Original Article

Between Society and Self: A Cross-Sectional Analysis of Psychosocial and Socio-Economic Drivers of Substance Use Among Youth in Kaduna Metropolis, Northwest Nigeria

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ABSTRACT

Substance use among young people has emerged as a critical public health concern globally, with rising prevalence in sub-Saharan Africa. Psychosocial factors such as peer influence, family dynamics, social support, and psychological wellbeing are known drivers, yet little is documented in northern Nigeria. This study investigated the psychological and socio-economic determinants of substance use among youth in Kaduna Metropolis. A cross-sectional survey was conducted among 1000 youths aged 18–35 years, selected through multistage cluster sampling. Standardised instruments were used: Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), General Health Questionnaire-12 (GHQ-12), Multidimensional Scale of Perceived Social Support (MSPSS), and Rosenberg Self-Esteem Scale (RSES). Descriptive statistics, chi-square tests, Pearson correlations, and multivariate logistic regression were employed. The lifetime prevalence of substance use was 42.8% (n=428), and current use prevalence was 36.8% (n=368). Alcohol (32.5%), cannabis (16.8%), and tramadol (14.2%) were the most common substances. Correlation analysis revealed significant interrelationships among all psychosocial and socio-economic variables. Multivariate analysis revealed very high and significant correlations between current substance use and peer pressure (AOR=8.12, 95% CI: 5.78-11.41, p<0.001), family dysfunction (AOR=4.95, 95% CI: 3.52-6.96, p<0.001), psychological distress (AOR=5.65, 95% CI: 4.01-7.96, p<0.001), and low SES (AOR=3.22, 95% CI: 2.28-4.55, p<0.001). High perceived social support was protective (AOR=0.38, 95% CI: 0.26-0.55, p<0.001). Psychosocial factors strongly influence substance use among Kaduna youth. Interventions targeting peer group dynamics, mental health, and family/social support are urgently needed.

Keywords: Psychosocial Factors, Social Support, Socio-Economic Factors, Youth Substance Use

INTRODUCTION

Substance use among youth is a pervasive global public health issue, with devastating consequences for physical health, mental well-being, and social functioning.[1] The adolescent and young adult period is a critical developmental stage characterised by increased vulnerability to risk-taking behaviours, including experimentation with psychoactive substances.[2] Globally, the World Health Organization estimates that over 5% of the global burden of disease is attributable to alcohol and illicit drug use, with a significant portion of this burden originating during youth.[3]

In Nigeria, the situation is particularly alarming. Studies report a rising trend in the prevalence of substance use among young people, with figures varying across different regions and populations.[4,5] A national survey indicated that the age of initiation of drug use is falling, thereby increasing the window of exposure to associated harms such as academic failure, violence, criminality, and the development of substance use disorders.[6] The north-central region of Nigeria, where Kaduna State is located, has been identified as an area with significant drug trafficking and use activities, including the non-medical use of prescription opioids like tramadol and codeine.[7]

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The aetiology of substance use is multifactorial, involving a complex interplay of genetic, environmental, psychosocial, and socio-economic factors.[8] Psychosocial drivers, which sit at the intersection of individual psychology and social environment, are particularly salient during youth. Key risk factors identified in the literature include peer pressure, where affiliation with substance-using peers significantly increases the risk of initiation and maintenance of use.[9,10] Family dynamics also play a crucial role; poor parental monitoring, family history of substance use, and dysfunctional family environments are well-established risk factors.[11,12] Furthermore, socio-economic status (SES) is a fundamental determinant, with poverty, unemployment, and low educational attainment creating environments of stress and limited opportunity that foster substance use.[13,14]

At the individual level, psychological distress is strongly comorbid with substance use, often leading to a self-medication hypothesis where individuals use substances to alleviate negative affective states.[15,16] Furthermore, personal traits such as low self-esteem have been linked to a higher propensity for substance use as a coping mechanism for negative self-perception.[17] In the contemporary era, the influence of social media and the glorification of substance use in digital content have emerged as new, potent risk factors.[18] Conversely, strong perceived social support from family, friends, and significant others is a recognised protective factor that can buffer against these risks.[19,20]

While these factors are well-documented, their manifestation and relative importance can be highly context-specific, shaped by local cultural, economic, and social realities.[21] Kaduna Metropolis, a major urban centre in Northern Nigeria with a diverse ethnic and religious population and its own set of socio-economic challenges, provides a unique context for such an investigation. Existing studies in Nigeria have often focused on clinical populations or single universities, leaving a gap in community-based data that integrates both psychosocial and socio-economic variables for a major metropolis like Kaduna.[5,22] This study, therefore, seeks to bridge this gap by investigating the psychosocial and socio-economic drivers and protective factors of substance use among youth in Kaduna Metropolis.

MATERIALS AND METHODS

Study Design and Setting

A community-based cross-sectional study design was employed. The study was conducted in Kaduna Metropolis, the capital city of Kaduna State, Northwest Nigeria, between January and June 2025. The metropolis is comprised of three main local government areas (Kaduna North, Kaduna South, and Chikun) and is a major commercial and educational hub, with an estimated population of 1.6 million, characterised by high youth unemployment and diverse cultural influences.

Sample Size Determination

A minimum sample size of 912 was calculated using Cochran's formula[23] for prevalence studies, assuming a 50% prevalence (p) of substance use, 95% confidence level, and 3% margin of error (d). To account for non-response, 1000 participants were recruited.

Sampling Method

A multi-stage sampling technique was used. First, the metropolis was stratified into Kaduna North, Kaduna South, and Chikun. Two wards were randomly selected from each stratum. Within each selected ward, households were selected using systematic random sampling. In each household, one eligible youth was selected using a simple random sampling method if more than one eligible youth was present.

Inclusion criteria:

Young persons aged 18–35 years, resident in Kaduna Metropolis ≥12 months, willing to give informed consent.

Exclusion criteria:

Severe physical or mental illness precluding participation, or refusal to consent.

Instruments and Measures

The data collection instrument was a structured questionnaire with five sections:

Socio-demographic characteristics: age, gender, education, employment status, ethnicity, religion.

Socio-Economic Status (SES): This was assessed using a composite index based on the Oyedeji model,[24] which incorporates the educational attainment and occupation of the head of the household, as well as ownership of specific assets (e.g., electricity, refrigerator, car, housing type). Scores were computed and categorised into tertiles as Low, Middle, and High SES.

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)[25]: Used to measure substance use. The ASSIST assesses lifetime and recent use (past 3 months) of a range of substances and associated problems. It has been validated for use in Nigeria.[26]

Psychosocial Factors: Measured using adapted, previously validated scales.

1. *Peer Pressure:* A 10-item scale adapted from.[27] Responses were on a 4-point Likert scale. Cronbach's alpha in this study was 0.87.
2. *The 12-item General Functioning Subscale of the McMaster Family Assessment Device (FAD)[28]:* To measure family dysfunction. This scale has been used extensively in Nigerian studies.[29] Cronbach's alpha was 0.89.
3. *The Rosenberg Self-Esteem Scale (RSES)*[30]: To measure self-esteem. It is a 10-item scale with good reliability and validity in Nigerian populations.[31] Cronbach's alpha was 0.82.
4. *The 12-item General Health Questionnaire (GHQ-12)*[32]: To measure psychological distress. It is a widely used tool for detecting common mental disorders in community settings. It has been validated in Nigeria.[33] Cronbach's alpha was 0.85.
5. *Social Media Influence:* A 7-item scale adapted from[34] was used to assess the frequency of exposure to substance-related content and its perceived influence. Cronbach's alpha was 0.79.
6. *The Multidimensional Scale of Perceived Social Support (MSPSS)*[35]: To measure perceived social

support. It is a 12-item scale that assesses support from family, friends, and a significant other. It has demonstrated good validity and reliability in Nigerian studies.[36] Cronbach's alpha for the total scale was 0.91.

Study Procedure

Ethical approval was obtained from the Ahmadu Bello University Teaching Hospital Health Research Ethics Committee. The purpose of the study was explained to each participant, and written informed consent was obtained before questionnaire administration. Trained research assistants administered the instruments in English or Hausa, depending on participant preference. Data were collected anonymously to ensure confidentiality. Completed questionnaires were cross-checked daily for accuracy. The questionnaire took approximately 20-25 minutes to complete.

Ethical Consideration

The study procedures were reviewed and approved by the Health Research Ethic Committee of Ahmadu Bello University Teaching Hospital, Shika-Zaria (**Ref: ABUTHZ/HREC/C34/2025**). Informed written consent was obtained from all participants prior to their inclusion in the study. Confidentiality and anonymity of participants was maintained throughout the research process. Participants were duly informed they could withdraw from the study at any time without any consequences.

Statistical Analysis

Data were analysed using IBM SPSS Statistics version 29. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarise socio-demographic and key variables. To examine the relationships between continuous psychosocial and socio-economic variables, Pearson's correlation analysis was conducted. The association between categorical variables and current substance use (user vs. non-user) was assessed using Chi-square tests. Variables significant at $p<0.05$ in bivariate analysis were entered into a multivariate binary logistic regression model to identify independent predictors of substance use and to determine adjusted odds ratios (AOR) with 95% confidence intervals (CI). A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 1,000 questionnaires were distributed and all were completed and returned, giving a 100% response rate. As shown in Table 1, the mean age of respondents was 24.7 years (±4.3), the sample was almost evenly split by gender, with slightly more than half being male (52.0%, n=520), a significant majority of the respondents were single (65.0%, n=650), and majority had attained tertiary education (71.5%, n=715). Up to 43.0% (n=430) were unemployed. The socio-economic status (SES) distribution, measured using a composite index, revealed that a plurality of the participants were classified as low SES (38.0%, n=380), followed by middle (35.0%, n=350) and high SES (27.0%, n=270).

The findings on substance use prevalence, detailed in Table 2, showed lifetime prevalence of any substance use was 42.8% (n=428), while the current use prevalence (use within the past three months) stood at 36.8% (n=368). Alcohol was the most prevalent substance, used by almost a third of respondents in their lifetime (32.5%, n=325) and over a quarter currently (26.8%, n=268). This was followed by cannabis, with a lifetime prevalence of 16.8% (n=168) and a current use of 12.5% (n=125). Non-medical use of prescription opioids; tramadol, had a lifetime use of 14.2% (n=142) and current use of 11.3% (n=113), while codeine had a lifetime prevalence of 5.5%. Tobacco had a lifetime prevalence of 13.1%, methamphetamine 1.8%, and cocaine 2.5%.

Table 3 provides insight into the complex interrelationships between the study variables through a Pearson's correlation matrix. The matrix reveals that all psychosocial and socio-economic variables were significantly correlated with each other and with substance use at the $p<0.01$ level. Substance use demonstrated strong positive correlations with several risk factors: the strongest was with peer pressure ($r = 0.62$). This was closely followed by correlations with psychological distress ($r = 0.58$) and family dysfunction ($r = 0.55$). Substance use was negatively correlated with protective factors: the correlation with perceived social support was strongly negative ($r = -0.53$). Similarly, the correlation of substance use with self-esteem was negative ($r = -0.50$).

The matrix revealed that the predictor variables are not independent but are deeply interconnected. For example, the was a very strong correlation between psychological distress and low self-esteem ($r = 0.61$), strong correlation between low perceived social support and family dysfunction ($r = 0.57$), while socio-economic status correlated negatively with family dysfunction ($r = -0.50$) and psychological distress ($r = -0.47$).

Table 4 presents the results of the bivariate analysis (Chi-square tests), comparing the proportion of current substance users and non-users across various categorical factors. The results are uniformly significant ($p<0.001$ for all variables). Majority (58.7%; n = 216) of current users were from low SES backgrounds, compared to only 25.9% (n = 164) of non-users. Similarly, unemployment was markedly higher among users (53.0%; n = 195) than non-users (37.2%; n = 235). A significant majority (78.3%; n = 288) of users reported high peer pressure, compared to only 19.3% (n = 122) of non-users. The home environment was also a major differentiator, with 72.0% (n = 265) of users coming from highly dysfunctional families versus 21.7% (n = 137) of non-users. Mental and emotional factors showed significant differences: 73.4% (n = 270) of users screened positive for high psychological distress, compared to a mere 13.8% (n = 87) of non-users. Conversely, 65.8% (n = 416) of non-users enjoyed high perceived social support, while only 34.5% (n = 127) of users reported high perceived social support.

Table 5 presents the final multivariate logistic regression model, which controls for the intercorrelations between all the significant variables identified in the bivariate analysis, allowing for the identification of the independent effect of each factor on the odds of being a current substance user. The model showed high robustness (Hosmer-Lemeshow test: $\chi^2 = 9.01$, $p = 0.341$; Nagelkerke $R^2 = 0.592$), explaining approximately 59% of the variance in substance use. Even after controlling for other factors, peer pressure emerged as the strongest independent predictor. Youth reporting high peer pressure had over eight times the

odds (AOR=8.12, 95% CI: 5.78-11.41) of being current substance users compared to those with low peer pressure. Psychological distress was the second strongest independent predictor, with those experiencing high distress having 5.65 times the odds (95% CI: 4.01-7.96) of substance use. Family dysfunction remained a powerful driver, increasing the odds of use nearly fivefold (AOR=4.95, 95% CI: 3.52-6.96). Low self-esteem independently increased the odds of use by 3.85 times (95% CI: 2.71-5.47). Low socio-economic status retained its strong significant independent effect, with low SES youth having 3.22 times the odds (95% CI: 2.28-4.55) of using substances compared to their middle/high SES peers, even after accounting for psychological and social factors. Conversely, high perceived social support was a potent protective factor, reducing the odds of substance use by 62% (AOR=0.38, 95% CI: 0.26-0.55). Employment status and social media influence, which were significant in the bivariate analysis, were not independent predictors in the final model.

Table 1: Socio-demographic and Socio-Economic Characteristics of Respondents (N=1000)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18-24	520	52.0
	25-35	480	48.0
Gender	Male	520	52.0
	Female	480	48.0
Marital Status	Single	650	65.0
	Married	330	33.0
	Divorced/Separated	20	2.0
Educational Level	Secondary & below	285	28.5
	Tertiary	715	71.5
Employment Status	Employed	380	38.0
	Unemployed	430	43.0
	Student	190	19.0
Socio-Economic Status	Low	380	38.0
	Middle	350	35.0
	High	270	27.0

Table 2: Prevalence of Specific Substance Use Among Respondents

Substance	Lifetime Use		Current Use	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Alcohol	325	32.5	268	26.8
Cannabis	168	16.8	125	12.5
Tramadol	142	14.2	113	11.3
Codeine	55	5.5	42	4.2
Tobacco (Cigarettes)	131	13.1	98	9.8
Methamphetamine	18	1.8	12	1.2
Cocaine	25	2.5	15	1.5
Others	35	3.5	22	2.2
Any Substance	428	42.8	368	36.8

Note: Participants could report use of more than one substance.

Table 3: Pearson 's Correlation Matrix of Psychosocial, Socio -Economic Variables and Substance Use (N=1000)

Variable	1	2	3	4	5	6	7	8
1. Substance Use	1							
2. Peer Pressure	.62**	1						
3. Family Dysfunction	.55**	.52**	1					
4. Psychological Distress	.58**	.49**	.60**	1				
5. Self-Esteem	-.50**	-.45**	-.52**	-.61**	1			
6. Social Media Influence	.45**	.58**	.40**	.38**	-.36**	1		
7. Social Support	-.53**	-.48**	-.57**	-.59**	.54**	-.42**	1	
8. Socio-Economic Status	-.41**	-.35**	-.50**	-.47**	.39**	-.30**	.44**	1

Correlation is significant at the 0.01 level (2-tailed).

Table 4: Bivariate Analysis of Factors Associated with Current Substance Use

Variable	Category	Current Users (n=368) n (%)	Non-Users (n=632) n (%)	p-value
Socio-Economic Status	High/Middle	152 (41.3)	468 (74.1)	<0.001
	Low	216 (58.7)	164 (25.9)	
Employment Status	Employed/Student	173 (47.0)	397 (62.8)	<0.001
	Unemployed	195 (53.0)	235 (37.2)	
Peer Pressure	Low	80 (21.7)	510 (80.7)	<0.001
	High	288 (78.3)	122 (19.3)	
Family Dysfunction	Low	103 (28.0)	495 (78.3)	<0.001
	High	265 (72.0)	137 (21.7)	
Self-Esteem	Normal/High	110 (29.9)	520 (82.3)	<0.001
	Low	258 (70.1)	112 (17.7)	
Psychological Distress	Low	98 (26.6)	545 (86.2)	<0.001
	High	270 (73.4)	87 (13.8)	
Social Media Influence	Low	142 (38.6)	520 (82.3)	<0.001
	High	226 (61.4)	112 (17.7)	
Perceived Social Support	Low	241 (65.5)	216 (34.2)	<0.001
	High	127 (34.5)	416 (65.8)	

Table 5: Multivariate Logistic Regression Analysis of Predictors of Current Substance Use

Predictor Variable	Adjusted Odds Ratio (AOR)	95% Confidence Interval (CI)	p-value
High Peer Pressure	8.12	5.78 - 11.41	<0.001
High Psychological Distress	5.65	4.01 - 7.96	<0.001
High Family Dysfunction	4.95	3.52 - 6.96	<0.001
Low Self-Esteem	3.85	2.71 - 5.47	<0.001
Low Socio -Economic Status	3.22	2.28 - 4.55	<0.001
High Perceived Social Support	0.38	0.26 - 0.55	<0.001

Hosmer-Lemeshow test: $\chi^2 = 9.01$, $p = 0.341$; Nagelkerke $R^2 = 0.592$

DISCUSSION

This study provides a comprehensive analysis of the complex interplay between socio-economic factors, psychosocial drivers, and substance use among youth in Kaduna Metropolis, Nigeria. The high lifetime (42.8%) and current (36.8%) prevalence rates found in this study indicate a pressing public health issue. These figures are higher than the 22.4% lifetime prevalence reported by Audu *et al*. among in-school adolescents in Ilorin, Nigeria,[37] but are consistent with the range (20.9% - 47.7%) found in other Nigerian studies focusing on older adolescents and young adults in both school and community settings.[5,38] This suggests that substance use escalates significantly post-adolescence, particularly in urban environments like Kaduna. The pattern of use, dominated by alcohol, cannabis, and the non-medical use of tramadol, mirrors the national trend identified in the 2018 National Survey, which highlighted a shift towards prescription opioid misuse as a major concern for Nigerian youth.[6]

The findings of this study resonate strongly with, and significantly extend, the existing body of literature. The identification of peer pressure as the strongest predictor is a consistent finding in substance use research. Our result aligns perfectly with studies from South-West Nigeria, where peer influence, according to Balogun, was the foremost reason for drug abuse among adolescents,[39] and from other West African nations like Ghana, where Doku *et al*. found peer substance use was a paramount risk factor.[40] This finding underscores the fundamental role of social belonging during youth, which, when coupled with exposure to substance-using peers, can increase engagement in risk-taking behaviours.[9] The potency of this effect in Kaduna suggests that interventions proven elsewhere, such as peer resistance training and normative education programmes, could be highly effective if culturally adapted.

The robust association between psychological distress and substance use reinforces the well-documented global comorbidity between mental health issues and substance use disorders. This finding supports the self-medication hypothesis[15] and is consistent with research from other African countries. For instance, studies from Kenya by Atwoli *et al*.[41] and South Africa by Saban *et al*.[42] have similarly documented high rates of comorbid psychological distress and substance use among young people. Our use of the GHQ-12 to measure general psychological distress captures a broader spectrum of emotional suffering that predisposes youth to substance use as a coping mechanism. This indicates that community-level mental health promotion and accessible counselling services are a critical component in addressing the substance use epidemic.

The significant role of family dysfunction confirms that the family unit remains a critical determinant of youth behaviour in the Nigerian context. This finding is consistent with studies from Lagos, Nigeria, by Adekeye *et al*. and Abiodun *et al*. which found that family problems, including poor communication and lack of cohesion, were significant risk factors.[12,29] It also aligns with international literature that identifies the family as the primary source of socialisation and support.[11] The strong correlation found between family dysfunction and low SES illustrates how economic pressure can contribute to a stressful home environment, disrupting family dynamics.

A critical contribution of this study in the Nigerian context is the strong independent association between low socio-economic status and substance use, even after controlling for key psychosocial variables. This finding places the issue of youth substance use within the broader framework of poverty and inequality. It corroborates studies from other LMICs, such as Ghana[40] and South Africa,[43] which have linked economic marginalisation to higher rates of substance use. It suggests that for many youths in Kaduna, substance use may be a coping mechanism for the stress of poverty or a response to limited economic opportunities and perceived hopelessness about the future.[13,14] This underscores that effective interventions must incorporate components of economic empowerment and vocational training.

The protective role of high perceived social support is another crucial finding. This aligns with the buffering hypothesis[19] and is consistent with international literature demonstrating that strong support networks from family, friends, and the community can confer resilience against substance use.[20] In the context of Kaduna, programmes that build social cohesion and positive community networks could serve as powerful tools for prevention.

The correlation matrix provides insight into the complex web of factors at play. The strong intercorrelations (e.g., between psychological distress and low self-esteem, between low SES and family dysfunction) support a syndemic perspective.[44,45] These problems cluster together, mutually enhancing their effects and creating a context of vulnerability from which substance use emerges. The multivariate analysis, which controlled for these interrelationships, successfully isolated the powerful independent contribution of each factor, demonstrating that each requires specific attention in a comprehensive intervention strategy.

CONCLUSION

This study provides compelling evidence that substance use among youth in Kaduna Metropolis is a significant problem driven by a synergistic network of socio-economic and psychosocial risk factors, while also identifying social support as a key protective element.

RECOMMENDATIONS

In light of the findings, we recommend a paradigm shift

towards integrated, multi-level interventions. This should include the implementation of evidence-based programs that simultaneously build peer resistance skills, enhance mental health literacy, and educate parents on positive monitoring and communication. Concurrently, youth-focused initiatives providing vocational training and entrepreneurship opportunities are crucial to address the fundamental driver of low socio-economic status. Strengthening the mental health infrastructure through routine screening in primary care and schools, coupled with training for community health workers, is essential. Furthermore, leveraging community structures to create safe spaces and mentorship programmes can foster protective social support and resilience. Finally, advocating for public policies that address the broader structural determinants of health, such as poverty reduction and job creation, alongside promoting longitudinal research to evaluate intervention effectiveness, is vital for a sustainable response.

LIMITATIONS

The cross-sectional nature of the study precludes the establishment of causal relationships. The use of self-reported measures may be subject to social desirability and recall bias. Furthermore, the study was conducted in an urban setting, and the findings may not be generalisable to rural youth. While the correlation matrix reveals relationships, it does not imply causation or delineate the direction of influence between variables.

AUTHORS' CONTRIBUTIONS

AAY, SMB, and AIA conceptualised and designed the study. AAY, SK, AA, and FAS were involved in data collection and analysis. AAY, SMB, AIA, and BAY drafted and revised the manuscript. All authors critically reviewed for intellectual content, approved the final version, and agreed to be accountable for all aspects of the work.

INFORMED CONSENT

Written informed consent was obtained from all participants prior to enrolment.

DECLARATION OF PATIENT'S CONSENT

The authors certify that all appropriate consent forms were obtained. Participants understood that their identities would remain confidential.

DECLARATION OF HELSINKI

The study was conducted in accordance with the principles of the Helsinki Declaration.

AVAILABILITY OF RESEARCH DATA

Data are available upon reasonable request from the corresponding author.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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