© Journal of the Indian Academy of Applied Psychology
January 2026, Vol.52, No. 1, 406-417

Role of Protective Factors in Substance Abuse among College Students

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Substance abuse, including emerging trends like vaping, is a significant concern for student health. This study investigates the prevalence and patterns of drug use among female undergraduate students in Jammu, aiming to identify influential factors and assess the severity of abuse. A cross-sectional design was employed, with 200 undergraduate students completing standardized questionnaires. The results revealed that cough syrup was the most commonly misused substance, followed by alcohol, e-cigarettes (vaping), and "cool lip" products, primarily initiated for medical rather than recreational purposes. Notably, substance use among female students was relatively low compared to similar studies in the Jammu & Kashmir region. Mental health, as assessed by the Mental Health Inventory and PGI health questionnaire, was found to be poor. The Big Five Inventory revealed that most students exhibited traits of openness to change, agreeableness, and conscientiousness, which are positively correlated with substance abuse. However, despite these risk factors, substance abuse levels remained low, potentially due to protective factors like supportive family relationships, limited availability of illicit drugs, and frequent awareness programs under the Nasha Mukt Bharat Abhiyan (NMBA). Educational institutions' promotion of healthy lifestyles through student engagement may have also contributed to the reduced substance misuse in this population.

Keywords: protective factors, substance abuse, Nasha Mukt Bharat Abhiyan, undergraduate students

With the growing trend of substance use worldwide, it is important to focus on the causes and issues related to substance use as many young adults are engaging in drug consumption, which not only impacts their physical health but also significantly affects their mental health, relationships, and educational goals. With significant challenges to both mental and physical health, there is a substantial burden on families and communities, and results in considerable financial costs. The increasing prevalence of substance abuse globally is influenced by factors such as urbanization, socio-demographic changes, and globalization.

According to APA (n.d), "Substance abuse is a pattern of continued substance use despite substance-related problems, distress, and/or impairment" whereas Substance addiction is "psychological and/or physical dependence on the use of drugs or other substances, or on activities or behaviors". It encompasses dependency disorders and poses significant risks to public health, social welfare, and economic stability.

Substance dependence is defined as "a cluster of cognitive, behavioral, and physiological symptoms indicating continued use of a substance despite significant substance-related problems (APA Dictionary, n.d.). An estimated 3.3 million people lose their lives to alcohol abuse each year. Over 15.3 million people are affected by drug use disorders. Injection drug use has been documented in 148 countries, with 120 of

them reporting HIV cases among individuals (WHO Africa, 2024).

Caldeira et. al. (2009) highlighted the association between substance use and risky sexual behaviors among female college students, revealing that intoxicated sex often mediates the relationship between substance use and unsafe practices. Conversely, emerging economies in Latin America, Africa, and South Asia experience rising substance abuse rates due to urbanization and socio-economic challenges.

In India, substance abuse presents unique challenges due to its diverse population and socio-cultural contexts. Report on National Survey on Extent and Pattern of Substance Use in India reported by Ministry of Social Justice and Empowerment (2019) reveals widespread substance use. Around 16 crore individuals (14.6%) consume alcohol, with 5.2% being alcohol dependent. Cannabis is used by 3.1 crore people (2.8%), and 72 lakh (0.66%) face cannabis related problems. Opioid use constitutes 2.06%, with 60 lakh requiring treatment. Sedative misuse involves 1.18 crore individuals (1.08%), while inhalant use is higher in children and adolescents (1.17%) than adults (0.58%), with 18 lakh children need help for its use. Additionally, 8.5 lakh individuals engage in injecting drug (Ambekar et al., 2019).

Jaisoorya et. al. (2017) found that in Kerala 21.4% of college students had used alcohol, with high-risk users often exhibiting psychological distress and ADHD symptoms. Research indicates that substance abuse is prevalent across different socio-economic groups and geographies, with variations in patterns of use. Kaur et. al. (2019) examined substance use among female college students in Chandigarh and found a lifetime prevalence of 13.6%, with factors like curiosity, personal problems, easy availability, and familial use. Similarly, Baba et. al. (2013) reported a lifetime prevalence of 31.3% among college students in Kashmir, with tobacco, solvents, and alcohol being the most commonly abused substances. These studies emphasize the link between substance abuse and factors like age, gender, socio-economic status, and family history.

In India, particularly Jammu and Kashmir has witnessed a dramatic rise in drug abuse cases in recent years. Factors such as conflict, unemployment, poverty, and easy accessibility to drugs exacerbate the issue. The region's proximity to areas with higher rates of drug abuse, such as Punjab, Himachal Pradesh, and even Pakistan, with which it shares an international border, further intensifies the problem.

Drug addiction is a chronic condition that disrupts brain function and behavior, leading to an inability to manage the consumption of legal or illegal substances or medications. On April 4, 2023, the Standing Committee on Social Equity and Strengthening informed the Indian Parliament that there are over 13.50 lakh drug users in Jammu and Kashmir and, range in age from 18 to 75 years (Kashmir reader, 2024).

Rather et.al. (2021) revealed that tobacco was the most commonly reported substance used in two districts of Jammu and Kashmir, with 92.66% of participants indicating lifetime use. This was followed by lifetime opioid use at 90.66%. Other substances reported included cannabis (50.33%), alcohol (21.33%), and sedatives-hypnotics (18.33%). Regarding dependence, opioids were the most prevalent illicit substances at 87.33%, followed by cannabis at 43.66%. Additionally, 6.67% of respondents (n = 20) reported being admitted for substance-related issues within the past year, resulting in a calculated multiplier of 14.99.

Similarly, a study by War et.al. (2023) aimed to examine drug abuse in the

population of North Kashmir, involving 70 voluntary respondents from various drug addiction centers. Nicotine addiction was most common (57%), followed by poly-substance use (28%), and alcohol or other substances (7.1% each). Additionally, 57% of the respondents had an education level up to high school.

Sharma, et.al. (2022) found that there are approximately 1.31% of the population in Kathua district of J & K which use cannabis, 4.91% use opioids, 1.54% use sedatives, and 1.22% use inhalants, with these rates exceeding the national average. Additionally, 25,098 individuals in the region inject drugs, highlighting the widespread nature of substance abuse in the Union Territory.

Substance abuse encompasses a wide range of psychoactive substances, each with unique effects and risks. According to the Substance Abuse and Mental Health Services Administration, USA (SAMHSA, 2019) various factors can impact an individual's likelihood of developing mental health or substance use disorders. Risk factors are traits or conditions at the biological, psychological, familial, community, or cultural levels that occur prior to and are linked to an increased probability of adverse outcomes. In contrast, protective factors are attributes or conditions that either lower the chances of negative outcomes or mitigate the effects of risk factors. These protective factors can be seen as positive influences that counterbalance risks. Successful prevention strategies focus on minimizing risk factors while reinforcing protective factors that are most directly connected to the issue being addressed.

The following are the substances most frequently used in India:

a) Alcohol: According to National Family Health Survey-5 (NFHS-5), 2019-21 reports that in India 1% of women aged 15 and older consume alcohol, in contrast to 19% of men within the same age group (Ministry of Health and Family Welfare, Department of Health and Family Welfare, & International Institute for Population Sciences, 2022). A study by Ramanan et.al. (2016) found that excessive alcohol consumption causes issues like intoxication, strained relationships, injuries, and health problems such as epilepsy, anxiety, diabetes, and tuberculosis.

b) Tobacco: According to the National Non-communicable Diseases Monitoring Survey (NNMS, 2020), tobacco use among adults aged 18–69 was 32.8% in 2016-17, with 12.6% using smoked tobacco and 24.7% using smokeless tobacco. Additionally, 48.5% of adults in this group were exposed to second-hand smoke at home, work, or while traveling. According to the World Health Organization (2014), tobacco use exposes individuals to harmful chemicals that cause addiction, lung cancer, heart disease, and respiratory problems, with second-hand smoke also posing significant health risks.

c) Cannabis: Ambekar et. al. (2019) reported that cannabis, which includes Bhang (cannabis leaf), Ganja (marijuana), and Charas (hashish), is used by approximately 2.8% of India's population, or 3.1 crore people. Additionally, around 0.66% of the population, or 72 lakh individuals, require assistance for cannabis-related issues. According to the Centers for Disease Control and Prevention (2024), cannabis use can lead to cannabis use disorder, affect brain and heart health, impair driving skills, damage lung tissues, and increase risks of mental health issues like anxiety and schizophrenia.

d) Cocaine: Ambekar et al. (2019) reported that 0.18% of males and 0.01% of females in India use cocaine, totaling about 10.7 lakh users. According to National Institute on drug abuse (NIDA, 2024), cocaine, a highly addictive stimulant from the coca plant, can be consumed in various ways. Its use can lead to severe medical issues,

including addiction, overdose, and an increased risk of death due to contamination with substances like fentanyl.

e) Opioids: Ambekar et al. (2019) found that 2.1% of India's population (2.26 crore) use opioids, with heroin being the most common. The American Addiction Centers Editorial Staff (2024) noted that opioids can cause drowsiness, respiratory depression, addiction, and withdrawal symptoms. Treatment involves detox and medication-assisted therapy.

f) Cool lip (chaini khaini): According to the *Global Adult Tobacco Survey (GATS) 2 India, 2016-17*, khaini, a tobacco-lime mixture, is the most commonly used smokeless tobacco product in India, with 11.2% of adults using it. Additionally, a study by Pramanik et. al. (2013) found that the use of khaini leads to oxidative stress, which contributes to chronic airway limitations and impaired pulmonary function. Khaini users exhibited significantly lower pulmonary function measures compared to non-users.

g) Vaping: Vapes, or e-cigarettes, are battery-powered devices that heat liquid to create an aerosol, often containing nicotine (Centers for Disease Control and Prevention, 2024). Only 0.02% of adults in India use e-cigarettes aged 15 or older (GATS 2, 2016-17). Vaping exposes users to harmful substances, impairing lung health, causing addiction, and potentially leading to seizures or injuries. Dual use with regular cigarettes increases toxin exposure and worsens respiratory health (Centers for Disease Control and Prevention, 2024).

h) Cough syrup: Dankani (2012) examined the growing abuse of cough syrup among youth in five North- western states of Nigeria, with 11% of youth in the country dependent on drugs. Findings show that peer influence and mental health issues, such as depression and anxiety, are key factors driving the misuse of cough syrup. The study calls for a comprehensive approach to address this issue. Sharma (2024) reported that overdosing on cough syrup with DXM or promethazine-codeine can cause euphoria, hallucinations, severe dizziness, and impaired motor function. It may lead to life-threatening effects like seizures, respiratory depression, hypertension, or arrhythmias. Misuse for recreational purposes increases the risk of psychosis and fatal complications.

Substance abuse levels in India have been steadily increasing, with alcohol being the most commonly used substance, followed by cannabis, opioids, and sedatives. The National Survey (2019) highlights a growing concern, particularly among men, with 14.6% of the population aged 10-75 years using alcohol, and significant regional variations in substance use patterns (Ambekar et al., 2019). Substance abuse is becoming more prevalent among university students in North India, as found by Kaur et al. (2019) in their study. The rising trend emphasizes the need for examining the risk factors associated with substance abuse, as well as understanding the role of protective factors and their impact on mitigating substance use.

Research questions

R1: What are the primary risk factors associated with substance abuse among undergraduate students?

R2: What are the relevant protective factors that mitigate the risk of substance abuse among undergraduate students?

Hypotheses

H1: College students exposed to higher levels of risk factors are more likely to engage in substance abuse.

H2: Protective factors such as mental health and family support significantly reduce the risk of substance use among college students.

Method

Sample

The current study employed a convenience sampling method, specifically utilizing a self-structured questionnaire, to collect data from undergraduate students. A total of 200 participants from colleges in Jammu, aged 17 to 22 years [M=19.69, SD=0.96], were part of the study. After reviewing the responses, 188 questionnaires were deemed valid, as some were incomplete or left unmarked. Informed written consent was obtained from all participants, who were given adequate time to complete the questionnaire to ensure thoughtful and accurate responses. This targeted approach allowed a focused exploration of risk factors and protective factors in substance use within the specified demographic sample.

Tools

The PGI Health Questionnaire, developed by Verma, Wig, and Pershad (1983), assessed participants' physical and mental health. It measured distress, overall health perceptions, and adaptive functioning, providing valuable insights into the health-related factors influencing substance use.

The Mental Health Inventory (MHI), created by A.K. Srivastava (1999), evaluated psychological well-being. It covered both positive aspects like emotional stability and resilience and negative factors like anxiety and depression. This tool was critical in identifying mental health as a protective factor.

The Big Five Inventory (BFI), developed by John & Srivastava (1999), measured personality traits using the Five-Factor Model: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Traits such as high conscientiousness and agreeableness were found to be protective, while neuroticism was linked to greater risk of substance use.

Results

The study included 200 female undergraduate students in Jammu to investigate the prevalence, patterns, determinants, and risk factors of substance abuse. After exclusions, the final sample size was 188 participants. The study found that out of 188 participants, only 29.78% reported engaging in substance use. Cough syrup was the most frequently used substance (21.8%, 41 participants), primarily consumed for health-related or medicinal purposes rather than recreational activities. Alcohol was used by 3.72% of participants (7 participants), mainly in social or celebratory contexts. Both e-cigarettes and Cool lip, as emerging trends, were least reported by participants, each with a prevalence of 2.12%.

These findings highlight the predominance of easily accessible substances like cough syrup over illicit drugs, possibly due to stricter drug regulations and awareness campaigns in the region. This finding aligns with a case reported by Ahmed (2020), which highlighted the misuse of cough syrup containing dextromethorphan (DXM) among individuals seeking relief from psychological distress, including stress and symptoms associated with post-traumatic stress disorder (PTSD).

The study also explored how family structure, residence, and economic status influenced substance use patterns. Among users, 66.6% belonged to nuclear families, suggesting a lack of extended family support that could serve as a buffer against substance abuse. In contrast, 33.33% of users came from joint families, highlighting the protective role of cohesive family environments.

A significant difference was observed in the impact of residence on substance use, with 66.6% of users residing in rural areas compared to 33.33% in urban areas. This disparity may be attributed to unique

stressors and substance availability in different settings, such as greater accessibility and exposure in rural areas or limited recreational opportunities. Similarly, Jasani et al. (2019) reported a substance abuse prevalence of 30.17% among adolescents in Gujarat, with a significantly higher prevalence in rural communities (37.67%), further supporting the findings of the present study.

The majority of substance abusers belonged to lower-income groups, with nearly 68.88% reporting an annual family income below 10 lakhs. Notably, 33.33% of users fell within the 3-6 lakh income range, and 20% reported an income below 3 lakhs. This highlights that lower income is a significant risk factor for substance abuse, potentially due to financial stress and limited access to healthier coping mechanisms. While a smaller proportion (11.1%) of users had incomes above 10 lakhs, the findings suggest that economic hardship remains a primary driver of substance use behavior.

The data highlights the complex role of family relationships in substance use. While 51.11% of users reported harmonious family bonds, it suggests that even positive relationships may not always prevent substance use. A smaller proportion of users reported very harmonious relationships (20%), potentially indicating that stronger bonds may reduce the likelihood of use. Neutral (26.66%) and disharmonious relationships (2.22%) likely contributed to increased vulnerability among some participants. Awareness programs such as the Nasha Mukt Bharat Abhiyan (NMBA) have also played a role by increasing awareness of substance abuse consequences, particularly in educational settings. Furthermore, the limited availability of illicit substances due to stricter regulations has shifted misuse patterns toward over-the-counter medications like cough syrup.

Of the participants who reported substance use, 59.57% (28 participants) initiated due to medical issues, highlighting health-related vulnerabilities as a significant factor. Other reasons included 14.89% (7 participants) citing socialization, 12.76% (6 participants) due to academic stress, and 6.38% (3 participants) out of curiosity. These findings highlight the multifaceted nature of substance initiation, where individual vulnerabilities, external pressures, and social contexts intersect to shape behavior.

Living arrangements also influenced patterns of substance use. Participants living at home (42.22%) and in hostels (40%) formed the majority of users, indicating that both familial influences and peer interactions in hostels may play critical roles in shaping substance use behaviors. The nearly equal prevalence between these groups suggests that the home environment is not always a protective factor and may sometimes contribute to stress or exposure leading to substance use. Meanwhile, fewer users reported living in PG accommodations (15.55%) or on rent (2.22%), which may reflect differences in accessibility and social pressures in such environments.

Table 1. Prevalence, patterns, determinants and risk factors of substance use

Characteristics	No. of participants	Percentage
Residence		
Rural	30	66.6
Urban	15	33.33
Family structure		
Nuclear	30	66.6
Joint	15	33.33
Economic status		
Below 3 lakhs	09	20
3- 6 lakhs	15	33.33
6-10 lakhs	16	35.55
10- 15 lakhs	01	2.22

15- 20 lakhs	03	6.66
Above 20 lakhs	01	2.22
Family relationship		
Very harmonious	09	20
Harmonious	23	51.11
Neutral	12	26.66
Disharmonious	01	2.22
Living arrangement		
Home	19	42.22
Hostel	18	40
Paying guest (PG)	07	15.55
Rent	01	2.22
Reasons for substance initiation		
Psychological issue	03	6.38
Medical issue	28	59.57
Socialization	07	14.89
Curiosity	03	6.38
Academic stress	06	12.76

The findings indicate poor mental health among the participants, with a mean MHI score of 141.14, reflecting significant psychological distress. Similarly, the mean PGI score of 15.3 suggests poor personal growth or adjustment. These results are consistent with findings by Sinha (2008), who highlighted a strong link between poor mental health and substance use, demonstrating how psychological distress increases vulnerability to substance misuse.

On the BFI, majority of the students showed high levels of openness to experience, followed by agreeableness and conscientiousness and low levels of neuroticism and extraversion.. Wang (2022), reported high levels of openness to experience to be to be positively related to illegal drug use and low levels of neuroticism and high levels of conscientiousness to be negatively related to illegal drug use. Similar to these findings, despite having high openness to experience, the participants had low levels of neuroticism and extraversion which mitigated low levels of substance abuse in this sample.

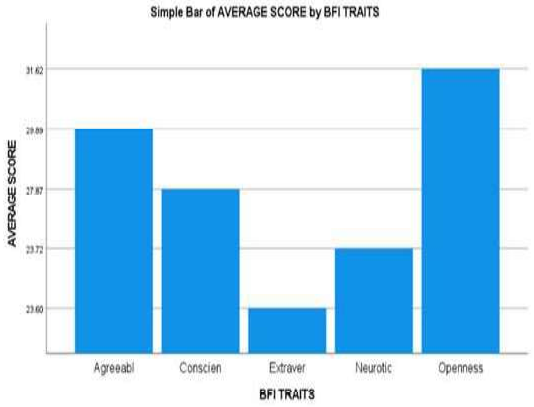

Figure 1: Average score of Big Five traits in the sample

The findings emphasize the need to address the diverse factors influencing substance use. Medical issues continue to be a primary trigger, alongside socialization and academic stress, which also play significant roles. While measures like awareness campaigns and strong family relationships have shown a positive impact, the growing misuse of accessible substances like cough syrup calls for continuous monitoring and intervention. Furthermore, differences in substance use patterns between urban and rural areas highlight the importance of region-specific strategies to tackle the unique challenges in each setting. Additionally, the poor mental health observed among participants underscores its critical role as both a risk factor and a consequence of substance use, emphasizing the need for integrated mental health and substance abuse interventions.

Discussion

The study was designed to examine the prevalence, associated determinants, risk factors, and protective factors influencing substance use among female undergraduate students in Jammu. Data was collected through standardized questionnaires

specifically utilizing a self-structured questionnaire from 200 participants belonging to the age group of 17-21 years (M=19.68). Results revealed significant relationship between psychosocial and demographic variables. It also revealed that lower and middle economic status and living arrangements like living outside the home (hostels or PG accommodations) significantly influenced substance abuse, indicating the role of financial instability and lack of familial supervision.

This study hypothesized that greater exposure to risk factors increases the likelihood of engaging in substance use. Consistent with this hypothesis, the findings revealed that factors such as health-related vulnerabilities (the primary reason for initiation among most participants), academic stress, curiosity, social pressures, family structure (with higher prevalence observed among individuals from nuclear families), and residence (greater prevalence among rural residents) significantly contributed to an elevated risk of substance use.

This aligns with a study conducted by Rogowska et. al. (2019), characteristics such as gender, housing arrangements, and site of residence are associated with excessive alcohol use and substance misuse among undergraduates. This is consistent with our research on substance use, which found that comparable demographic characteristics, like family structure and residence, whether or not one lives in an urban setting or a dorm, affect substance use behaviours.

A study by Arterberry et. al. (2024) investigated that social experiences involving higher levels of social engagement were linked to increased substance use. College experiences that facilitated a smoother transition were associated with fewer mental health issues. Additionally, alcohol consumption moderated the relationship between academic challenges and mental health, with stronger connections observed at higher levels of alcohol use which is consistent with our study, which highlights that socialization and academic stress contribute to individuals' engagement in substance abuse.

The study identifies several protective factors that play a crucial role in reducing substance use, supporting the hypothesis that protective factors significantly mitigate substance use behavior among college students. One key protective factor is the presence of strong family connections, which provides emotional support and stability. Additionally, the *Nasha Mukt Bharat Abhiyan* (NMBA) awareness program significantly contributes to educating students about the risks of substance use, especially within educational settings. Stricter regulations and the limited availability of illicit substances in the region further act as protective barriers, shifting individuals away from illicit drug use and toward over-the-counter medications like cough syrup.

The PGI Health Questionnaire showed that positive health perceptions are a protective factor against substance use, supported by the Mental Health Inventory (MHI), which highlighted emotional stability as key. Individuals with higher anxiety or despair were more likely to misuse substances. These findings stress the importance of family support, mental health, and awareness programs in preventing substance misuse. Overall, the results indicate poor mental health, with significant psychological distress and difficulties in personal growth.

Koza's (2018) study on substance misuse in Nagaland supports our hypothesis by highlighting similar barriers—lack of treatment and societal stigma—that impact substance use. Both studies stress the need for accessible treatment and awareness programs, such as Nasha Mukt Bharat Abhiyan, to address substance abuse

effectively among vulnerable populations, including college students.

Protective factors like low neuroticism, strong family relationships, awareness programs (e.g., NMBA), and limited access to illicit substances have contributed to lower substance use. However, the impact of these factors varies, as substance use patterns are influence by family structure, residence, and accessibility of substances. While protective factors play a role in reducing substance abuse, their effectiveness is influenced by environmental and situational factors.

Brumback et. al. (2021) found that psychosocial factors, such as social influence, cognitive features, and personality characteristics, play a significant role in substance use outcomes, aligning with our study's findings that protective factors (e.g., emotion regulation and higher age) can reduce substance use behavior. The study's emphasis on developmental changes—such as the diminishing protective effect of emotion regulation after age 17—also aligns with the idea that protective factors may vary in effectiveness depending on individual and developmental context. Similarly, our findings regarding the influence of family relationships and awareness programs on substance use behaviors suggest that protective factors are context-dependent.

This study reveals that risk factors such as health vulnerabilities, academic stress, and social pressures contribute to substance use among female undergraduates in Jammu. Protective factors, including strong family support, structure and economic status, awareness programs, and strict regulations, effectively reduce substance use, though their impact varies by context. These findings underscore the importance of tailored, context-specific interventions to address substance abuse.

Conclusion

The study looked at the frequency and risk factors for substance use among female undergraduate students in Jammu. The findings revealed that income and living circumstances had a substantial impact on substance usage. Lower income levels and living away from home, such as in hostels or PG lodgings, were connected to increased substance use, indicating the impact of financial strain and reduced parental supervision. Substance abuse was found to be positively linked with personality attributes. Conscientiousness, agreeableness and low neuroticism were found to be supportive factors in low substance use. Family support, religious beliefs, and awareness campaigns like the Nasha Mukt Bharat Abhiyan all played a key part in reducing substance misuse. Jammu's proximity to Punjab and Kashmir also strengthens drug accessibility. Despite these difficulties, substance usage rates have remained low due to a variety of protective factors. The findings highlight the importance of tailored interventions that promote financial literacy, family involvement, and substance abuse awareness. Future research should investigate more on environmental and cultural factors in order to better explain substance use trends.

References

Ahmed, H. (2020). Recognising post-traumatic stress disorder in cough syrup misuse. *The Lancet Psychiatry, 7*(9), 737–738. https://doi.org/10.1016/S2215-0366(20)30345-X

Ambekar, A., Agrawal, A., Rao, R., Mishra, A. K., Khandelwal, S. K., & Chadda, R. K. (2019). *Magnitude of substance use in India. Ministry of Social Justice and Empowerment, Government of India.* https://socialjustice.gov.in/writereaddata/UploadFile/Survey%20Report.pdf

American Addiction Centers Editorial Staff. (2024, October). *Opioid effects: Shorts and long term and treatment*. https://drugabuse.com/opioids/effects-of-use/

American Psychological Association. (n.d.). Substance dependence. In *APA Dictionary of Psychology*. Retrieved December 20, 2024, from https://dictionary.apa.org/substance-dependence

American Psychological Association. (n.d.). *Substance use, abuse and addiction.* https://www.apa.org/search?query=substance%20abuse

Arterberry, B.J., Peterson, S.J., & Patrick, M.E. (2024). First semester college experiences: associations with substance use and mental health. *Addictive Behaviors Reports*, 19, Article 100552. https://doi.org/10.1016/j.abrep.2024.100552

Baba, T., Ganai, A., Qadri, S., Margoo, M., Iqbal, Q., & Khana, Z. (2013). An epidemiological study on substance abuse among college students of North India (Kashmir valley). *International Journal Medical Science and Public Health*, 2(3), 540. https://www.researchgate.net/publication/312163819_An_Epidemiological_study_on_Substance_Abuse_among_college_students_of_north_India_Kashmir_valley

Brumback, T., Thompson, W., Cummins, K., Brown, S., & Tapert, S. (2021). Psychosocial predictors of substance use in adolescents and young adults: Longitudinal risk and protective factors. *Addictive Behaviors*. 121, Article 106985. https://doi.org/10.1016/j.addbeh.2021.106985

Caldeira, K. M., Arria, A. M., O'Grady, K. E., Zarate, E. M., Vincent, K. B., & Wish, E. D. (2009). Prospective associations between alcohol and drug consumption and risky sex among female college students. *Journal of Alcohol and Drug Education*, 53(2). https://www.ncbi.nlm.nih.gov/pubmed/20161574

Center for Disease Control and Prevention. (2024). *Health effects of vaping.* U.S. Department of Health and Human Services. https://www.cdc.gov/tobacco/e-cigarettes/health-effects.html

Center for Disease Control and Prevention. (2024). *Health effects of cannabis*. U.S. Department of Health & Human Services. https://www.cdc.gov/cannabis/health-effects/index.html

Center for Disease Control and Prevention. (2024, October 24). *E-cigarettes: What you need to know*. U.S. Department of Health and Human Services. https://www.cdc.gov/tobacco/e-cigarettes/about.html

Dankani, I. M. (2012). Abuse of cough syrups: A new trend in drug abuse in Northwestern Nigerian States of Kabo, Sokoto, Katsina, Zamfara and Kebbi. *International Journal of Physical and Social Sciences*. 2(8), 199-213. https://www.indianjournals.com/ijor.aspx?target=ijor:ijpss&volume=2&issue=8&article=015

Jagdish, & Srivastava, A. K. (1999). *Mental Health Inventory*. National Psychological Corporation.

Jaisoorya, T. S., Gowda, G. S., Nair, B. S., Menon, P. G., Rani, A., Radhakrishnan, K. S., Revamma, M., Jeevan, C. R., Kishore, A., Thennarasu, K., & Benegal, V. (2018). Correlates of high-risk and low-risk alcohol use among college students in Kerala, India. *Journal of Psychoactive Drugs,* 50(1), 54–61. https://doi.org/10.1080/02791072.2017.1370748

Jasani, P. K., Jadeja, Y. M., Patel, N. M., Jadeja, D. Y., Shrimali, J. B., & Purani, S. K. (2019). Prevalence of substance abuse among adolescents of urban and rural community in Surendranagar district, Gujarat. *International Journal of Community Medicine and Public Health, 6*(5), 1970-1974. https://doi.org/10.18203/2394-6040.ijcmph20191453

John, O. P., & Srivastava, S. (1999). *The Big Five trait taxonomy: History, measurement, and theoretical perspectives*. Handbook of personality: Theory and research, 2, 102- 138.

Kang, W. (2022). Big five personality traits predict illegal substance use in young people. *Acta Psychologica,* 231, 103794. https://doi.org/10.1016/j.actpsy.2022.103794

Kaur, R., Singh, T., Basu, R. & Kumar, R. (2019). Prevalence and pattern of psychoactive substance use among female students aged 18-25 years in universities of North India. *International Journal Community Medical Public Health*, 6(2), 602-609. https://doi.org/10.18203/2394-6040.ijcmph20190176

Koza, V. (2018). Drugs and alcohol abuse among women and its effect on social and health issues. *Journal of Northeast Indian Cultures*, 4(1), 83-95. https://journals.dbuniversity.ac.in/ojs/index.php/jneic/article/view/495

Ministry of Health and Family Welfare. (2020, August). *National Noncommunicable Diseases Monitoring Survey (NNMS)*, Government of India. https://www.ncdirindia.org/nnms/resources/Chapter_4_2_1.pdf

Ministry of Health and Family Welfare. (2022). *National Family Health Survey (NFHS-5)*. Government of India [Fact sheet]. https://www.data.gov.in/catalog/national-family-health-survey-nfhs-5

National Institute on Drug abuse (2024, September). *Cocaine*. U.S. Department of Health and Human Services, National Institute of Health. https://nida.nih.gov/research-topics/cocaine

Pramanik, P., Ghosh, M., Choudhary, A., Ghosh, B., & Ganguli, I. N. (2013). Effects of Khaini- a form of smokeless chewing tobacco on pulmonary. *Indian Journal of Physiology and Pharmacology, 57*(1), 84-86. https://ijpp.com/IJPP%20archives/2013_57_1_Jan%20-%20Mar/84-86.pdf

Ramanan, V. V., & Singh, S. K. (2016). A study on alcohol use and its related health and social problems in rural Puducherry, India. *Journal of family medicine and primary care*, *5*(4), 804–808. https://doi.org/10.4103/2249-4863.201175

Rather, S.S. (2024, June 24). *Drug Abuse Plagues Kashmir Valley: A Growing Concern for Public Health.* Kashmir Reader. https://kashmirreader.com/2024/06/24/drug-abuse-plagues-kashmir-valley-a-growing-concern-for-public-health/

Rather, Y.H., Bhat, F.R., Malla, A.A., Zahoor, M., Massodi, P.A., & Yousuf, S. (2021). Pattern and prevalence of substance use and dependence in two districts of Union Territory of Jammu & Kashmir: Special focus on opioids. *Journal of Family Medicine and Primary Care*, 10(1), 414-420. https://doi.org/10.4103/jfmpc.jfmpc_1327_20

Rogowska, A. M. (2019). The relationship between demographic variables and substance use in undergraduates. *International Journal of Mental Health and Addiction*, 17, 1550–1563. https://doi.org/10.1007/s11469-018-9931-7

Sharma, A., Kumar, A., & Sharma, R. (2022). Prevalence and underlying threats of drug abuse: A case on Kathua district (Jammu and Kashmir). *Journal of Drug and Alcohol Research*,11(10),11. https://www.researchgate.net/publication/374145193_Prevalence_and_Underlying_Threats_of_Drug_ Abuse_A_Case_Study_on_Kathua_District_Jammu_and_Kashmir

Sharma, S. (2024, July 4). *Side effects of overdosing on cough syrup.* Only My Health. Retrieved from https://www.onlymyhealth.com/side-effects-of-overdosing-on-cough-syrup-1720009528

Sinha, R. (2008). Chronic stress, drug use, and vulnerability to addiction. T*he New York Academy of Sciences, 1141*(1), 105–130. https://doi.org/10.1196/annals.1441.030

Substance Abuse and Mental Health Services Administration. (2019). *Risk and protective factors*. U.S. Department of Health and Human Services. https://www.samhsa.gov/sites/default/files/20190718-samhsa-risk-protective-factors.pdf

Tata Institute of Social Sciences (TISS), Mumbai, & Ministry of Health and Family Welfare,

Government of India. (2018). *Global Adult Tobacco Survey (GATS-2) India 2016-17*. Government of India. http://download.tiss.edu/Global_Adult_Tobacco_Survey2_India_2016-17_June2018.pdf

Verma, S. K., Wig, N. N., & Pershad, D. (1983). *PGI Health Questionnaire*. National Psychological Corporation.

War, A.H., Kushwaha, A.K.S., Verma, P.K. & Joshi, I. (2023). A Study on Drug Abused Youth of North Kashmir Union Territory of Jammu and Kashmir India. The *International Journal of Indian Psychology*, *11(3),* 2386-2391. https://ijip.in/articles/a-study-on-drug-abused-youth-of-north-kashmir-union-territory-of-jammu-and-kashmir-india/

World Health Organization. (2014). The effects of *tobacco use on health [fact sheet]*. https://iris.who.int/bitstream/handle/10665/204206/Fact_Sheet_TFI_2014_EN_15316.pdf

World Health Organization. (n.d.). *Substance abuse [Fact sheet]*. https://www.afro.who.int/health-topics/substance-abuse

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