

ORIGINAL ARTICLE

Association of Sociodemographic Factors with Severity of Substance Use Risk among Bangladeshi Adolescents

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ABSTRACT

Background: Adolescent substance use is a growing public health concern, strongly influenced by sociodemographic and family-related factors, leading to varying degrees of risk severity. **Aim of the study:** To assess the association between sociodemographic factors and severity of substance use risk among Bangladeshi adolescents. **Methods & Materials:** This cross-sectional study was conducted over two years (October 2020–September 2022) in tertiary psychiatric and de-addiction centers in Bangladesh. A total of 140 adolescents aged 12–19 years were selected using purposive sampling. Data were collected through a structured questionnaire, and substance use risk was assessed using a CRAFFT-based categorization (low, moderate, high, very high). Statistical analysis was performed using chi-square test and multivariable logistic regression, with $p < 0.05$ considered significant. **Result:** Most participants were male (93.6%), aged 17–19 years (50.0%). Low, moderate, high, and very high risk were 51.4%, 30.7%, 14.3%, and 3.6%, respectively. Significant associations were observed between substance use severity and age ($p=0.018$), gender ($p=0.041$), residence ($p=0.027$), education ($p=0.033$), family income ($p=0.012$), parental education ($p<0.05$), family conflict ($p=0.001$), and peer influence (44.3%). Multivariable analysis identified peer influence (AOR=3.12), family conflict (AOR=2.41), and low parental education (AOR=1.95) as key predictors. **Conclusion:** Sociodemographic and family-related factors significantly influence the severity of substance use risk among Bangladeshi adolescents. Peer influence, family conflict, and parental education emerged as the strongest determinants. Early identification of high-risk groups and targeted family- and school-based preventive interventions are essential to reduce adolescent substance use burden.

Keywords: Adolescents, substance use risk, sociodemographic factors, Bangladesh, peer influence, family conflict.

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INTRODUCTION

Substance use among adolescents has emerged as a major public health concern worldwide due to its profound effects on physical health, psychological well-being, academic performance, and social functioning [1]. Adolescence represents a critical developmental period characterized by experimentation, identity formation, and increased susceptibility to risky behaviors, making this age group particularly vulnerable to substance use initiation and progression [2]. The use of tobacco, alcohol, and illicit substances during adolescence has been associated with impaired cognitive development, poor educational outcomes, behavioral disorders, violence, injuries, and an elevated risk of lifelong dependency [3,4]. Globally, substance use among adolescents remains a substantial burden, with studies suggesting that approximately 14% of adolescents engage in the use of at least one psychoactive substance depending on geographic region, socioeconomic context, and assessment methods [5]. According to international estimates, alcohol, tobacco, and cannabis remain the most commonly used substances among adolescents, contributing significantly to morbidity, disability, and premature mortality in this age group [6]. Early initiation of substance use has been consistently linked with a higher probability of addiction, mental health disorders,

and chronic substance dependence in adulthood [7]. In Bangladesh, adolescent substance use has become an increasingly concerning issue due to rapid urbanization, social transitions, peer influence, and changing lifestyle patterns. Previous Bangladeshi studies have reported notable prevalence rates of substance-related behaviors among adolescents, including cigarette smoking, alcohol consumption, and illicit drug use [8]. Evidence indicates that approximately one-fifth of adolescents have been exposed to smoking behaviors, while a considerable proportion report alcohol use and experimentation with psychoactive substances. Such patterns are particularly alarming because Bangladesh has a large adolescent population, and substance use during this stage may negatively affect educational attainment, family relationships, and long-term productivity [9,10]. The severity of substance use risk among adolescents is influenced by multiple sociodemographic determinants. Factors such as age, sex, educational status, socioeconomic condition, family structure, parental education, residential setting, and peer environment have been identified as important contributors to substance-related behaviors [11]. Older adolescents are generally more likely to engage in substance use because of greater social exposure, increased independence, and peer pressure [12]. Similarly, male adolescents frequently demonstrate a higher

tendency toward substance experimentation than females due to social norms and behavioral expectations [13]. Family instability, low parental supervision, poor academic engagement, and adverse social environments have also been associated with elevated substance use risk [14]. Furthermore, peer influence is recognized as one of the strongest predictors of adolescent substance use behavior. Adolescents often adopt risky habits through social acceptance, curiosity, or pressure from friends [15]. In addition, exposure to family members who smoke or use substances, easy accessibility to drugs, and psychosocial stressors may further intensify the likelihood and severity of substance use [16]. Understanding the interaction between sociodemographic characteristics and substance use severity is essential for developing effective preventive interventions and adolescent-focused public health strategies. Therefore, this study aimed to assess the association of sociodemographic factors with the severity of substance use risk among Bangladeshi adolescents.

METHODS & MATERIALS

This study was conducted in Outpatient Department (OPD) and De addiction clinic of Department of Psychiatry, Bangabandhu Sheikh Mujib Medical University (BSMMU), National Institute of Mental Health, Sher-E-Bangla Nagar, Dhaka and Central Drug Addiction Treatment Center (CDC), Tejgaon in Bangladesh. The study spanned a defined data collection period of 2 years, from October 2020 to September 2022, and focused on adolescents to assess the association between sociodemographic factors and severity of substance use risk. Using a purposive sampling technique, a total of 140 adolescents were enrolled. The study was approved by the Institutional Ethics Committee and the reference number was BSMMU/2022/2160.

Inclusion Criteria

- Adolescents aged 12–19 years.
- Students currently enrolled in secondary or higher secondary educational institutions.
- Individuals who provided informed assent along with parental consent.

Exclusion Criteria

- Diagnosed psychiatric disorders under active treatment.
- Severe cognitive impairment or communication difficulties.
- Incomplete questionnaire responses.

Study Procedure

Data were collected using a structured, pre-tested, and validated questionnaire. The questionnaire included sections on sociodemographic characteristics (age, gender, residence, educational status, family type, and monthly family income), parental and family-related factors (parental education, occupation, family history of substance use, living arrangement, and family conflict), and substance use-related behaviors. Severity of substance use risk was assessed using a standardized screening tool (CRAFT-based risk categorization), classifying respondents into low, moderate, high, and very high risk groups. Participants were interviewed in a confidential setting to ensure privacy and reduce reporting bias. Data quality was checked daily for completeness and consistency.

Outcome Measures

The primary outcome was the severity of substance use risk among adolescents, categorized into low, moderate, high, and very high risk. The secondary outcome was identification of sociodemographic and family-related predictors associated with increased severity of substance use risk.

Statistical Analysis

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize variables as frequencies, percentages, and mean $\pm$ standard deviation (SD). The chi-square test was used to assess associations between categorical variables and severity of substance use risk. Variables significant at $p < 0.05$ in univariate analysis were entered into a multivariable logistic regression model to determine adjusted odds ratios (AOR) with 95% confidence intervals (CI). A p -value < 0.05 was considered statistically significant.

RESULT

The present study included 140 adolescents to assess sociodemographic characteristics and their association with severity of substance use risk. Most participants were aged 17–19 years (50.0%), followed by 15–16 years (37.1%) and 12–14 years (12.9%), with a mean age of 17.42 ± 1.247 years. The majority were male (93.6%), while 6.4% were female. About 52.1% resided in urban areas. Regarding education, most had higher secondary education (68.6%). A total of 64.3% belonged to nuclear families. Monthly family income was mainly 20,000–40,000 BDT (43.6%). Fathers were mostly educated up to secondary level (34.3%). Similarly, mothers' education was mainly secondary (38.6%) *Table I*.

Table I: Sociodemographic characteristics of the study population (n=140)

Characteristics	Frequency (n)	Percentage (%)
Age group (years)		
12–14	18	12.9
15–16	52	37.1
17–19	70	50.0
Mean $\pm$ SD	17.42 $\pm$ 1.247	
Gender		
Male	131	93.6
Female	9	6.4
Residence		
Urban	73	52.1
Rural	67	47.9
Educational status		
Primary	1	0.7
Secondary	43	30.7
Higher secondary	96	68.6

Family type		
Nuclear	90	64.3
Joint	50	35.7
Family monthly income (BDT)		
<20,000	32	22.9
20,000–40,000	61	43.6
>40,000	47	33.6
Father's education		
Primary	18	12.9
Secondary	48	34.3
Higher secondary	42	30.0
Graduate and above	32	22.9
Mother's education		
Primary	28	20.0
Secondary	54	38.6
Higher secondary	37	26.4
Graduate and above	21	15.0

Regarding severity of substance use risk, 51.4% were in the low-risk group, 30.7% in moderate risk, 14.3% in high risk, and 3.6% in very high risk (*Table II*).

Table II: Distribution of severity of substance use risk among adolescents.

Severity of Substance Use Risk	Frequency (n)	Percentage (%)
Low risk	72	51.4
Moderate risk	43	30.7
High risk	20	14.3
Very high risk	5	3.6

Age was significant ($p=0.018$), with higher high-risk proportions in 17–19 years (25.7%). Gender was also significant ($p=0.041$), with males showing higher high-risk levels (18.3%) than females (11.1%). Residence showed significance ($p=0.027$), with urban adolescents having higher high-risk proportion (23.3%) than rural (11.9%). Educational level was significant ($p=0.033$), with higher secondary students

showing more high risk (20.8%). Family type also showed significance ($p=0.049$), with nuclear families having higher high-risk proportion (21.1%) than joint families (12.0%). Family income was significant ($p=0.012$), with highest high risk in >40,000 BDT group (29.8%) *Table III*.

Table III: Association between sociodemographic factors and severity of substance use risk

Sociodemographic Variables	Low Risk n (%)	Moderate Risk n (%)	High Risk n (%)	P value
Age group				
12–14	13 (72.2)	4 (22.2)	1 (5.6)	0.018
15–16	28 (53.8)	18 (34.6)	6 (11.5)	
17–19	31 (44.3)	21 (30.0)	18 (25.7)	
Gender				
Male	65 (49.6)	42 (32.1)	24 (18.3)	0.041
Female	7 (77.8)	1 (11.1)	1 (11.1)	
Residence				
Urban	31 (42.5)	25 (34.2)	17 (23.3)	0.027
Rural	41 (61.2)	18 (26.9)	8 (11.9)	
Educational level				
Primary	1 (100.0)	0 (0.0)	0 (0.0)	0.033
Secondary	27 (62.8)	11 (25.6)	5 (11.6)	
Higher secondary	44 (45.8)	32 (33.3)	20 (20.8)	
Family type				
Nuclear	40 (44.4)	31 (34.4)	19 (21.1)	0.049
Joint	32 (64.0)	12 (24.0)	6 (12.0)	
Family income				
<20,000	22 (68.8)	8 (25.0)	2 (6.3)	0.012
20,000–40,000	33 (54.1)	19 (31.1)	9 (14.8)	
>40,000	17 (36.2)	16 (34.0)	14 (29.8)	

Father's education ($p=0.021$) and mother's education ($p=0.034$) were significantly associated with risk severity, with lower education linked to higher risk. Parental occupation was significant ($p=0.029$). Family history of substance use showed strong significance ($p=0.003$), with higher high risk (21.1%) in exposed adolescents versus 3.3% in non-exposed. Living with

both parents was significant ($p=0.041$), with higher risk in those not living with both parents (16.0%). Family conflict was highly significant ($p=0.001$), with higher high risk (15.8%) among those with conflict (*Table IV*).

Table IV: Family and parental factors associated with severity of substance use risk

Variables	Low Risk n (%)	Moderate Risk n (%)	High Risk n (%)	P value
Father education				
Primary	13 (72.2)	4 (22.2)	1 (5.6)	0.021
Secondary	28 (58.3)	15 (31.3)	5 (10.4)	
Higher secondary	19 (45.2)	18 (42.9)	6 (11.9)	
Graduate and above	12 (37.5)	18 (50.0)	2 (12.5)	
Mother education				
Primary	19 (67.9)	7 (25.0)	2 (7.1)	0.034
Secondary	30 (55.6)	20 (37.0)	4 (7.4)	
Higher secondary	15 (40.5)	18 (48.6)	4 (10.9)	
Graduate and above	8 (38.1)	10 (47.6)	3 (14.3)	
Parental occupation				
Unemployed	5 (71.4)	2 (28.6)	0 (0.0)	0.029
Service holder	28 (56.0)	18 (36.0)	4 (8.0)	
Business	20 (44.4)	22 (48.9)	3 (6.7)	
Others	19 (50.0)	15 (39.5)	4 (10.5)	
Family history of substance use				
Present	5 (26.3)	10 (52.6)	4 (21.1)	0.003
Absent	67 (55.4)	50 (41.3)	4 (3.3)	
Living with both parents				
Yes	63 (54.8)	40 (34.8)	12 (10.4)	0.041
No	9 (36.0)	12 (48.0)	4 (16.0)	
Family conflict				
Present	12 (31.6)	20 (52.6)	6 (15.8)	0.001
Absent	60 (58.8)	38 (37.3)	4 (3.9)	

Table V shows substance use patterns: cigarette smoking (20.0%), alcohol use (8.6%), cannabis use (4.3%), sedatives (6.4%), and multiple substance use (10.7%). Early initiation

(≤ 15 years) was reported by 24.3%, and peer influence was present in 44.3%.

Table V: Substance use pattern among adolescents

Substance-related Variables	Frequency (n)	Percentage (%)
Cigarette smoking	28	20.0
Alcohol use	12	8.6
Cannabis use	6	4.3
Sedatives	9	6.4
Multiple substance use	15	10.7
Age of first use (≤ 15 years)	34	24.3
Peer influence present	62	44.3

Table VI shows multivariable analysis where older age (AOR=1.42, $p=0.021$), male gender (AOR=1.78, $p=0.004$), low parental education (AOR=1.95, $p=0.001$), family conflict (AOR=2.41, $p<0.001$), and peer substance use (AOR=3.12,

$p<0.001$) were significant predictors of higher risk severity. Urban residence was not statistically significant (AOR=1.33, $p=0.088$).

Table VI: Multivariable analysis of factors associated with higher severity of substance use risk

Characteristics	Adjusted OR	95% C.I.	P value
Older age	1.42	1.05 – 1.92	0.021
Male gender	1.78	1.20 – 2.65	0.004
Urban residence	1.33	0.95 – 1.86	0.088
Low parental education	1.95	1.31 – 2.89	0.001
Family conflict	2.41	1.68 – 3.45	<0.001
Peer substance use	3.12	2.10 – 4.63	<0.001

DISCUSSION

Substance use risk among adolescents is increasingly recognized as a multifactorial public health concern, with sociodemographic characteristics playing a significant role in influencing the severity and pattern of risky behaviors [17]. The present study assessed the association of sociodemographic and family-related factors with the severity of substance use risk among Bangladeshi adolescents and identified several determinants associated with higher-risk substance use behavior. More than half of the adolescents (51.4%) belonged

to the low-risk group, while 30.7% demonstrated moderate risk and 17.9% were categorized as high or very high risk. These findings suggest that although a substantial proportion of adolescents remain at lower risk, a considerable number are vulnerable to problematic substance use, warranting early preventive interventions [18]. Regarding sociodemographic characteristics, the majority of participants were aged 17–19 years (50.0%), male (93.6%), urban residents (52.1%), and studying at the higher secondary level (68.6%). Age demonstrated a statistically significant association with

severity of substance use risk, with older adolescents showing a greater proportion of high-risk behavior compared with younger age groups (25.7% among 17–19 years vs. 5.6% among 12–14 years, $p=0.018$). Moreover, multivariable analysis confirmed older age as an independent predictor of severe substance use risk (AOR=1.42, $p=0.021$). This finding aligns with previous studies reporting that substance use tends to increase during late adolescence due to greater independence, increased peer interaction, and heightened curiosity toward experimentation [19]. Gender also showed a significant association with severity of substance use risk. Male adolescents demonstrated higher proportions of moderate and high-risk behavior than females ($p=0.041$), and male gender remained significantly associated with severe substance use risk in multivariable analysis (AOR=1.78, $p=0.004$). Similar findings have been reported in earlier studies where adolescent males were more likely to engage in smoking, alcohol use, and other risky behaviors than females, likely due to greater social freedom and increased exposure to peer influences [17,20]. Residence was significantly associated with substance use severity, where urban adolescents exhibited a higher proportion of high-risk substance use compared with rural adolescents (23.3% vs. 11.9%, $p=0.027$). Although urban residence was not statistically significant after adjustment (AOR=1.33, $p=0.088$), the finding suggests that urban environments may expose adolescents to greater availability of substances and social influences. Educational level also showed a statistically significant association ($p=0.033$), with higher secondary students demonstrating greater moderate and high-risk substance use than adolescents in lower educational categories. Increased academic pressure and broader peer interaction may contribute to this pattern [21]. Family type demonstrated a statistically significant association with severity of substance use risk ($p=0.049$), where adolescents from nuclear families exhibited greater substance-related risk compared with those from joint families. Joint family systems may provide stronger emotional support and closer supervision, thereby reducing behavioral risk [22]. Similarly, family monthly income showed a significant association ($p=0.012$), where adolescents from higher-income families (>40,000 BDT) had the highest proportion of high-risk behavior. Increased financial resources may facilitate easier access to cigarettes, alcohol, and other substances, thereby increasing experimentation opportunities [23]. Regarding parental characteristics, father's educational status was significantly associated with severity of substance use risk ($p=0.021$), where adolescents whose fathers had lower educational attainment demonstrated comparatively higher substance-related risk. Mother's educational level also showed a significant relationship ($p=0.034$), and low parental education remained an independent predictor in multivariable analysis (AOR=1.95, $p=0.001$). Parents with limited education may have lower awareness regarding substance-related harms and reduced capacity for effective supervision and communication with adolescents. Similar findings have been reported in previous studies highlighting parental education as an important protective factor against adolescent substance use [24]. Family history of substance use emerged as an important determinant of greater severity of substance use risk ($p=0.003$). Adolescents with a positive family history demonstrated considerably higher moderate and high-risk behaviors than those without such exposure. Substance use within families may normalize these behaviors and increase the likelihood of imitation among adolescents. Living with both parents also showed a statistically significant association ($p=0.041$), where adolescents not residing with both parents

demonstrated higher substance-related risk, possibly due to reduced emotional support and supervision [25]. Family conflict showed one of the strongest associations with severity of substance use risk ($p=0.001$). Adolescents experiencing family conflict demonstrated markedly greater moderate and high-risk behaviors than those without conflict. Furthermore, family conflict remained an independent predictor in multivariable analysis (AOR=2.41, $p<0.001$). Previous literature similarly suggests that emotionally stressful family environments and poor family cohesion significantly contribute to maladaptive coping behaviors, including substance use among adolescents [26]. Regarding substance use patterns, cigarette smoking was the most common substance-related behavior (20.0%), followed by multiple substance use (10.7%) and alcohol consumption (8.6%). Early initiation of substance use at ≤ 15 years was reported by nearly one-quarter (24.3%) of adolescents, which is concerning because early exposure substantially increases the risk of future dependency and psychosocial complications. Peer influence was present among 44.3% of participants and emerged as the strongest predictor of severe substance use risk in multivariable analysis (AOR=3.12, $p<0.001$). This finding strongly supports previous evidence that peer behavior plays a central role in shaping adolescent substance use patterns through social acceptance, imitation, and normalization of risky behaviors [27].

LIMITATIONS

This study has several limitations. First, its cross-sectional design limits the ability to establish causal relationships between sociodemographic factors and substance use severity. Second, the use of purposive sampling from selected tertiary care centers may introduce selection bias and limit generalizability to the broader adolescent population. Third, data were self-reported, which may be subject to recall and social desirability bias, particularly for sensitive behaviors like substance use. Finally, the study did not assess long-term behavioral outcomes or follow-up changes in risk patterns.

CONCLUSION

This study demonstrates that sociodemographic and family-related factors play a significant role in determining the severity of substance use risk among Bangladeshi adolescents. Older age, male gender, urban residence, lower educational attainment, low family income, and poor parental education were significantly associated with increased substance use risk. Among all predictors, peer influence, family conflict, and low parental education emerged as the strongest determinants of higher-risk behavior. These findings highlight that adolescent substance use is not merely an individual behavior but a multifactorial issue shaped by social and familial environments. Strengthening school-based awareness programs, improving parental supervision, and promoting family cohesion are essential strategies for prevention and early intervention.

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CONFLICT OF INTEREST

None declared

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

REFERENCES

1. Paul FA, Ganie AU, Dar DR. Substance use in university students: a comprehensive examination of its effects on academic achievement and psychological well-being. *Social Work in Mental Health*. 2024 May 3;22(3):452-84.
2. Dayan J, Bernard A, Olliac B, Mailhes AS, Kermarrec S. Adolescent brain development, risk-taking and vulnerability to addiction. *Journal of Physiology-Paris*. 2010 Nov 1;104(5):279-86.
3. Hall WD, Patton G, Stockings E, Weier M, Lynskey M, Morley KI, Degenhardt L. Why young people's substance use matters for global health. *The Lancet Psychiatry*. 2016 Mar 1;3(3):265-79.
4. Davidson LL, Grigorenko EL, Boivin MJ, Rapa E, Stein A. A focus on adolescence to reduce neurological, mental health and substance-use disability. *Nature*. 2015 Nov 19;527(7578):S161-6.
5. Degenhardt L, Stockings E, Patton G, Hall WD, Lynskey M. The increasing global health priority of substance use in young people. *The Lancet Psychiatry*. 2016 Mar 1;3(3):251-64.
6. Danpanichkul P, Duangsonk K, Diaz LA, Chen VL, Rangan P, Sukphutanan B, Dutta P, Wanichthanaolan O, Ramadoss V, Sim B, Tung D. The burden of alcohol and substance use disorders in adolescents and young adults. *Drug and alcohol dependence*. 2025 Jan 1;266:112495.
7. Sheidow AJ, McCart M, Zajac K, Davis M. Prevalence and impact of substance use among emerging adults with serious mental health conditions. *Psychiatric Rehabilitation Journal*. 2012;35(3):235.
8. Mia M, Islam MR, Hossain M, Rahman MS, Islam T, Islam MM, Atamuratova Z, Uglu VS, Shermatov K. Assessing the prevalence, determinants, and health impact of substance use among university students in Bangladesh. *BMC Public Health*. 2025 Dec 8.
9. McVie S. Adolescent smoking, drinking and drug use.
10. Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychological bulletin*. 1992 Jul;112(1):64.
11. Armoon B, Fleury MJ, Griffiths MD, Bayani A, Mohammadi R, Ahounbar E. Emergency department use, hospitalization, and their sociodemographic determinants among patients with substance-related disorders: a worldwide systematic review and meta-analysis. *Substance Use & Misuse*. 2023 Feb 23;58(3):331-45.
12. Neighbors C, Young CM, Krieger H, Tackett JL. Social influence, pressure, and norms: Vulnerability for substance use in adolescents. In *Addictions* 2015 Dec 22 (pp. 170-198). Routledge.
13. Mahalik JR, Lombardi CM, Sims J, Coley RL, Lynch AD. Gender, male-typicality, and social norms predicting adolescent alcohol intoxication and marijuana use. *Social Science & Medicine*. 2015 Oct 1;143:71-80.
14. Swadi H. Individual risk factors for adolescent substance use. *Drug and alcohol dependence*. 1999 Jul 1;55(3):209-24.
15. Allen JP, Chango J, Szewdo D, Schad M, Marston E. Predictors of susceptibility to peer influence regarding substance use in adolescence. *Child development*. 2012 Jan;83(1):337-50.
16. Lijffijt M, Hu K, Swann AC. Stress modulates illness-course of substance use disorders: a translational review. *Frontiers in psychiatry*. 2014 Jul 17;5:83.
17. Nawi AM, Ismail R, Ibrahim F, Hassan MR, Manaf MR, Amit N, Ibrahim N, Shafuridin NS. Risk and protective factors of drug abuse among adolescents: a systematic review. *BMC public health*. 2021 Nov 13;21(1):2088.
18. Dalui A, Banerjee S, Roy RP, Ray S, Mondal R, Das DK. Prevalence, Pattern and correlates of substance use among adolescents in a slum of Burdwan municipality, West Bengal: a community based study. *Ind J Youth Adol Health*. 2018;5(3):34-9.
19. Musher-Eizenman DR, Holub SC, Arnett M. Attitude and peer influences on adolescent substance use: The moderating effect of age, sex, and substance. *Journal of drug education*. 2003 Mar;33(1):1-23.
20. Kim J, Lee S, Chun J. An international systematic review of prevalence, risk, and protective factors associated with young people's e-cigarette use. *International journal of environmental research and public health*. 2022 Sep 14;19(18):11570.
21. Smriti Paul, Dr. Venice Mariya David. A Comparative Study To Assess Knowledge Regarding Substance Abuse And Its Impact On Health Among Rural And Urban Adolescents In Selected Secondary And Higher Secondary Schools Of West Bengal, With A View To Developing An Information Booklet. *SEEJPH [Internet]*. 2025 Jun. 13 [cited 2026 Jun. 13];:3-13. Available from: <https://www.seejph.com/index.php/seejph/article/view/6558>
22. Vakalahi HF. Adolescent substance use and family-based risk and protective factors: A literature review. *Journal of drug education*. 2001 Mar;31(1):29-46.
23. Poonawalla IB, Kendzor DE, Owen MT, Caughy MO. Family income trajectory during childhood is associated with adolescent cigarette smoking and alcohol use. *Addictive behaviors*. 2014 Oct 1;39(10):1383-8.
24. Visser L, De Winter AF, Reijneveld SA. The parent-child relationship and adolescent alcohol use: a systematic review of longitudinal studies. *BMC Public Health*. 2012 Oct 20;12(1):886.
25. Hamad AF, Roos LL, Bolton JM, Wall-Wieler E. Familial associations in adolescent substance use disorder: a population-based cohort study. *Addiction*. 2022 Oct;117(10):2720-9.
26. Best DW, Wilson AS, MacLean S, Savic M, Reed M, Bruun A, Lubman DI. Patterns of family conflict and their impact on substance use and psychosocial outcomes in a sample of young people in treatment. *Vulnerable children and youth studies*. 2014 Apr 3;9(2):114-22.
27. Liu J, Zhao S, Chen X, Falk E, Albarracín D. The influence of peer behavior as a function of social and cultural closeness: A meta-analysis of normative influence on adolescent smoking initiation and continuation. *Psychological bulletin*. 2017 Oct;143(10):1082.