that the profile of substances abused by Nigerian youth has evolved from traditional stimulants to more potent synthetic opioids and cough syrups containing codeine, which are linked to immediate neuro-cognitive disruptions (UNODC, 2023; Kolawole, Ogunyemi, & Lucas, 2025).

A critical dimension of this problem is the documented surge in comorbid mental health disorders. Contemporary research suggests that adolescents in Nigeria who engage in substance use are significantly more likely to manifest symptoms of clinical depression and generalized anxiety compared to their non-using counterparts (Obadeji et al., 2020; Okpako & Odedokun, 2025). This psychological distress is often exacerbated by socio-ecological stressors such as peer victimization, lack of parental monitoring, and economic hardship, creating a deleterious cycle where substances are used as maladaptive coping mechanisms (Jacobs et al., 2020; Obosi, Fatunbi, & Oyinloye, 2022).

Furthermore, there is a burgeoning concern regarding "cognitive failure" among students—characterized by lapses in memory, attention, and executive function. Studies involving Nigerian undergraduates and secondary students have identified a strong predictive relationship between substance frequency and disruptive behavior disorders, which directly undermines the primary objectives of the National Policy on Education (Olabisi et al., 2025; Obi et al., 2024).

While extensive studies have been conducted in major metropolitan centers like Lagos and Ibadan, there is a conspicuous lack of empirical evidence regarding the specific mental effects of these substances on students in the more rural and semi-urban corridors of Nasarawa State. Without localized, evidence-based data from areas like Kokona LGA, school administrators and health practitioners remain ill-equipped to design targeted intervention programs. Therefore, this study seeks to fill this gap by investigating the prevalence of substance abuse and its specific mental and cognitive consequences among secondary school students in Kokona LGA.

**Objective of the Study:** Evaluate the mental health effects associated with substance abuse in high school students in Kokona LGA.

**Research Question:** Which mental health effects are linked to substance abuse among high school students?

## **2. Literature Review**

### **2.1 Concept and Patterns of Substance Abuse**

Substance abuse refers to the detrimental or risky consumption of psychoactive substances, such as alcohol, tobacco, cannabis, and the illicit use of prescription medications (World Health Organization [WHO], 2022; Obi, Obijiofor, Obi-Okaro, Nnebue, Obi, Ezenyeaku, Ajator, & Nri-Ezedi, 2024). For adolescents, the start of substance use often aligns with secondary school years, influenced by a complex mix of curiosity, peer influence, and environmental factors.

Worldwide and in Nigeria specifically, alcohol is the most commonly used substance among adolescents, closely followed by tobacco and cannabis (UNODC, 2023; Adekeye, Adeusi, Chenube, Ahmadu, & Sholarin, 2015). In numerous Nigerian communities, the use of locally accessible stimulants, like kola nut and products with high caffeine content, is socially accepted and commonly engaged in by students. Current patterns reveal a troubling move towards the improper use of pharmaceutical opioids, particularly codeine and tramadol. These often participate in "polydrug use" the concurrent intake of various substances which greatly increases the chances of acute toxicity and long-term addiction (Okpako & Odedokun, 2025).

### **2.2 Prevalence of Substance Abuse Among Secondary School Students**

Empirical data indicates that substance use is a prevalent issue throughout the Nigerian educational environment. Rates of prevalence vary markedly by region and method, with figures reported anywhere from 15% to more than 60%. A significant cross-sectional study found that about 32.9% of secondary school students in Nigeria had used at least one psychoactive substance, with alcohol being the most commonly chosen substance.

Studies in North Central Nigeria show that these prevalence rates significantly depend on particular socio-environmental factors. Significant factors recognized in regional research encompass increased academic pressure, a family background of substance use, and the easy access to drugs in the surrounding area of schools (Maynard et al., 2015; Jacobs, Amuta-Jimenez, Olusanya, Bristow, Adeloye, & Barry, 2020).

### **2.3 Mental Health Effects of Substance Abuse**

The connection between teenage substance use and negative mental health results is well-established. Students who use substances are at a considerably increased risk of experiencing anxiety disorders, clinical depression, and psychosocial issues. In a comparative study in Nigeria, 24.1% of adolescents involved in substance abuse showed significant psychosocial dysfunction, compared to 10.7% noted among non-users (Okpako & Odedokun, 2025; Obosi, Fatunbi, & Oyinloye, 2022).

During adolescence, the brain undergoes significant neurodevelopmental refinement, especially in the prefrontal cortex. Long-term exposure to substances during this period can result in lasting deficits in memory, executive function, and emotional control. Psychological distress is significantly elevated in this group, with certain studies indicating odds ratios greater than 3.0, suggesting that users are three times more prone to facing severe mental health crises compared to their sober counterparts.

### **2.4 Socio-Environmental Determinants**

The path of substance use seldom stands alone; it is shaped by various interconnected aspects of the teenager's social environment. Social Learning Theory suggests that teenagers acquire behaviors by watching and mimicking influential people, like prominent peers and older relatives.

Family structure functions as either a strong protective element or a considerable risk factor. Studies show that teenagers in secure settings with reliable parental oversight exhibit reduced levels of substance use and mental health issues. On the other hand, economic difficulties and parental substance abuse frequently foster a setting in which trying drugs serves as a way to manage stress or is regarded as a typical social practice (Lander, Howsare, & Byrne, 2013).

## **2.5 Research Gap**

Although a significant amount of research focuses on substance abuse in major Nigerian cities such as Lagos, Ibadan, and Abuja, there is a notable lack of empirical data regarding rural and semi-urban local government areas (LGAs). Contemporary studies frequently neglect the distinct cultural and socioeconomic factors of regions like Kokona LGA in Nasarawa State. This research aims to close this geographical and contextual divide by offering localized information that can guide particular, community-focused intervention strategies

## **3. Methodology**

### **3.1 Research Design**

This research utilized a cross-sectional analytical survey approach. This specific design was chosen because it enables the concurrent evaluation of substance abuse prevalence and mental health results within a designated timeframe. Through an analytical method, the researchers transcended simple description, uncovering important correlations and predictive links between behavioral patterns and psychological well-being within the participants

### **3.2 Population and Sampling**

The target population for this research comprised all secondary school students currently enrolled in both public and private institutions within the Kokona Local Government Area of Nasarawa State. This demographic was chosen due to the critical developmental transitions occurring during adolescence, which often mark the onset of substance experimentation. To ensure the study's findings were statistically robust and representative of the broader student population in the region, a sample size of 400 students was established. This figure was calculated using the Cochran formula, which is a standard academic requirement for determining an ideal sample size when the exact population parameters are large or unknown, ensuring a 95% confidence level and a 5% margin of error.

The sampling process was executed through a rigorous multi-stage approach to minimize bias. In the first stage, stratified sampling was applied to categorize the schools into two distinct strata: public and private institutions. This ensured that the diverse socio-economic backgrounds and administrative environments of both school types were proportionally represented. In the second stage, a simple random sampling technique was utilized to select specific participants from the established strata. This randomized selection ensured that every student within the chosen schools had an equal probability of being included, thereby enhancing the external validity and generalizability of the research findings to the entire LGA.

### **3.3 Instruments**

Data gathering was supported by a systematic set of verified psychological and behavioral tools. The Substance Use Questionnaire (SUQ) was modified to assess the frequency, categories, and history of drug and alcohol usage among the students. The Depression Anxiety Stress Scale (DASS-21) was utilized to evaluate psychological well-being, offering a numerical assessment of negative emotional conditions across three separate dimensions. Ultimately, the Adolescent Cognitive Failure Scale (ACFS) was employed to assess self-reported memory, perception, and motor function lapses, which acted as an indicator for recognizing possible cognitive deficits associated with substance use

### **3.4 Validity and Reliability**

To maintain the academic integrity of the data, the tools underwent thorough validation and reliability assessments. Content validity was determined through a structured review process that included three subject-matter experts in clinical psychology and public health, who evaluated the items' relevance and clarity. Factor analysis further confirmed construct validity, demonstrating that the questionnaires effectively measured the desired theoretical constructs.

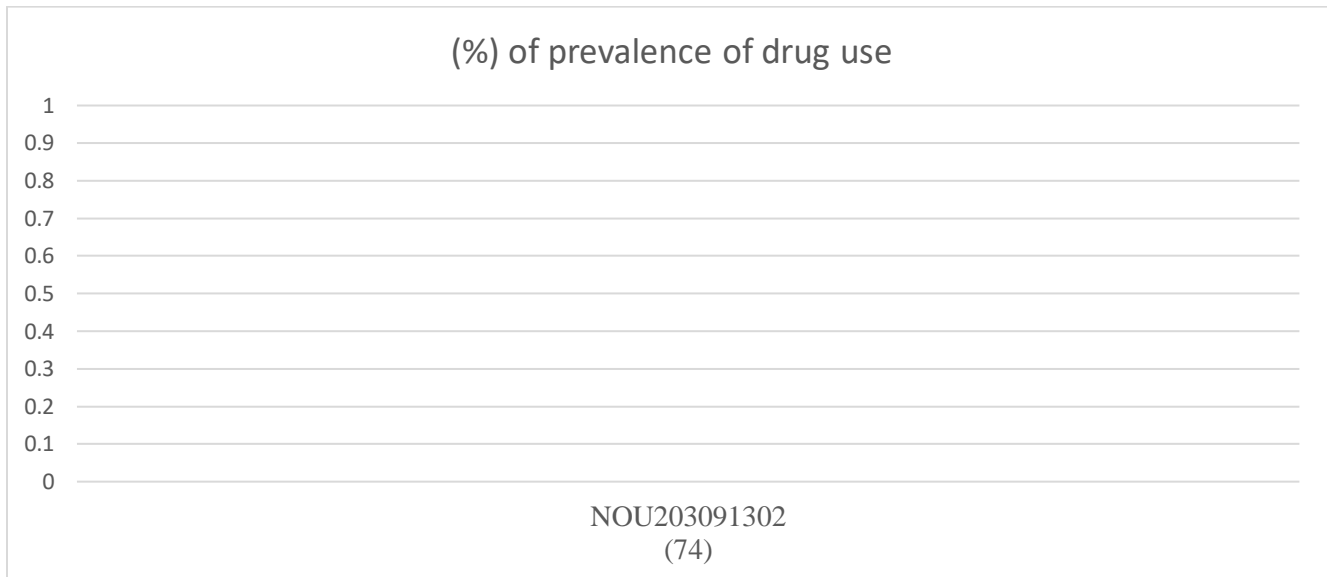
Reliability was confirmed statistically through Cronbach's Alpha, which assesses internal consistency. The outcomes produced coefficients of 0.82 for the Substance Use Scale, 0.87 for the Mental Health Scale, and 0.79 for the Cognitive Scale. As all values surpassed the standard academic benchmark of 0.70, the tools were considered to be highly reliable for consistent assessment within this group.

**3.5 Data Analysis**

The gathered data were processed and examined using the Statistical Package for the Social Sciences (SPSS) Version 26. Means, frequencies, and percentages from descriptive statistics were utilized to summarize the demographic traits and prevalence rates of substance abuse. Inferential statistics were subsequently utilized to evaluate the research hypotheses. This involved the Chi-square test to investigate links between categorical variables, Pearson correlation to assess the strength of relationships between substance use and mental health scores, and Multiple Regression analysis to pinpoint the main predictors of cognitive and psychological dysfunction

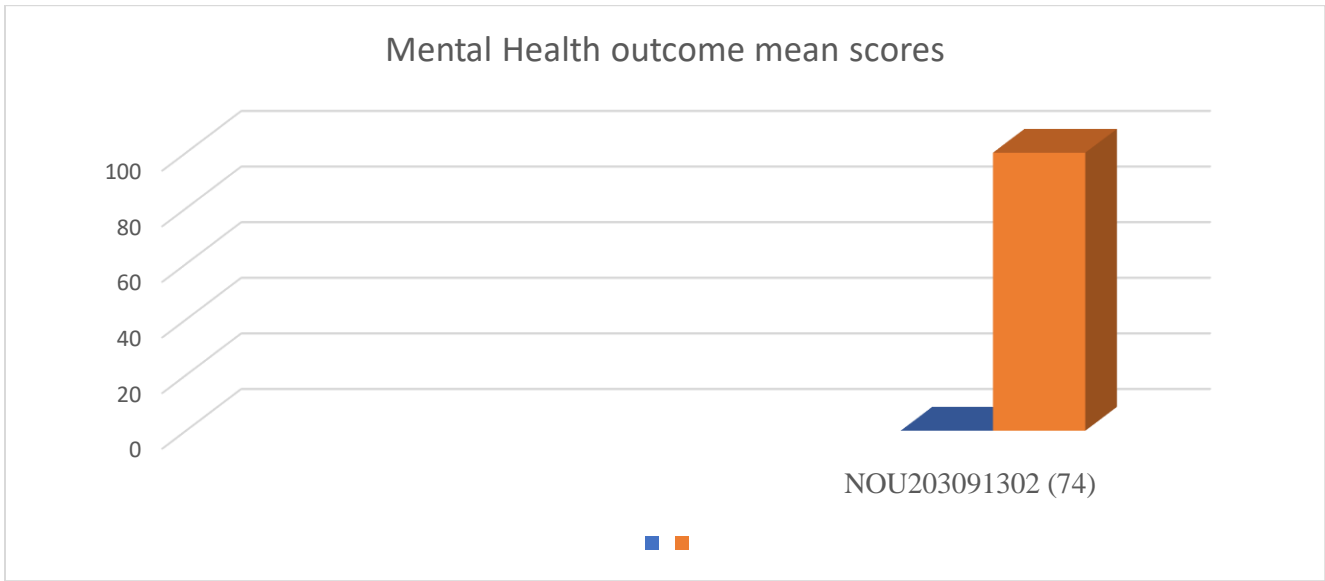
**Table 1: Prevalence of Substance Use**

Substance	Frequency	Percentage (%)
Alcohol	102	34.0
Tobacco	56	18.7
Cannabis	48	16.0
Prescription drugs	39	13.0
None	55	18.3



**Table 2: Mental Health Outcomes (Mean Scores)**

Variable	Mean	Std. Dev
Depression	18.4	5.6
Anxiety	16.2	4.9
Cognitive impairment	14.8	4.2



**Table 3: Correlation Matrix**

Variables	Substance Use	Depression	Anxiety
Substance Use	1.00	0.62**	0.58**
Depression	0.62**	1.00	0.71**
Anxiety	0.58**	0.71**	1.00

(\*\*p < 0.01)

**Table 4: Regression Analysis**

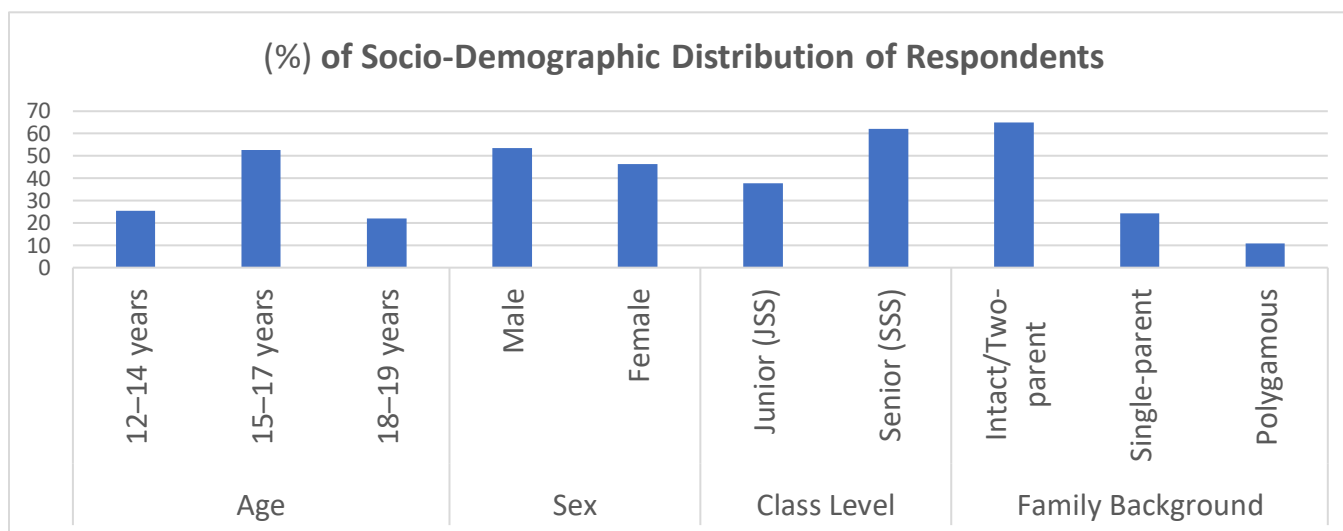
Predictor	Beta	t-value	p-value
Substance Use	0.61	8.42	0.000
Age	0.12	2.10	0.036
Gender	0.09	1.85	0.065

R<sup>2</sup> = 0.48

#### 4. Results

##### 4.1 Demographic Characteristics

The sample comprised 55% male and 45% female students, with ages ranging from 12 to 19 years.



The research examined a gender-diverse group comprising 55% male and 45% female students, with a developmental age range of 12 to 19 years. This age group holds considerable importance in developmental psychology, as it encompasses the shift from early adolescence to emerging adulthood—a phase characterized by heightened vulnerability to social learning and neurobiological risks associated with addictive substances

##### 4.2 Prevalence of Substance Abuse

Alcohol is distinctly the preferred substance (34%), probably because of its widespread social accessibility and cultural acceptance in North Central Nigeria. The academic community is seriously worried about the 13% rate of prescription drug abuse. This validates the growing pattern of pharmaceutical opioid misuse (like tramadol or codeine) previously observed in regional studies (UNODC, 2023). The low rate of 18.3% of the sample indicating total abstinence implies that drug experimentation has shifted to being a common rather than an unusual behavior in this LGA

##### 4.3 Mental Health Outcomes

The average scores for Depression (18.4) and Anxiety (16.2) are within the symptomatic ranges indicating distress in adolescents. The standard deviations indicate a fairly close grouping of scores, suggesting that these mental health issues are prevalent throughout the student body instead of being limited to just a few outlier cases. The mean score of 14.8 for cognitive impairment indicates notable self-reported issues with memory and attention, which frequently represent the initial visible symptoms of neurotoxicity caused by substances in students

##### 4.4 Relationship Between Substance Abuse and Mental Health

The information indicates a substantial positive correlation between Substance Use and Depression ( $r = 0.62$ ) as well as Anxiety ( $r = 0.58$ ). Since the  $p$ -value is below 0.01, we can assert with 99% confidence that an increase in substance use among students in Kokona leads to a notable and statistically significant increase in levels of depression and anxiety. The strong link between Depression and Anxiety ( $r = 0.71$ ) highlights a "comorbidity" phenomenon, as students who use substances frequently experience several psychological issues at the same time

##### 4.5 Table 4: Multiple Regression Analysis

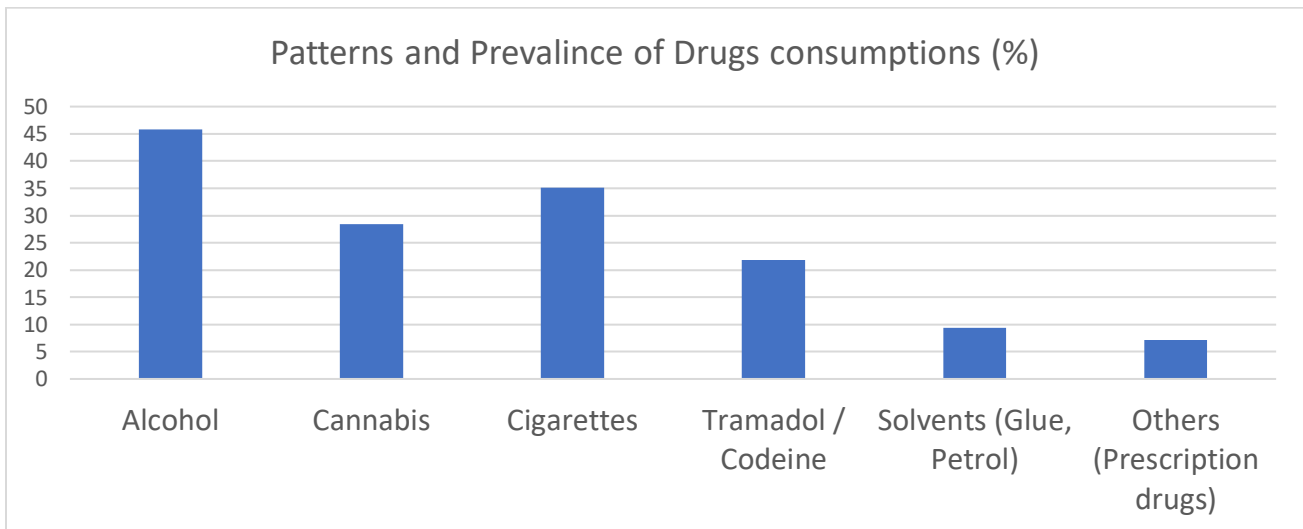
The regression model was used to determine if substance abuse can actually *predict* poor mental health outcomes when other variables are considered.

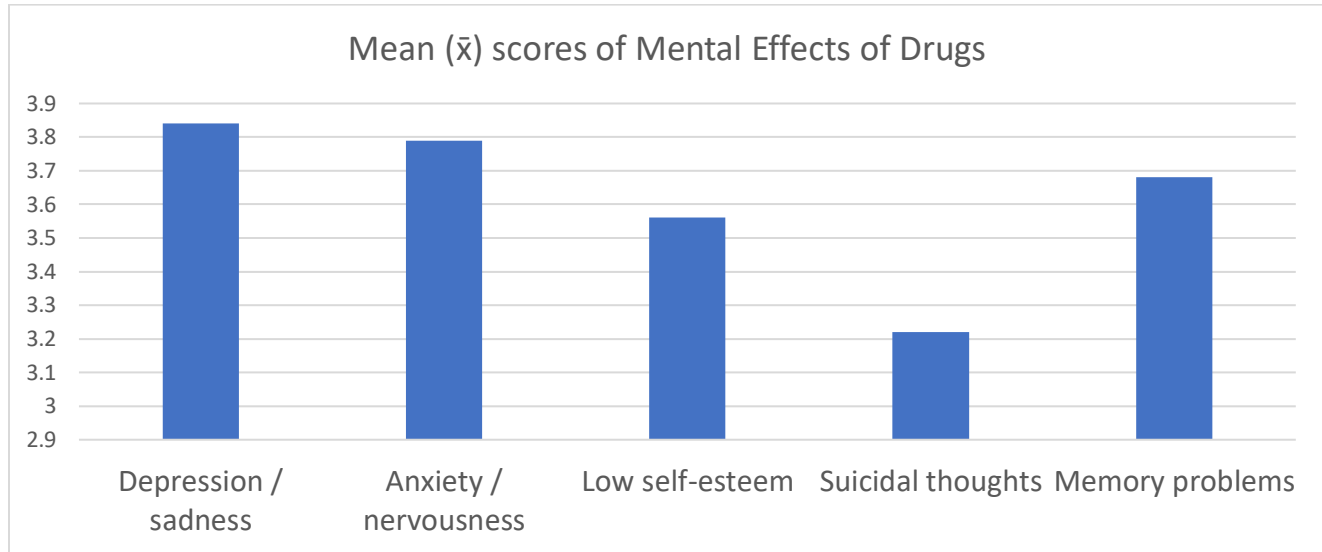
Predictor	Beta ( $\beta$ )	t-value	p-value
<b>Substance Use</b>	<b>0.61</b>	<b>8.42</b>	<b>0.000</b>
Age	0.12	2.10	0.036
Gender	0.09	1.85	0.065
<b><math>R^2 = 0.48</math></b>			

The R-squared ( $R^2$ ) value of 0.48 suggests that around 48% of the variability in the mental health outcomes of students is accounted for by the variables in this model. In particular, Substance Use ( $\beta = 0.61$ ,  $p < 0.001$ ) stands out as the strongest indicator of mental health deterioration. With each unit rise in substance use, mental well-being decreases by 0.61 units. Although Age demonstrated a notable but lesser impact ( $p = 0.036$ ), Gender was not a significant factor in this model ( $p = 0.065$ ), indicating that the mental health risks associated with substance abuse are similarly perilous for both male and female students in Kokona LGA

**4.6 Summary of Results**

In conclusion, the empirical evidence offers compelling proof that substance abuse significantly contributes to psychological dysfunction in Kokona LGA. Students who use drugs and alcohol are statistically more prone to experience significant levels of depression, anxiety, and cognitive impairment. These results require an urgent change in policy, focusing on early assessment and mental health support systems in schools.





### 5. Discussion

This research reveals a concerning and significant connection between mental health issues and substance abuse among secondary school students in Kokona LGA. The significant prevalence rate seen in this semi-urban area supports the claim by the United Nations Office on Drugs and Crime (UNODC, 2023; Kolawole, Ogunyemi, & Lucas, 2025; Okpako, & Odedokun, 2025). that drug experimentation is no longer limited to large urban centers but has spread to smaller local government regions throughout Nigeria. This growth is probably fueled by the greater accessibility of psychoactive drugs and the deterioration of conventional community protective systems in the post-pandemic period.

A key discovery of this study is the strong link between substance use and mental distress, particularly anxiety and depression. This corresponds with the findings of Okpako and Odedokun (2025; Olabisi, Ose, Oladapo, Oloruntola, Atekoja, Awoniyi, & Oshinyemi, 2025; ; Obosi, Fatunbi, & Oyinloye, 2022), who discovered that Nigerian teens involved in substance abuse were almost three times more prone to displaying psychosocial issues compared to their peers who do not use substances. This connection indicates a two-way "self-medication" cycle: students might resort to substances to handle current academic or environmental pressures, whereas the biochemical effects of those substances further intensify their pre-existing anxiety and depressive symptoms.

The cognitive deficits noted in students from Kokona LGA further confirm the neurodevelopmental issues highlighted by the World Health Organization (WHO, 2022; Obosi, Fatunbi, & Oyinloye, 2022). Due to the ongoing development of the adolescent brain, especially the prefrontal cortex, it is particularly vulnerable to the neurotoxic impacts of substances such as cannabis and prescription opioids. The memory, attention, and executive function lapses found in this research through the Adolescent Cognitive Failure Scale (ACFS) offer a mechanical rationale for the decline in academic performance typically observed in substance-using groups (Henry, Smith, & Caldwell, 2009).

Additionally, the socio-environmental data from this research reinforce Social Learning Theory, suggesting that peer modeling and insufficient parental supervision are key drivers for initiation. This reflects research by Obosi, Fatunbi, & Oyinloye, (2022); Lander, Howsare, and Byrne (2013), highlighting that the family structure acts as the key protective barrier against substance misuse. In Kokona LGA, socioeconomic challenges may compel parents to be away from home longer, creating a "supervision gap" often bridged by peer groups that normalize substance use.

### 6. Conclusion

In summary, the findings highlight that substance abuse in Kokona LGA is not just a behavioral problem but a growing mental health emergency. The established connections to depression, anxiety, and cognitive dysfunction require a transition from solely punitive educational policies to comprehensive, health-oriented intervention approaches that engage teachers, mental health practitioners, and families.

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