Prevalence and Predictors of Substance Use Among Adolescents in The Fishing Settlements in Southern Ijaw LGA, Bayelsa State, Nigeria

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Abstract
Background: *Substance use among adolescents has become a major public health concern globally, with significant health, social, and economic implications. The problem is particularly worrisome in rural and riverine communities, where poverty, limited education, and weak social structures expose adolescents to early substance initiation. This study examined the prevalence, patterns, and predictors of substance use among adolescents in the fishing settlements of Southern Ijaw Local Government Area (LGA), Bayelsa State, Nigeria.*
Methodology: *A cross-sectional design was used, involving 420 adolescents selected through a multistage sampling technique. Data were collected using a structured, self-administered questionnaire and analyzed with SPSS version 25 using descriptive and inferential statistics (Chi-square tests and logistic regression).*
Results: *The prevalence of substance use among respondents was 76.9%, indicating a high level of exposure. Alcohol (36.8%) and cannabis (33.3%) were the most commonly used substances, followed by tobacco and prescription opioids. More than half of the users (51.4%) initiated use between ages 14 and 15. While most respondents demonstrated moderate knowledge of the risks of substance use, attitudes toward consumption were largely permissive; 57.9% reported enjoying substance use, and 61.4% indicated willingness to use substances to fit in with peers. Chi-square analysis showed that socio-demographic factors such as age, sex, and education were not significantly associated with substance use ($p>0.05$). However, marital status ($p=0.043$) and involvement in "hustling" or informal income-generating activities were significant predictors.*
Conclusion *Substance use among adolescents in Southern Ijaw fishing settlements is alarmingly high, driven primarily by peer influence, family behavior, and social environment rather than socio-demographic factors. The findings highlight an urgent need for community-based preventive interventions, parental involvement, school-based education, and youth empowerment programs.*

Keywords: *Adolescents, Substance use, Predictors, Prevalence, Fishing settlements, Bayelsa State, Nigeria*

1. Introduction

Substance use among adolescents has emerged as a pressing global public health issue, threatening social stability and the development of young people. The World Health Organization (WHO, 2022) defines substance use as the harmful or hazardous consumption of psychoactive substances, including alcohol, tobacco, and illicit drugs. Globally, it is estimated that over 35 million people suffer from substance use disorders, with tobacco, alcohol, and illicit drugs accounting for about 12% of all deaths worldwide (Pessima et al., 2023).

Adolescents, defined by WHO as individuals aged 10–19 years, represent a vulnerable population in whom experimentation and risk-taking behaviors are common (Gasa et al., 2022). During this transitional period, peer influence, identity exploration, and environmental exposure often lead to initiation into substance use. The consequences are far-reaching, ranging from academic decline, violence, and crime to long-term health complications such as addiction and mental illness (Egharevba, 2021; Mutiso et al., 2022).

In Nigeria, substance use among adolescents has escalated over the last two decades. The National Drug Use Survey (NDLEA, 2021) reported that approximately 14.3 million Nigerians between ages 15–64 use psychoactive substances, with an increasing number of adolescents involved. Alcohol, cannabis, and tobacco are the most common substances, followed by prescription opioids and stimulants (Abikoye et al., 2020; Dabirilagba et al., 2022). In the South-South region, where Bayelsa State is located, cultural tolerance of alcohol and limited access to education and employment exacerbate the problem.

In rural and riverine areas such as the fishing settlements of Southern Ijaw LGA, adolescents face unique vulnerabilities. These communities are often isolated, with limited recreational facilities, poor access to education, and high unemployment rates. Poverty, peer group pressure, and cultural acceptance of alcohol use during social events such as burials and festivals contribute to early initiation (Eze et al., 2017; Umaru et al., 2018). Despite this, few empirical studies have explored substance use in such marginalized environments.

This study therefore investigates the prevalence and predictors of substance use among adolescents in the fishing settlements of Southern Ijaw LGA, Bayelsa State. Understanding the socio-demographic and environmental factors influencing substance use will provide an evidence base for designing targeted interventions and youth development programs in similar settings.

2. Methods

Study setting

Southern Ijaw Local Government Area (LGA) is situated in Bayelsa State, in the South-South part of Nigeria. Its administrative headquarters is located in Oporoma, positioned at latitude 4°48′17″N and longitude 6°04′44″E. This region is notable for its vast coastal stretch of approximately 60 kilometers along the Bight of Benin, contributing to its unique ecological landscape and economic activities. The area is rich in mangrove swamps and wetlands, playing a critical role in sustaining the biodiversity of the Niger Delta. Southern Ijaw's geographical position makes it significant for fishing, agriculture, and oil exploration, which are key components of the local economy.

Study design and Study Population

A community-based, cross-sectional survey was conducted among adolescents aged 10–19 years residing in selected fishing settlements using structured questionnaire. Data were analysed using

SPSS for both descriptive (mean, percentage and frequency) and inferential statistics (Chi square, odd ratio and binary regression).

Sample size determination and sampling Technique

The calculated sample size of 420 (minimum sample size of 374 plus 10% for non-response) was estimated using the Leslie Kish formula for estimating a single proportion at a 95% confidence level, a 5% error margin, and 42% prevalence (Williams *et al.,* 2023). A multistage sampling method was employed: settlements were randomly selected, followed by systematic selection of households, and finally, random selection of one eligible adolescent per household.

Data collection instruments and procedures

Data were collected using a structured, pre-tested questionnaire from August 5th to September 30th 2024 comprising sections on socio-demographics, knowledge, attitudes, and substance use behavior. The instrument was adapted from WHO's Global School-based Student Health Survey (GSHS) and similar Nigerian studies, ensuring cultural appropriateness. Content validity was ensured through expert review, while reliability was tested via a pilot study in a similar setting (Cronbach's $\alpha = 0.84$).

Statistical Analysis

Data were analyzed using SPSS version 25. Descriptive statistics (frequencies, means, percentages) summarized variables. Chi-square and logistic regression were used to identify associations between independent variables (socio-demographic and contextual factors) and substance use, with significance set at $p<0.05$.

3. Results

The socio-demographic distribution of the respondents as seen in Table 4.1 showed that the majority (44.8%) were between 13–15 years, followed by 29.5% aged 16–19 years and 25.7% aged 10–12 years. Most of the adolescents were males (76.9%), while females accounted for 23.1%. In terms of educational status, 71.4% were in secondary school, whereas 14.3% each were in primary and tertiary institutions. Regarding recent graduation, 64.3% reported no recent graduation while 35.7% indicated otherwise. Ethnically, Ijaw (25.7%), Igbo (22.4%), and Hausa (19.3%) formed the largest groups, with Yoruba (16.0%) and other ethnicities (16.7%) represented. Marital status revealed that the majority were single (64.0%), while 25.7% were married, 5.0% separated, 3.1% divorced, and 2.1% fell into other categories. Christianity were the dominant religion (64.0%), followed by Islam (25.7%), Traditional belief (6.4%), and others (3.8%). Concerning employment status, 44.8% were employed, 25.7% unemployed, 19.3% self-employed, and 10.2% engaged in other forms of work. For family structure, more than half (57.6%) came from monogamous families, 25.7% from polygamous families, 10.2% from kinship, and 6.4% from non-kinship families. On living arrangements, 51.2% lived with both parents, 25.7% with their mother alone, 10.2% with a guardian, while smaller proportions lived with their father alone (6.4%) or friends (6.4%). Parent/guardian's highest education indicated that 38.6% attained secondary education, 25.7% each had primary or tertiary education, while 10.0% had no formal education. Similarly, more than half of parents/guardians (51.2%) were employed, 23.1% were self-employed, 19.3% unemployed, and 6.4% engaged in other occupations.

Table 4.2 presents respondents' knowledge of substance use. Out of the 420 adolescents, 360 (94.5%) were able to identify a substance or drug, while 350 (83.3%) knew the meaning of drug/substance use. Half of the respondents, 210 (50.0%), correctly understood what drug/substance abuse means, while the other half did not. A total of 255 (60.7%) were aware that drug or substance use is harmful, but only 60 (14.3%) knew it could lead to dropping out of school, compared to 360 (85.7%) who were unaware of this consequence. The overall knowledge grading showed that 173 respondents (41.1%) had poor knowledge, 47 (11.1%) demonstrated average knowledge, and 200 (47.6%) had good knowledge of substance use.

Also, Table 4.3 presents the attitudes of respondents towards substance use. A total of 243 (57.9%) reported having enjoyed using substances in the past months, while 177 (42.1%) did not. More than half, 258 (61.4%), indicated they would consider using substances to fit in with peers, while 162 (38.6%) disagreed. Only 71 (16.9%) admitted frequent drug use, whereas 349 (83.1%) denied it. Regarding perceptions, 312 (74.3%) felt it were okay for someone their age to experiment with drugs, and 296 (70.4%) acknowledged that substance use could cause health risks. Additionally, 339 (80.8%) accepted peers' use of substances, while 135 (32.1%) found it easy to refuse when offered substances compared to 285 (67.9%) who found it difficult. A large proportion, 340 (80.9%), linked absence of recreational facilities to increased drug use, 385 (85.2%) associated family problems with substance use, 200 (47.6%) attributed it to lack of education, and 200 (47.6%) to economic hardship. Overall, the attitude score showed that 235 respondents (56.0%) demonstrated a positive attitude towards substance use, while 185 (44.0%) exhibited a negative attitude

Table 4.4 shows the prevalence of substance use among respondents. Out of the total 420 adolescents surveyed, 323 (76.9%) reported that they had used substances, while 97 (23.1%) indicated no history of substance use.

Table 4.5 presents the distribution of substances used by the respondents. Alcohol were the most commonly used substance, reported by 162 respondents (36.8%), followed by cannabis with 140 respondents (33.3%). Other substances reported include tobacco 21 (5.0%), tramadol 6 (1.4%), methamphetamine 4 (1.0%), morphine 2 (0.5%), codeine 10 (2.4%), cocaine 13 (3.1%), crack 3 (0.7%), ecstasy 2 (0.5%), fentanyl 3 (0.7%), gum 2 (0.5%), heroin 3 (0.7%), swinol 1 (0.2%), and others 5 (1.2%). Notably, 43 respondents (10.2%) reported not using any substance.

Table 4.6 shows information on substance use among respondents. The age at which respondents first used substances revealed that the majority, 216 (51.4%), initiated use between ages 14 and 15 years, followed by 94 (22.4%) who started between 10 to 13 years, and 70 (16.7%) who began between 16 to 19 years, while 40 (9.5%) could not recall their age of initiation. In terms of frequency of substance use, 202 respondents (48.1%) reported using substances rarely, 67 (16.0%) used them 2–3 times daily, 48 (11.4%) used them 4–7 times daily, 32 (7.6%) used them countless times per day, while 71 (16.9%) fell into other unspecified categories.

Table 4.7 shows the relationship between socio-demographic characteristics and substance use among respondents. Substance use were more common among those aged 13–15 years (43.3%) and 16–19 years (28.5%) compared to 10–12 years (28.2%), though the association were not statistically significant (p=0.109). Gender were not a determinant, as both males (76.8%) and females (23.3%) reported similar proportions of use (p=0.912). Education level also showed no significant association with substance use (p=0.390), with secondary school students accounting for the majority (70.9%). Ethnicity, marital status, religion, employment status, type of family,

living arrangement, and parents' education and employment were similarly not significantly related to substance use.

However, certain factors showed significant associations. Engagement in common hustles (p=0.026) influenced substance use, with higher prevalence among those involved in "yahoo" (7.1%), farming (18.6%), and fishing (13.0%) compared to those without hustles (37.2%). Knowledge of the harmful effects of substance use were also significant (p=0.032), as 61.9% of users who acknowledged the risks still engaged in use. Peer pressure played an important role, with 64.7% of respondents admitting that peers influenced their substance use, although not statistically significant (p=0.315). Other factors such as dropping out of school (p=0.777), economic hardship (p=0.936), lack of education (p=0.178), and family problems (p=0.815) showed no significant relationship. Overall, predictors such as hustling activities and perception of harm stood out as significant influences on substance use among adolescents in the fishing settlements.

Table 4.8 presented the regression analysis on predictors of substance use among adolescents in the fishing settlements of Southern Ijaw LGA, Bayelsa State, revealed several significant and non-significant factors influencing substance use. As shown in Table 4.8, sex (p = 0.716, OR = 1.113, 95% CI = 0.625–1.983) was not a significant predictor of substance use. However, parents' education showed a significant positive relationship (p = 0.031, OR = 1.725, 95% CI = 1.052–2.828), indicating that adolescents with less educated parents were more likely to engage in substance use. Similarly, having friends who use substances increased the odds of substance use (p = 0.429, OR = 1.300, 95% CI = 0.678–2.493), though not statistically significant. Family members' substance use (p = 0.363, OR = 0.799, 95% CI = 0.492–1.296) and knowledge of substance use (p = 0.810, OR = 1.082, 95% CI = 0.569–2.060) were also not significant predictors. Other factors such as familiarity with substances of abuse (p = 0.427, OR = 1.216, 95% CI = 0.751–1.968), education (p = 0.218, OR = 1.352, 95% CI = 0.837–2.182), peer pressure (p = 0.030, OR = 0.561, 95% CI = 0.332–0.947), and family problems (p = 0.562, OR = 0.861, 95% CI = 0.518–1.429) also showed varying degrees of association. Notably, parental substance use (p = 0.005, OR = 0.424, 95% CI = 0.233–0.770) and economic hardship (p = 0.030, OR = 0.561, 95% CI = 0.332–0.947) were significant predictors, suggesting that adolescents from homes with substance-using parents or facing economic stress were more likely to use substances. Dropping out of school due to substance use (p = 0.465, OR = 0.772, 95% CI = 0.386–1.544) and lack of money (p = 0.303, OR = 1.305, 95% CI = 0.786–2.167) were not statistically significant. Overall, the regression model indicates that parents' education, parental substance use, and economic hardship are the strongest predictors of substance use among adolescents in the study area.

Table 4.1: Distribution of Socio-demographic Characteristics of Respondents N=420

Variable	Frequency	Percentage
Age (years)		
10 – 12	108	25.7
13 – 15	188	44.8
16 – 19	124	29.5
Sex		
Female	97	23.1
Male	323	76.9
Education		

Primary	60	14.3
Secondary	300	71.4
Tertiary	60	14.3
Recent Graduation		
No	270	64.3
Yes	150	35.7
Ethnicity		
Hausa	81	19.3
Igbo	94	22.4
Ijaw	108	25.7
Yoruba	67	16.0
Others	70	16.7
Marital Status		
Divorced	13	3.1
Married	108	25.7
Seperated	21	5.0
Single	269	64.0
Others	9	2.1
Religion		
Christianity	269	64.0
Islam	108	25.7
Traditional	27	6.4
Others	16	3.8
Employment Status		
Employed	188	44.8
Self-employed	81	19.3
Unemployed	108	25.7
Others	43	10.2
Type of Family		
Kinship	43	10.2
Monogamy	242	57.6
Non-kinship	27	6.4
Polygamy	108	25.7

Table 4.1 Cont'd: Distribution of Socio-Demographic Characteristics of Respondents N=420

Variable	**Frequency**	**Percentage**
Current Living Situation		
Both Parents	215	51.2
Father alone	27	6.4

Friend	27	6.4
Guardian	43	10.2
Mother alone	108	25.7
Parent/Guardian's Highest Education		
No formal Education	42	10.0
Primary	108	25.7
Secondary	162	38.6
Tertiary	108	25.7
Parent's Employment Status		
Employed	215	51.2
Self-employed	97	23.1
Unemployed	81	19.3
Others	27	6.4

Table 4.2: Knowledge of the Respondents to Substance Use

Knowledge of Fruit and Vegetables	Correct response		Incorrect response		Total	
	F	%	F	%	F	%
Can you identify a substance/drugs	360	94.5	60	5.5	420	100
Do you know the meaning of drug/substance use	350	83.3	70	16.7	420	100
Do you know what drug/substance abuse means	210	50.0	210	50.0	420	100
Do you know drug/substance use is harmful	255	60.7	165	39.3	420	100
Do you know drug/substance use can make you a school dropout	60	14.3	360	85.7	420	100

Knowledge grade	Frequency	Percentage
Poor (0-39%)	173	41.1
Average (40-59%)	47	11.1
Good (60-100%)	200	47.6
Total	**420**	**100**

Table 4.3: Attitude of the Respondents to Substance Use

Attitude to Substance Use	Positive response		Negative response		Total	
	F	%	F	%	F	%
I have enjoyed using substance in the past months	243	57.9	177	42.1	420	100
I will consider using substances to fit in with my peers	258	61.4	162	38.6	420	100
I use drugs frequently	71	16.9	349	83.1	420	100
Ithink it is okay for someone at my age to experiment with drugs	312	74.3	108	25.7	420	100
I believe substance use can cause health risks	296	70.4	124	29.6	420	100
I think it is okay when my friends or peers use substances	339	80.8	81	19.2	420	100
I find it easy to refuse when someone offers me a substance	135	32.1	285	67.9	420	100
I believe absence of recreational facilities increases my drug use	340	80.9	80	19.1	420	100
I believe family problems trigger my substance use	385	85.2	35	14.8	420	100
I believe lack of education triggers my substance use	200	47.6	220	52.4	420	100
Economic hardship triggers my substance use	200	47.6	220	52.4	420	100

Attitude Score	Frequency	Percentage
Positive Attitude	235	56.0
Negative Attitude	185	44.0
Total	**420**	**100**

Table 4.4: Prevalence of Substance Use among Respondents

Variable	Frequency	Percentage
Ssubstance Use		
Yes	323	76.9
No	97	23.1
Total	**420**	**100**

Table 4.5: Substance Used by the Respondents

Variable	Frequency	Percentage
Alcohol	162	36.8
Cannabis	140	33.3
Cocaine	13	3.1
Codeine	10	2.4
Crack	3	0.7
Ecstasy	2	0.5
Fentanyl	3	0.7
Gum	2	0.5
Heroin	3	0.7
Methamphetamine	4	1.0
Morphine	2	0.5
None	43	10.2
Swinol	1	0.2
Tobacco	21	5.0
Tramadol	6	1.4
Others	5	1.2
Total	**420**	**100**

Table 4.6: Information on Substance use by respondents.

Variable	Frequency	Percentage
Age first used substance		
10 – 13	94	22.4
14 – 15	216	51.4
16 – 19	70	16.7
I don't know	40	9.5
Total	**420**	**100**
Frequency of substance use		
2-3times daily	67	16.0
4-7times daily	48	11.4
Rarely	202	48.1
Countless	32	7.6
Others	71	16.9
Total	**420**	**100**

Table 4.7: Socio-demographic characteristics and substance use among respondents

Age range					4.431	0.109
10-12	17	17.5	91	28.2		
13-15	48	49.5	140	43.3		
16-19	32	33.0	92	28.5		
Total	**97**	**100**	**323**	**100**		
Sex					0.012	0.912
Female	22	22.5	75	23.3		
Male	75	77.3	248	76.8		
Total	**97**	**100**	**323**	**100**		
Level of education						
Primary	16	16.5	44	13.6	1.882	0.390
Secondary	71	73.2	229	70.9		
Tertiary	10	10.3	50	15.5		
Total	**97**	**100**	**323**	**100**		
Ethnicity					2.633	0.621
Hausa	16	16.5	65	20.1		
Igbo	27	27.8	67	20.7		
Ijaw	24	24.7	84	26.0		
Other	14	14.4	56	17.3		
Yoruba	16	16.5	51	15.8		
Total	97	100	323	100		

Marital status					**9.825**	**0.043**
Divorced	6	6.2	7	2.2		
Married	20	20.6	88	27.2		
Others	4	4.1	5	1.5		
Separate	2	2.1	19	5.9		
Single	65	67.0	204	63.2		
Total	**97**	**100**	**323**	**100**		
Religion					**4.774**	0.189
Christianity	65	67.0	204	63.2		
Islam	22	22.7	86	26.6		
Others	1	1.0	15	4.6		
Tradition	9	9.3	18	5.6		
Total	**97**	**100**	**323**	**100**		

Table 4.7 Cont'd.: Socio-demographic characteristics and substance use among respondents

Variables	**Substance Use**					
	No	**No %**	**No**	**Yes %**		
						P value
Employment status					2.239	0.524
Employed	47	48.5	141	43.7		
Other	7	7.2	36	26.6		
Self-employed	16	16.5	65	4.6		
Un-employed	**27**	**27.8**	**81**	**5.6**		
Total	**97**	**100**	**323**	**100**		
Type of family					2.893	0.408
Kinship	6	6.2	37	11.5		
Monogamous	56	57.7	186	57.6		
Non-kinship	**8**	**8.2**	**19**	**5.9**		
Polygamous	27	27.8	81	25.1		
Total	97	**100**	323	**100**		
Who do you live with					4.073	0.396
Both parents	46	47.4	169	52.3		
Father	**3**	**3.1**	**24**	**6.4**		
friend	7	7.2	20	6.4		
Guardian	12	12.4	31	10.2		
Mother	29	29.9	79	25.7		
Total	**97**	**100**	**323**	**100**		
Education of parents					1.292	0.731
No of	8	8.2	34	10.5		
Primary	22	22.7	86	26.6		
Secondary	40	41.2	122	37.8		

Tertiary	27	27.8	81	25.1		
Total	**97**	**100**	**323**	**100**		
Employment status of parents					0.583	0.900
Employed	52	53.6	163	50.5		
Others	7	7.2	20	6.2		
Self-Employed	21	21.6	76	23.5		
unemployed	17	17.5	64	19.8		
Total	**97**	**100**	**323**	**100**		

Table 4.7 Cont'd.: Socio-demographic characteristics and substance use among respondents

Variables	**Substance Use**					
	No	**No %**	**No**	**Yes %**		
						P value
Common hustles					**14.327**	**0.026**
Bunke	15	15.5	35	10.8		
Farming	21	21.6	60	18.6		
Fishing	10	10.3	42	13.0		
Menia	14	14.4	36	11.1		
None	24	24.7	120	37.2		
Robber	8	8.2	7	2.2		
Yahoo	5	5.2	23	7.1		
Total	**97**	**100**	**323**	**100**		
know the meaning of substance use					0.003	0.959
No	16	16.5	54	16.7		
Yes	81	83.5	269	83.3		
Total	**97**	**100**	**323**	**100**		
Agree that substance use is harmful					**8.802**	**0.032**
Moderate	53	36.1	75	23.2		
Not harmful	1	1.0	14	4.3		
Slightly	6	6.2	34	10.5		
Very	65	56.7	200	61.9		
Total	**97**	**100**	**323**	**100**		

Table 4.7 Cont'd.: Socio-demographic characteristics and substance use among respondents

Variables	Substance Use					
	No	No %	Yes No	Yes %		P value
Dropped out of school to substance use					0.080	0.777
No	84	86.6	276	85.4		
Yes	13	13.4	47	14.6		
Total	**97**	**100**	**323**	**100**		
Peer pressure influence substance use					2.309	0.315
No	21	21.6	79	24.5		
Not sure	16	16.5	35	10.8		
Yes	60	61.9	209	64.7		
Total	**97**	**100**	**323**	**100**		
Economic hardship reasons					0.133	0.936
No	35	36.1	115	35.6		
Not sure	15	15.5	55	17.0		
Yes	47	48.5	153	47.4		
Total	**97**	**100**	**323**	**100**		
Lack of education					1.814	0.178
No	45	46.4	175	54.2		
Yes	52	53.6	148	45.8		
Total	97	**100**	323	**100**		
Family problems triggers substance use					0.410	0.815
No	35	36.1	115	35.6		
Not sure	18	18.6	52	16.1		
Yes	44	45.4	156	48.3		
Total	**97**	**100**	323	100		

Table 4.8: Regression analysis on predictors of substance use among respondents

Predictor Variable	P value	OR	95% C.I.	
			Lower	Upper
Sex	0.716	1.113	0.625	1.983
Parents Education	**0.031**	1.725	1.052	2.828
Friends using substance	0.429	1.300	0.678	2.493
Family members substance use	0.363	0.799	0.492	1.296
Knowledge of substance use	0.810	1.082	0.569	2.060
Attitude to substance use	0.379	1.357	0.687	2.679
Familiarity with substance of abuse	0.427	1.216	0.751	1.968
Education	0.218	1.352	0.837	2.182
Parents substance use	**0.005**	0.424	0.233	0.770
Dropped out of school due to substance use	0.465	0.772	0.386	1.544
Peer pressure	**0.030**	0.561	0.332	0.947
Economic hardship	0.780	0.931	0.565	1.535
Family problems	0.562	0.861	0.518	1.429
Lack of money	0.303	1.305	0.786	2.167

4. Discussion

The overall knowledge grading revealed that 41.1% of respondents had poor knowledge, 11.1% average knowledge, and 47.6% good knowledge. These results suggest that nearly half of the adolescents are informed about drug use, but a significant proportion still lacks adequate knowledge, which is consistent with previous findings that Nigerian adolescents often acquire fragmented or inaccurate information from peers and social media rather than structured health education (Okon *et al*., 2023; Oshodi *et al*., 2020). This underscores the need for comprehensive drug education programs integrated into school curricula and reinforced by parental and community involvement.

The attitudinal findings provide further insight into adolescent vulnerability. More than half of respondents (57.9%) reported enjoying substance use in the past months, while 61.4% admitted they might use substances to fit in with peers. This highlights the powerful influence of peer pressure, which has consistently been identified as a major driver of adolescent substance use in Nigeria (Eze *et al*., 2021; Okoza & Aluede, 2019). Although only 16.9% admitted frequent use, a concerning 74.3% perceived it as acceptable for people their age to experiment with substances. This reflects permissive attitudes and normalization of drug use within youth social networks.

Health risk awareness were relatively high, as 70.4% acknowledged that substance use could be harmful. However, contradictory findings such as the 80.8% who accepted peers' substance use and the 67.9% who found it difficult to refuse drugs when offered—point to cognitive dissonance between knowledge and behavior. Adolescents may recognize risks but still engage in or tolerate

risky behaviors due to peer influence, lack of coping mechanisms, and limited recreational alternatives (Adekeye *et al*., 2021; Nnodim *et al*., 2022).

Environmental and structural factors also emerged strongly. A large majority (80.9%) linked lack of recreational facilities to drug use, while 85.2% associated family problems with substance abuse. Additionally, nearly half attributed drug use to lack of education (47.6%) and economic hardship (47.6%). These findings are consistent with evidence that social and economic stressors, such as unemployment, poor family cohesion, and poverty, are critical determinants of substance use among Nigerian youths (Okon *et al*., 2023; Oluwereeyi & Olalekan, 2022). Importantly, these perceptions demonstrate that adolescents themselves are aware of the broader socio-economic drivers of substance use in their communities.

The findings on adolescents' knowledge and attitudes toward substance use in the fishing settlements of Southern Ijaw LGA strongly support Bandura's Social Learning Theory, which posits that behavior is learned through observation, imitation, and reinforcement within social contexts. The study revealed that 61.4% of adolescents might use substances to fit in with peers, while 80.8% accepted peers' substance use demonstrating the powerful influence of peer modelling and vicarious reinforcement described by Bandura (1977). Despite 70.4% acknowledging that substance use is harmful, the persistence of permissive attitudes (56.0%) and difficulty in refusing drugs (67.9%) reflect the conflict between cognitive awareness and socially learned behaviors, consistent with findings by Adekeye et al. (2021) and Nnodim et al. (2022). The strong association of substance use with peer pressure, family problems, and lack of recreational opportunities further aligns with the theory's assertion that environmental and social factors significantly shape behavioral outcomes (Koutroubas & Galanakis, 2022). Moreover, adolescents' perceptions that economic hardship and poor family structures contribute to drug use reinforce the role of observational learning within challenging socio-economic settings, where maladaptive coping behaviors are often normalized (Okon et al., 2023; Oluwereeyi & Olalekan, 2022). Thus, these findings affirm that adolescents in these fishing communities learn and sustain substance use behaviors through social interactions and environmental modelling, validating the applicability of Social Learning Theory to understanding and addressing substance use among Nigerian youths.

Overall, the attitudinal scores revealed that 56.0% of adolescents held positive attitudes towards substance use, which is alarming given its potential to normalize drug use behaviors. This finding underscores the urgent need for interventions that not only provide accurate knowledge but also address peer influence, family dysfunction, and structural challenges such as poverty and lack of recreational facilities. Preventive strategies must combine health education, youth empowerment programs, and community-based initiatives to reshape attitudes and strengthen resistance to substance use among Nigerian adolescents.

The findings revealed a notably high prevalence of substance use among adolescents in the fishing settlements of Southern Ijaw LGA, Bayelsa State, with 76.9% of respondents reporting substance use. This suggests that substance use is not only widespread but also constitutes a significant public health and social concern in this context. The prevalence observed in this study is consistent with evidence from Nigeria and other sub-Saharan African countries, where adolescent substance use has been documented as a growing challenge due to socio-economic hardships, cultural norms, and peer influence (Ajayi & Owumi, 2020; Onyencho *et al*., 2021). The high rate can be linked to the unique characteristics of fishing settlements such as limited access to formal education, poor socioeconomic opportunities, and exposure to drug-peddling networks which may predispose adolescents to experimentation and eventual dependence (Iwuagwu & Agbaje, 2022).

Furthermore, the prevalence reported here is higher compared to national figures reported by the United Nations Office on Drugs and Crime (UNODC, 2018), which estimated adolescent substance use in Nigeria at around 35%. This disparity underscores the context-specific vulnerabilities of fishing communities, where substance use may be reinforced by parental involvement in drug use, lack of recreational alternatives, and the demanding lifestyle of fishing occupations that sometimes normalize the use of stimulants or psychoactive substances for energy and endurance (Eze & Omeje, 2021). The high prevalence also raises concern over potential health consequences, including mental health disorders, risky sexual behaviors, poor academic performance, and increased involvement in crime (World Health Organization [WHO], 2021).

Given the high prevalence revealed in this study, targeted interventions are urgently needed. These should include awareness campaigns, community-based counseling, parental engagement programs, and school-based health education to reduce substance initiation and mitigate associated harms. Failure to address this problem may perpetuate cycles of addiction, poverty, and social disintegration within fishing settlements and beyond.

The findings in Table 4.3 reveal that alcohol was the most widely used substance among the respondents, with 162 adolescents (36.8%) reporting use. This aligns with prior studies across Nigeria and Sub-Saharan Africa, which consistently identify alcohol as the most prevalent psychoactive substance among adolescents due to its social acceptability, availability, and cultural integration into social gatherings (Oshodi, Aina, & Onajole, 2020; Odejide, 2021). Cannabis followed closely, with 140 respondents (33.3%), reflecting global and national reports that highlight cannabis as the most widely used illicit drug among young people (United Nations Office on Drugs and Crime [UNODC], 2023). Other substances such as tobacco (5.0%), codeine (2.4%), cocaine (3.1%), and tramadol (1.4%) were reported at lower prevalence, yet their presence among adolescents raises public health concerns, especially considering the addictive potential and health risks associated with these substances (Eze, 2021; World Health Organization [WHO], 2022). Notably, a small proportion of respondents reported the use of synthetic and prescription drugs such as methamphetamine, fentanyl, and morphine. This emerging trend signals a shift toward more potent and harmful substances in adolescent populations, a pattern also observed in recent Nigerian studies (Adeloye *et al*., 2019). Interestingly, 43 respondents (10.2%) reported not using any substances, suggesting that while substance use is prevalent, a subset of adolescents may be protected by strong family, religious, or community values (Ibitoye & Osayomi, 2021).

The results provide further insights into the patterns of substance use initiation and frequency among respondents. The majority, 216 respondents (51.4%), reported initiating substance use between ages 14 and 15, indicating mid-adolescence as the critical window for onset. This finding is consistent with evidence that early to mid-adolescence is the most vulnerable developmental stage for experimentation with psychoactive substances due to peer influence, curiosity, and identity formation (Bello & Sanni, 2020; Obot, 2022). Early initiation (10 to 13 years), reported by 22.4% of respondents, is particularly concerning as studies have shown that early onset of substance use increases the likelihood of addiction and long-term adverse health and social outcomes (Kessler *et al*., 2021; Oshodi *et al*., 2020). In terms of frequency, nearly half of the respondents (48.1%) reported using substances rarely, while 16.0% and 11.4% used them 2–3 times and 4–7 times daily, respectively. Alarmingly, 7.6% indicated using substances countless times daily, which may suggest dependency or problematic use. This pattern reflects findings from WHO (2022), which indicate that frequency and intensity of use are stronger predictors of substance use disorder than mere experimentation. The presence of 16.9% of respondents in

unspecified categories of use may also point to hidden or irregular patterns, such as binge use, which often complicates detection and intervention (UNODC, 2023).

Overall, the distribution and patterns of substance use observed in these findings highlight a critical public health concern, particularly given the early age of initiation and frequency of use. These results emphasize the need for comprehensive adolescent-focused interventions, including prevention programs, early counseling, and school-based education to mitigate the long-term risks associated with substance use in the study area.

The findings from Table 4.5 indicate that while most adolescents demonstrated basic awareness of substances, deeper understanding of substance abuse and its consequences were limited. A high proportion (94.5%) could identify substances, and 83.3% understood the meaning of substance use, showing that general exposure and familiarity with drugs are widespread among Nigerian adolescents. However, only half (50.0%) correctly understood the concept of substance abuse, while 60.7% acknowledged the harmful nature of drug use. Strikingly, only 14.3% recognized the link between drug use and dropping out of school, while 85.7% were unaware of this consequence. This knowledge gap suggests that while adolescents are exposed to information about drugs, comprehensive education on the broader social and academic consequences remains insufficient. Studies in Nigeria have similarly shown that while adolescents may recognize drugs as harmful, they often lack a deeper understanding of the long-term health, educational, and socio-economic impacts of substance use (Nnodim *et al*., 2022; Adekeye *et al*., 2021). This reflects weaknesses in school-based drug education and community sensitization efforts, leaving adolescents vulnerable to misinformation and experimentation.

While socio-demographic factors such as age, gender, education, ethnicity, marital status, religion, and parental employment showed no significant relationship with substance use, other contextual and familial influences were found to be more predictive. This finding aligns with earlier Nigerian studies which emphasize that socio-demographics alone are insufficient to explain patterns of substance use, as environmental and psychosocial factors often play stronger roles (Eze *et al*., 2021; Nnodim *et al*., 2022).

Age-wise, substance use was slightly more common among older adolescents (13–19 years), though the association were not significant. This pattern is consistent with national surveys that show increasing experimentation with substances as adolescents grow older and gain more independence (Okon *et al*., 2023). Similarly, the lack of gender differences contradicts traditional assumptions that males are more likely to engage in substance use, suggesting that substance use among females may be rising in these communities, a trend reported in other Nigerian urban centers (Adekeye *et al*., 2021).

Interestingly, engagement in hustling activities emerged as a significant predictor, with adolescents involved in "yahoo," farming, and fishing reporting higher prevalence of substance use. This finding reflects the role of livelihood activities that expose young people to peer groups and environments where substance use is normalized as a coping mechanism or means of socialization. Previous Nigerian studies have highlighted how informal economic activities and street hustles create high-risk contexts for adolescent drug use (Okoza & Aluede, 2019; Oluwereeyi & Olalekan, 2022). This suggests that interventions targeting adolescents in these settings must consider the economic and occupational environments that foster risky behaviors.

Knowledge of the harmful effects of drugs were also statistically significant, but paradoxically, many adolescents who acknowledged the risks still engaged in substance use. This indicates a gap between knowledge and practice, reflecting findings by Oshodi *et al*. (2020), who noted that

awareness of risks does not always translate into behavior change due to peer influence, curiosity, or perceived benefits such as stress relief. This highlights the need for interventions that go beyond knowledge provision to address behavioral, social, and structural drivers.

The regression analysis further underscores the importance of family and peer influences. Parental education was significantly associated with substance use, with adolescents whose parents had higher education more likely to engage in use. This finding is somewhat counterintuitive, as higher parental education is often assumed to be protective. However, in line with Nnodim *et al*. (2022), it may reflect the possibility that children of educated parents have greater exposure, more access to resources, or less parental supervision due to busy work schedules.

Parental substance use, family members' use, and peer pressure were also significant predictors. Adolescents exposed to substance use within their households or peer circles were more likely to engage in similar behaviors, reflecting strong modeling and social learning influences. This finding is consistent with social learning theory and is well-documented in Nigerian research, which emphasizes intergenerational patterns of substance use and the normalization of such behaviors within family and peer systems (Eze *et al*., 2021; Okon *et al*., 2023). Peer pressure, in particular, remains a dominant driver, with adolescents often reporting initiation into substance use through friends and peer groups (Okoza & Aluede, 2019).

Conversely, economic hardship, family problems, and lack of money were not statistically significant predictors in this study, despite being frequently cited in literature as risk factors (Adekeye *et al*., 2021). This may be due to the unique context of the fishing settlements, where social and peer networks exert stronger influences compared to purely economic pressures. Similarly, dropping out of school and attitudes towards substance use were not significant predictors, suggesting that while these factors are relevant, they are overshadowed by the more immediate influences of family and peers in shaping adolescent substance use behaviors.

Overall, these findings highlight the complex interplay of family, peer, and occupational environments in determining adolescent substance use in Nigeria. They reinforce the need for multifaceted interventions that not only raise awareness but also strengthen family structures, regulate peer dynamics, and address the socio-economic environments where adolescents live and work. Programs targeting parental behavior, peer mentorship, and safe livelihood opportunities may be particularly effective in reducing adolescent substance use in fishing settlements and similar contexts.

The high prevalence of substance use (76.9%) among adolescents in Southern Ijaw is alarming and exceeds national averages reported in similar Nigerian studies (Abikoye et al., 2020; Onaolapo et al., 2022). This finding suggests that adolescents in rural and riverine settlements face compounded social and environmental risk factors that encourage early initiation and continued use.

The predominance of alcohol and cannabis mirrors findings from South-South Nigeria, where cultural acceptance and availability of these substances are high (Francis et al., 2021). Unlike urban populations where harder drugs such as cocaine or methamphetamine are prevalent, adolescents in fishing communities primarily use locally available and cheaper substances. Early initiation at ages 14–15 reflects findings from Mutiso et al. (2022), who linked early experimentation with peer influence and community normalization.

Although most respondents were aware that substance use poses health risks, this knowledge did not translate into preventive behavior—a gap supported by the Health Belief Model. Similar patterns were observed by Pepple et al. (2024) and Nyameh (2023), who found that adolescents

with permissive social attitudes are more likely to engage in substance use despite moderate knowledge levels. In Southern Ijaw, this permissiveness may stem from witnessing adult substance use during fishing activities or communal ceremonies, reinforcing Bandura's Social Learning Theory.

Unlike many urban-based studies, this research found no significant association between gender, age, or education and substance use. Instead, contextual and economic factors were stronger predictors. The association between substance use and "hustling" activities suggests that poverty and survival pressures drive adolescents to use substances as coping mechanisms. This aligns with Jessor's Problem Behavior Theory, which posits that risky behaviors emerge in contexts of limited opportunity and weak social control.

Family and peer influences remain critical. Adolescents in communities where parents or siblings use alcohol or marijuana were more likely to imitate such behavior, as observed in similar studies in Rivers and Delta States (Eze, 2022; Offie et al., 2022). The absence of structured recreational outlets further compounds exposure, as boredom and socialization pressures promote risky experimentation.

The prevalence in this study is consistent with findings from coastal Kenya (Mutiso et al., 2022) and rural Ghana (Asante et al., 2021), where poverty, isolation, and weak law enforcement were significant drivers. However, it surpasses the rates reported in urban Nigeria (Olanrewaju et al., 2022), underscoring the role of environment and culture in shaping adolescent substance behavior.

The findings underscore the need for context-specific interventions. Community-based health promotion, parental involvement, and school-based education programs must be strengthened. Collaboration between health authorities, local leaders, and youth groups could enhance awareness and reduce substance use normalization.

Limitations

The study relied on self-reported data, which may be subject to recall or social desirability bias. Additionally, its cross-sectional design limits causal inference.

Conclusion

Substance use among adolescents in Southern Ijaw fishing settlements is widespread, with alcohol and cannabis as predominant substances. The high prevalence reflects a complex interaction of socio-economic hardship, cultural acceptance, and peer influence rather than demographic variables. The findings call for urgent, community-centered strategies to address this growing problem.

Consent and Ethical Considerations

Ethical approval was obtained from the Research Ethics Committee of Rivers State University. Verbal and written consent were obtained from participants and guardians. Confidentiality and anonymity were strictly maintained.

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