Addiction & Health

https://ahj.kmu.ac.ir
10.34172/ahj.1647
AHJ. 2025;17:1647

Original Article

Factors Influencing Illicit Drug Substance Abuse and Its Perceived Psychosocial Impact Among Individuals Undergoing Deaddiction Treatment at Male Drug Rehabilitation Centers of Eastern Nepal

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Abstract

Background: Understanding drug abuse triggers is crucial for preventing youth from succumbing to addiction. This study aimed to identify the drivers and psychosocial factors influencing illicit drug-substance abuse among individuals undergoing deaddiction treatment at male drug rehabilitation centers in eastern Nepal.

Method: A cross-sectional study was conducted in 14 registered drug rehabilitation centers in Koshi Province, Nepal. The determinants and psychosocial impact were assessed using a semi-structured, five-point Likert scale questionnaire, and an overall factor mean score>2.5 was considered high. Bivariate and logistic regression analyses were used to examine the relationships between predictors and outcome variables.

Findings: Overall, 229 participants with a median age of 25 years (Q1=21, Q3=29) were surveyed; the majority had finished secondary-level education (42.4%). Diazepam (66.4%) and tramadol (48.5%) were the most frequently abused pharmaceutical products, whereas marijuana (92.1%) and brown sugar (62%) were the most commonly abused illicit substances. The most common sources of acquiring illicit products were peers (84.7%), cross-border trade (74.2%), and pharmacies (53.3%). Exploratory analysis revealed that the family, socioeconomic factors, peers, and school-related factors had a high influence on illicit drug or substance abuse, and these factors were significantly associated with higher odds of developing adverse psychosocial impact ($P<0.05$).

Conclusion: Diazepam, tramadol, marijuana, and brown sugar were the most frequently abused illicit drugs and substances in eastern Nepal. Family, socioeconomic factors, peers, and school-related factors were found to have a substantial influence on drug addiction, and these were significantly associated with high psychosocial consequences.

Keywords: Drug addiction, Illicit drugs, Nepal, Psychosocial impacts, Substance abuse

Citation: Dahal P, Shrestha S, Shrestha S, Shrestha R, KC B, Alam K. Factors influencing illicit drug substance abuse and its perceived psychosocial impact among individuals undergoing deaddiction treatment at male drug rehabilitation centers of Eastern Nepal. *Addict Health*. 2025;17:1647. doi:10.34172/ahj.1647

Received: December 28, 2024, **Revised:** August 7, 2025, **Accepted**: December 20, 2025, **ePublished:** December 24, 2025

Introduction

Drug or substance abuse refers to the recurrent use of narcotic and psychoactive substances, including pharmaceutical products, for non-medical reasons at high quantities and frequencies. Such patterns of misuse can lead to substantial physical, psychological, and social harm, including the development of addiction. [1, 2] Drug addiction significantly impairs an individual's cognitive functioning and physical health, while also posing serious challenges to public health and social stability.[3]

Globally, drug addiction remains a pressing public health concern.[4] Recent data from the United Nations Office on Drugs and Crime (UNODC, 2024) indicate that approximately 292 million individuals aged between 15 and 64 years reported using illicit drugs in 2022, with around 64 million experiencing drug use disorder.[5] These statistics highlight both the widespread nature of substance abuse and the urgent need for targeted interventions

informed by research evidence on the underlying causes and impacts of drug misuse.

Nepal is not exempt from this escalating global crisis. A 2019 national survey found that approximately 130,000 people in Nepal were current illicit drug users, with an annual increase rate of 5.1%.[6] Alarmingly, 93.3% of these users were male, and 76.2% were under the age of 30, suggesting heightened vulnerability among young males.[6] Cannabis, pharmaceutical tranquilizers, and opioids were identified as the substances most commonly misused by Nepalese youths and adolescents, driven primarily by peer influence, curiosity, pleasure, and recreational purpose, and efforts to alleviate stress or anxiety.[6-8] This increasing prevalence among youth raises significant concerns about long-term health outcomes, educational achievement, employment prospects, and social integration.

Despite these alarming trends, the majority of existing studies in Nepal have predominantly focused on substance abuse patterns and associated demographic or behavioral characteristics, with comparatively little attention given to exploring underlying causes and psychosocial impacts. [7, 8] Only a few exploratory studies have sought to understand users' perspectives.[9] Consequently, there remains a significant knowledge gap regarding the factors driving illicit drug or substance abuse and the psychological consequences, particularly within specific regional contexts. The rising trend of drug abuse among Nepalese youth, particularly in rapidly urbanizing and economically disadvantaged regions like Koshi Province, presents complex and multifaceted challenges. Limited mental health services, pervasive social stigma, high unemployment, peer pressure, and easy access to narcotics all contribute significantly to this issue. Understanding the types of substances commonly abused, the psychosocial drivers of drug-taking behavior, and the psychological impacts experienced by users is critical to developing targeted prevention strategies and effective rehabilitation programs. Therefore, this study aimed to fill the existing research gap by investigating the commonly abused illicit substances, the factors influencing their use, and the psychological impacts among individuals undergoing treatment at rehabilitation centers in Koshi Province, eastern Nepal.

Methods

Study design and setting

A cross-sectional descriptive study was conducted at 14 registered male drug rehabilitation centers in Koshi Province, eastern Nepal. These rehabilitation centers provide de-addiction and counselling treatment services to those people with chronic substance use disorder (SUD) in this eastern province of Nepal.

Sample population and criteria

The survey was conducted through a complete enumeration of all eligible participants from selected rehabilitation centers during the study period. Male individuals, irrespective of age, undergoing de-addiction treatment for illicit drugs/substance use disorder, and those who were clinically stable and free from active withdrawal syndrome, were included in the study. Individuals with severe affective or psychological disorders (as determined by rehabilitation medics and counsellors) that impaired their ability to read, comprehend, or provide informed responses, and those unwilling to participate or unable to give informed consent were excluded. All individuals who entered the study completed it, so there were no drop-outs.

Ethical approval

Ethical approval was obtained from the Nepal Health Research Council (Ref. No. 1697/2020), and institutional permission was obtained from the relevant authorities of the rehabilitation centers. Written consent was obtained from each study participant before enrolment.

Research instrument

A structured questionnaire was developed to explore the determinants and psychosocial impacts of illicit drug use within the context of rehabilitation centers in eastern Nepal. As no existing validated instrument comprehensively addressed the specific determinants and psychosocial outcomes relevant to the context of rehabilitation centers in Eastern Nepal, a tailored tool was developed to reflect the local context following the steps below:

- *Literature review:* A draft questionnaire was initially developed in English based on an extensive review of relevant literature related to drug and substance abuse, particularly studies focusing on factors influencing drug use and its psychosocial impacts.[10-12]
- *Content validity:* The draft was reviewed by a panel of researchers and health care professionals with expertise in addiction psychology and public health to ensure the questionnaire adequately captured all relevant domains and was appropriate for the local context.
- *Translation and pre-testing:* The revised questionnaire was then translated into Nepali and subjected to face validity testing with 10 participants from a randomly selected rehabilitation center in eastern Nepal. Feedback regarding clarity, comprehension, and cultural relevance was collected and incorporated into the final version.
- *Questionnaire:* The finalized questionnaire consisted of three parts: Part A captured sociodemographic information and details about types, frequency, routes, and sources of drug abuse. Part B included a 22-item questionnaire designed to assess factors influencing drug or substance abuse across four domains: family/personal factors (seven items), socioeconomic factors (seven items), peer influence (four items), and school-

related environment (four items). Part C comprised seven items evaluating the perceived psychosocial impacts of drug and substance abuse. Respondents rated items in Parts B and C using a 5-point Likert scale (1 = Very little extent to 5 = Very great extent).

- *Reliability:* Internal consistency was assessed using Cronbach's alpha on data from the full sample ($N = 229$). Reliability analysis showed that the questionnaire had good internal consistency. The overall Cronbach's alpha for Part B was 0.852. The domain-specific values for Part B were: family factor ($\alpha = 0.817$), socioeconomic factor ($\alpha = 0.753$), peer factor ($\alpha = 0.580$), and school factor ($\alpha = 0.777$). The overall Cronbach's alpha for Part C was 0.854.

Data collection procedure

The research investigator approached drug counsellors and paramedics at each participating rehabilitation center to solicit their cooperation in determining participants' eligibility and facilitating data collection. Before data collection, the participants were informed about the study, including its purpose and their involvement. Any queries regarding the questionnaire were addressed, and written consent was obtained from each participant. Data from the participants who met the eligibility criteria were collected through self-administered questionnaires.

Data analysis

Descriptive statistics were used to illustrate sociodemographic information, the types and nature of drug/substance abuse, the determinants, and the psychosocial impact, using IBM SPSS Statistics version 27.0 for Windows (IBM Corporation, Armonk, NY, USA). Numeric variables were expressed in mean or median. Categorical variables were expressed as frequency and percentage. The scores for each question in the factor under study were summed and divided by the total number of questions in that factor to obtain the individual average score (ranging from 1 to 5). A score ≥ 2.5 was considered high (more influence), and a score < 2.5 was considered low (less influence). The chi-square test for categorical variables and the Mann–Whitney U test for continuous variables were used to determine the association between patients' characteristics, determinants, and psychosocial impact. In contrast, bivariate and multivariate logistic regression were used to examine the relationships between influencing factors and perceived psychosocial impacts. $P < 0.05$ was considered statistically significant.

Results

A total of 229 participants were surveyed from 14 registered drug rehabilitation centers operating in the province. The median age and duration of stay in rehabilitation centers were 25 (Q1 = 21, Q3 = 29) years and 58 (Q1 = 30, Q3 = 85) days, respectively, and most participants had secondary-level education (42.4%) (Table 1).

Of the total participants, the majority (62.4%) reported that they had regularly used multiple illicit drugs/substances. Diazepam (66.4%) and tramadol (48.5%) were the most frequently abused pharmaceutical substances, whereas marijuana (92.1%) and brown sugar (62%) were the most commonly abused illicit drug substances. The most common routes of administration of illicit drugs/substances were inhalation (96.5%) and ingestion (91.5%). About half of the participants (48.9%) indicated that they were taking drugs three or more times a day. The most common sources of illicit products among participants were peers (84.7%), cross-border trade (74.2%), and pharmacies (53.3%) (Table 2).

Factors related to illicit drug and substance abuse

Table 3 shows the perception of participants regarding determinants of drug and substance abuse. More than half of the participants thought that family or individual factors, such as lack of parental monitoring, isolation, and lack of direction and purpose in life, had a moderate to a very significant impact on drug and substance abuse. Notably, peer grouping (83%), followed by curiosity (66.8%), drug affordability (54.3%), lack of self-esteem (49.8%), and potential to increase academic achievement (47.6%) were among highly perceived factors contributing to illicit drug abuse. The overall mean scores for the determinants were relatively high: family factors 2.74 (±0.92), socioeconomic factors 3.18 (±0.76), peer factors 3.37 (±0.76), and school factors 3.06 (±0.93).

Psychosocial impacts of drug and substance abuse

The psychosocial impact of drugs and substance abuse is presented in Table 4. It shows that more than half of the participants felt that drug abuse leads to distress in mental health (54.4 %), decreased working capacity (55.5%), decreased educational achievement (58.6%), unemployment and decline in job satisfaction (60.4%),

Table 1. Sociodemographic information of those admitted to rehabilitation centers ($n = 229$)

Characteristics		*n* (%) or median (Q1, Q3)
Location	Jhapa	77 (33.6)
	Morang	75 (32.8)
	Sunsari	77 (33.6)
Sex (male)		229 (100.0)
Education level	Primary	30 (13.1)
	Secondary	97 (42.4)
	Certificate	82 (35.8)
	Graduate and above	20 (8.8)
[a]Age	Years	25 (21, 29)
[a]Duration of rehabilitation center stay (days)	Days	58 (30, 85)

[a]median (Q1, Q3).

Table 2. Types and nature of drug and substance abuse among those admitted to rehabilitation centers ($n=229$)

Information on the abused product		*n* (%)
Information on abused illicit drug or substance (n=229)	Marijuana	211 (92.1)
	Brown sugar (non-purified form of heroin)	142 (62.0)
	Hashis	88 (38.4)
	Cocaine	10 (4.4)
	Methamphetamine	9 (3.9)
	Heroine	5 (2.2)
Pharmaceutical product abuse	Diazepam	152 (66.4)
	Tramadol	111 (48.5)
	Codeine	61 (26.6)
	Buprenorphine	38 (16.6)
	Morphine	34 (14.8)
	Pentazocine	9 (3.9)
	Pethidine	6 (2.6)
	Fixed-dose combination drugs	
	Phensedyl Dx (chlorpheniramine + dextromethorphan)	97 (42.4)
	Spasmo-proxyvon plus (dicyclomine + paracetamol + tramadol)	95 (41.5)
	Dialex DC (chlorpheniramine maleate + codeine)	71 (31.0)
	Others	27 (11.8)
Frequency of intake	Once a day or less	19 (8.3)
	Twice a day	43 (18.8)
	Thrice or more a day	112 (48.9)
	Do not remember	55 (24.0)
Route of drug intake	Inhalation	221 (96.5)
	Ingestion	209 (91.3)
	Injection	58 (25.3)
	Others	1 (0.4)
Source of the drug	Friends/peers	194 (84.7)
	Pharmacy	122 (53.3)
	Across the Indian border	170 (74.2)
	Others	10 (4.4)

and social stigma (66.8%) to a great extent. Moreover, around 45% of the participants perceived that drug abuse had led to disturbance in family relationships as well as decreased creativity and ideation to a great or very great extent. The overall mean (SD) psychosocial impact score was 3.51 (±0.88).

Factors associated with determinants of drug and substance abuse

Table 5 shows that age, education level, routes of drug intake, and frequency of use per day were not significantly associated with the extent to which family, socioeconomic factors, peer-related factors, or school factors influence drug abuse and addiction ($P>0.05$). However, in our study, the duration of stay at rehabilitation centers was significantly associated with socioeconomic factors influencing illicit drug or substance abuse ($P=0.023$).

Factors associated with perceived psychosocial impacts

Table 6 indicates that the psychosocial impact of drug and substance abuse among those admitted to rehabilitation centers was significantly and independently associated with duration of rehabilitation center stay ($P=0.025$), family factors ($P=0.003$), socioeconomic factors ($P<0.001$), peer factors ($P=0.005$), and school factors ($P<0.001$). As compared to those with low psychosocial impact, those with a high psychosocial impact had a significantly longer duration of rehabilitation center stay, high family factor influence (50.0% vs. 88.6%), high socioeconomic factor influence (50.0% vs. 88.6%), high peer factor influence (77.8% vs. 93.8%) and high school factor influence (38.9% vs. 84.5%). Multivariate logistic regression analysis of factor influence on perceived psychosocial impacts showed that individuals with high factor influence had higher odds of developing higher negative psychosocial impact than those with low factor influence for family/individual factors (AOR = 2.735, 95% CI: 1.154–6.481, $P=0.022$), Socioeconomic factor (AOR = 3.755, 95% CI: 1.482–9.514, $P=0.005$), and School factors (AOR = 6.362, 95% CI: 2.681–15.098, $P<0.001$) (Table 7).

Discussion

Our study findings indicate that male adolescents who have completed only up to secondary school are at a higher risk of addiction, often engaging in the use of various illicit substances via multiple routes of administration. This observation aligns with the findings of the National Drug User Survey 2020 (Nepal), which reported a drug use prevalence of 93.3% among males in the country, with an average age of approximately 25 years.[6] Similar trends of predominantly abusive drug use within this age group have been observed in other countries as well.[13, 14] It is widely acknowledged that adolescents, particularly younger ones, are susceptible to substance use due to their immaturity and limited capacity to make informed decisions. Therefore, gaining a comprehensive understanding of the factors driving substance use among teenagers is essential for the success of prevention and intervention efforts.[15]

Our research showed that heroin, including its unpurified form (brown sugar), and cannabis (marijuana and hashish), usually taken via inhalation, were the most abused illicit substances. This finding aligns with earlier studies, which revealed that opiates and cannabis were the illicit substances most commonly used by drug users in Nepal.[6, 16] Cannabis is widely available and has been grown in many regions of Nepal for decades, often for cultural and medicinal purposes. These factors may contribute to its misuse.[17] Another reason for the increase in opiate misuse may be related to its highly addictive properties

Table 3. Perception regarding actors influencing drug and substance abuse among those admitted in rehabilitation centers (*N*=229)

Factors	Very little *n* (%)	Little *n* (%)	Moderate *n* (%)	Great *n* (%)	Very great *n* (%)	Overall factor score mean (±sd)
Family/individual factor						
Lack of direction and purpose in life	55 (24)	44 (19.2)	41 (17.9)	30 (13.1)	59 (25.8)	2.74 (±0.92)
Rejection by family members	54 (23.6)	62 (27.1)	44 (19.2)	28 (12.2)	41 (17.9)	
Isolation	51 (22.3)	59 (25.8)	49 (21.4)	30 (13.1)	40 (17.5)	
Lack of parental monitoring	47 (20.5)	46 (20.1)	40 (17.5)	52 (22.7)	44 (19.2)	
Religious or spiritual emptiness	74 (32.3)	59 (25.8)	46 (20.1)	23 (10)	27 (11.8)	
Lack of parental love	58 (25.3)	45 (19.7)	42 (18.3)	45 (19.7)	39 (17)	
Influence of older siblings	86 (37.6)	48 (21)	42 (18.3)	20 (8.7)	33 (14.4)	
Socioeconomic factor						
Social status	34 (14.8)	22 (9.6)	63 (27.5)	50 (21.8)	60 (26.2)	3.18 (±0.76)
Economic status	25 (10.9)	43 (18.8)	52 (22.7)	63 (27.5)	46 (20.1)	
Parents' educational status	42 (18.3)	54 (23.6)	65 (28.4)	33 (14.4)	35 (15.3)	
Family size	57 (24.9)	84 (36.7)	45 (19.7)	23 (10)	20 (8.7)	
Affordability of drugs	13 (5.7)	34 (14.8)	57 (24.9)	59 (25.8)	66 (28.8)	
Influence of media	30 (13.1)	62 (27.1)	55 (24)	43 (18.8)	39 (17)	
Curiosity	17 (7.4)	27 (11.8)	32 (14)	52 (22.7)	101 (44.1)	
Peer factor						
Peer grouping	8 (3.5)	9 (3.9)	22 (9.6)	82 (35.8)	108 (47.2)	3.37 (±0.76)
Peer pressure	22 (9.6)	56 (24.5)	47 (20.5)	56 (24.5)	48 (21)	
Low self-esteem	11 (4.8)	31 (13.5)	73 (31.9)	59 (25.8)	55 (24)	
Influence of sexual partner	78 (34.1)	46 (20.1)	35 (15.3)	36 (15.7)	34 (14.8)	
School factor						
Poor performance in school	36 (15.7)	44 (19.2)	58 (25.3)	55 (24)	36 (15.7)	3.06 (±0.93)
Decrease in labor market productivity	33 (14.4)	56 (24.5)	74 (32.3)	50 (21.8)	16 (7)	
Unconcerned school administration	37 (16.2)	40 (17.5)	62 (27.1)	44 (19.2)	46 (20.1)	
Lack of potential to increase academic achievements	30 (13.1)	47 (20.5)	43 (18.8)	53 (23.1)	56 (24.5)	

SD: standard deviation

Table 4. Perceived psychosocial impact of drug and substance abuse among those admitted in rehabilitation centers (*N*=229)

Psychosocial impact	Very little *n* (%)	Little *n* (%)	Moderate *n* (%)	Great *n* (%)	Very Great *n* (%)	Overall factor score mean (±SD)
Disturbance in family relationships	33(14.4)	30(13.1)	63(27.5)	46(20.1)	57(24.9)	3.51 (±0.88)
Mental distress	10(4.4)	34(14.8)	60(26.2)	62(27.1)	63(27.5)	
Decrease in physical or working capacities.	18(7.9)	32(14)	52(22.7)	71(31)	56(24.5)	
Diminished educational achievement	23(10)	30(13.1)	41(17.9)	72(31.4)	63(27.5)	
Unemployment and decreased job satisfaction.	20(8.7)	23(10)	48(21)	67(29.3)	71(31)	
Decrease in creativity and ideation	34(14.8)	32(14)	52(22.7)	56(24.5)	55(24)	
Social stigma	13(5.7)	22(9.6)	41(17.9)	77(33.6)	76(33.2)	

SD: standard deviation

after chronic or repetitive usage. Opioids release endorphins (feel-good neurotransmitters) and activate powerful reward centers in the brain, creating feelings of pleasure, a temporary but potent sense of well-being, and the attenuation of the pain sensation [18]

In this survey, participants responded that peers, cross-border sources, and pharmacies were the familiar sources of obtaining abusive drugs and substances. A study found that the dispensation of psychoactive medicines by pharmacies is a serious concern.[7] Tramadol, diazepam, and other narcotic and psychoactive drugs fall under Category A medicines, and pharmacy practitioners are required by Nepalese law to dispense these medications only upon presentation of a valid prescription.[19] However, the results of our study suggest that such medications might have been potentially purchased from pharmacies

Table 5. Factors associated with determinants of drug and substance abuse (*N* = 229)

Factor influence		Family/individual factor influence			Socioeconomic factor influence			Peer factor influence			School factor influence		
		High (*n* = 149)	Low (*n* = 80)	*P* value	High (*n* = 189)	Low (*n* = 40)	*P* value	High (*n* = 209)	Low (*n* = 20)	*P* value	High (*n* = 177)	Low (*n* = 52)	*P* value
Age in years		25.0 (7.5)	24.0 (9.5)	0.813	25.0 (8.0)	25.0 (11.0)	0.938	24.0 (7.0)	26.5 (11.8)	0.082	24.0 (7.0)	25.0 (9.0)	0.277
[a]Duration of rehab stay in days		60 (56)	50 (58)	0.770	60 (59)	30 (40)	0.023*	55.0 (50.0)	64.0 (90.0)	0.116	59.0 (60.0)	47.5 (40.0)	0.144
Education level	*Primary*	20 (13.4%)	10 (12.5%)	0.334	26 (13.8%)	4 (10.0%)	0.433	28 (13.4%)	2 (10.0%)	0.832	22 (12.4%)	8 (15.4%)	0.717
	Secondary	59 (39.6%)	38 (47.5%)		77 (40.7%)	20 (50.0%)		87 (41.6%)	10 (50.0%)		75 (42.4%)	22 (42.3%)	
	Certificate	59 (39.6%)	23 (28.7%)		71 (37.6%)	11 (27.5%)		75 (35.9%)	7 (35.0%)		66 (37.3%)	16 (30.8%)	
	Graduate and above	11 (7.4%)	9 (11.3%)		15 (7.9%)	5 (27.5%)		19 (9.1%)	1 (5.0%)		14 (7.9%)	6 (11.5%)	
Route of drug intake	*Single*	20 (13.4%)	12 (15.0%)	0.898	23 (12.2%)	9 (22.5%)	0.144	28 (13.4%)	4 (20.0%)	0.495	24 (13.6%)	8 (15.4%)	0.915
	Multiple	129 (86.6%)	68 (85.0%)		166 (87.8%)	31 (77.5%)		181 (86.6%)	16 (80.0%)		153 (86.4%)	44 (84.6%)	
Frequency of use per day (*n* = 174)	*Once or less a day*	12 (8.1%)	7 (8.8%)	0.250	14 (7.4%)	4 (12.5%)	0.692	18 (8.6%)	1 (5.0%)	0.601	15 (8.5%)	4 (7.7%)	0.706
	Twice a day	26 (17.4%)	17 (21.3%)		37 (19.6%)	6 (15.0%)		41 (19.6%)	2 (10.0%)		34 (19.2%)	9 (17.3%)	
	Thrice or more a day	69 (46.3%)	43 (53.8%)		92 (48.7%)	20 (50.0%)		101 (48.3%)	11 (55.0%)		83 (46.9%)	29 (55.8%)	

[a]*median (IQR)*

Note: Individuals with an average factor score ≥ 2.5 were considered high (more influence) and those with an average score < 2.5 were considered low (less influence). *P* values were obtained using the Mann–Whitney U test for age and duration of rehab stay, and the chi-square test was used for other variables. * Indicates statistically significant value.

Table 6. Factors associated with perceived psychosocial impact (*N* = 229)

Factor influence		Psychosocial impact		
		High (*n* = 193)	Low (*n* = 36)	*P* value
Age in years		25 (8.0)	24.5 (8.8)	0.551
[a]Duration of rehab stay in days		60.0 (59.0)	30.0 (40.0)	0.025*
Education level	Primary	26 (13.5%)	4 (11.1%)	0.980
	Secondary	81 (42.0%)	16 (44.4%)	
	Certificate	13 (36.1%)	13 (36.1%)	
	Graduate and above	17 (8.8%)	3 (8.3%)	
Route of drug intake	Single	26 (13.5%)	6 (16.7%)	0.806
	Multiple	167 (86.5%)	30 (83.3%)	
Frequency of use per day (*n* = 174)	Once or less a day	13 (9.2%)	6 (18.8%)	0.172
	Twice a day	38 (26.8%)	5 (15.6%)	
	Thrice or more a day	91 (64.1%)	21 (65.6%)	
Family/individual factor influence	High	134 (69.4%)	15 (41.7%)	0.003*
	Low	59 (30.6%)	21 (58.3%)	
Socioeconomic factor influence	High	171 (88.6%)	18 (50.0%)	<0.001**
	Low	22 (11.4%)	18 (50.0%)	
Peer factor influence	High	181 (93.8%)	28 (77.8%)	0.005*
	Low	12 (6.2%)	8 (22.2%)	
School factor influence	High	163 (84.5%)	14 (38.9%)	<0.001**
	Low	30 (15.5%)	22 (61.1%)	

[a]*median (IQR)*

Note: Individuals with average factor influence score ≥ 2.5 and psychosocial impact score ≥ 2.5 were considered high and those < 2.5 were considered low. *P*-values were obtained using the Mann–Whitney U test for age and duration of rehab stay, and the chi-square test for other variables. * indicates significant **indicates highly significant

Table 7. Bivariate and multivariate logistic regression analysis of factor influences on perceived psychosocial impact

Factor Influence	Psychosocial impact		COR (95% CI)	*P* value	AOR (95% CI)	*P* value
	High (*n* = 193)	Low (*n* = 36)				
Family/Individual factors (ref: Low)						
High	134 (69.4%)	15 (41.7%)	3.18	0.002*	2.735	
Low	59 (30.6%)	21 (58.3%)	(1.532–6.598)		(1.154–6.481)	0.022*
Socioeconomic factor (ref: Low)						
High	171 (88.6%)	18 (50.0%)	7.773	<0.001**	3.755	
Low	22 (11.4%)	18 (50.0%)	(3.528–17.124)		(1.482–9.514)	0.005*
Peer factor (ref: Low)						
High	181 (93.8%)	28 (77.8%)	4.31	<0.003*	1.373	0.613
Low	12 (6.2%)	8 (22.2%)	(1.619–11.473)		(0.402–4.687	
School factor (ref: Low)						
High	163 (84.5%)	14 (38.9%)	8.538	<0.001**	6.362	<0.001**
Low	30 (15.5%)	22 (61.1%)	(3.934–18.533)		(2.681–15.098)	

Note: COR: crude odds ratio, AOR: adjusted odds ratio, CI: confidence interval, * indicates significant, ** indicates highly significant

without a valid prescription. Misuse and abuse of narcotic and psychoactive drugs purchased from retail pharmacies without valid medical prescriptions have also been reported in Nepal and other nations.[8,20,21] Therefore, regulatory authorities must enforce the law, which may include random and frequent auditing of the pharmacy dispensing records of such medicines and making provisions for hefty fines and punishments to discourage malpractice in pharmacies.

In our study, participants identified peers, socioeconomic factors, and school-related factors as the major determinants of illicit drug use compared to family/individual-related factors. These findings are consistent with several studies in other nations, including Nepal.[9,11-13,22-25] Teenagers are particularly adept at acquiring and using drugs through kin and curiosity, primarily through their peers. Therefore, family and school must give good attention, love, support, and monitoring, including monitoring their social and peer group, to protect adolescents from adopting substance abuse behaviour.[26,27] In this study, school factors such as the diminished potential to increase educational achievements, poor performance in school, and unconcerned school administration were found to have a moderate to a very great extent of influence on illicit drugs and substance abuse. Several studies on students have found that there is a positive association between academic stress and illicit drug use.[28,29] Teenagers need to be supported and engaged in the subject of their choice, rather than portraying high academic performance as the only means to succeed. Besides that, parents, the school caretaker, and tutors should support them in different ways, such as counselling and education, engaging them in sports, music, book clubs, and other activities to better equip them to tackle life's challenges, stress, and career issues, and prevent them from turning to illicit drug use as a means of coping with their stress.[27, 30-32]

This study has highlighted a range of behavioral and psychosocial consequences among participants who abuse illicit drugs. A majority of these individuals admitted that substance abuse negatively impacted their mental health, physical functioning, educational achievement, occupational performance, creativity, and overall job satisfaction. These findings align with previous research conducted among drug abusers in rehabilitation centers in Nepal[20, 33] and similar studies conducted in other countries.[34] Statistical analysis further revealed that family dynamics, socioeconomic status, peer influence, and school environment were significant contributing factors to these adverse outcomes. Individuals exposed to greater levels of these influences were at greater risk of adverse psychosocial consequences. These findings underscore the urgent need to mitigate these influential factors to reduce the psychological impact on drug users. Therefore, the family, peers, education, and school factors should play an essential and active role in controlling and reducing the risk of illicit drug and substance abuse among teenagers to minimize the associated harm. The government of Nepal has developed the Narcotic Control Act (1978) and the National Policy for Drug Control (2006) to control illicit drug use and develop a healthy society free from abusive drug use[35,36] However, our current research indicates that these policies and actions have not been fully implemented, leaving the country still grappling with the issue of illicit drug use.

Strengths and Limitations

This study represents one of the first quantitative investigations in Nepal to explore factors contributing to illicit drug abuse and its psychosocial impacts among drug users. By focusing on a population from multiple rehabilitation centers in eastern Nepal, the study provides

valuable insights into patterns of substance use and associated influences within a specific regional context.

However, several limitations should be acknowledged. First, data were collected from individuals currently admitted to rehabilitation centers, which limits our ability to capture their perceptions and experiences prior to treatment. As such, their responses may have been shaped by the treatment environment or influenced by social desirability and recall bias. Second, the study employed a newly developed questionnaire that underwent content and face validity assessments, supported by reliability analyses. However, the absence of comprehensive psychometric evaluation, such as test-retest reliability and construct validity testing, limits confidence in the instrument's robustness and warrants caution in interpreting the findings. Future studies should undertake comprehensive validation to enhance the reliability and generalizability of findings. Third, the study focused solely on male participants. Subsequent research should also investigate female populations to understand gender-specific determinants and psychosocial impacts of illicit drug use within the Nepalese context.

Conclusion

Diazepam, tramadol, marijuana, and brown sugar were frequently abused substances among individuals undergoing treatment in eastern Nepal. Their abuse was significantly influenced by family dynamics, socioeconomic status, peer pressure, and school environment, all contributing to adverse psychosocial outcomes. Addressing these issues requires targeted psychological interventions, such as structured counselling, mental health support services, and peer-based therapies, tailored to the needs of individuals with substance use disorders. Strengthening family engagement through targeted support programs can also foster healthier relationships and improve rehabilitation outcomes. Furthermore, school- and community-based education and prevention initiatives should be prioritized to build resilience among youth, address stigma, and promote early risk identification. A coordinated response involving healthcare providers, social services, educators, and policymakers is critical to mitigate the complex psychological and social consequences of illicit drug abuse and support long-term recovery.

Acknowledgement

We sincerely thank Sudip Yolmo, educator, social activist, and director of the "Say No to Drugs" program, Vijayapur radio station, Dharan, for his support and coordination during the data collection process. We thank the heads, counsellors, and staff of the participating rehabilitation centers for their cooperation and support with this study.

Authors' Contribution

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Competing Interests

The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

Ethical approval was obtained from the Ethical Review Board of the Nepal Health Research Council (Ref. No. 1697/2020), and institutional permission was obtained from the relevant authorities of the rehabilitation centers.

Funding

The research was funded by the University Grant Commission (UGC), Nepal (SRDI-75/76-HS-11).

Informed Consent

Written consent was obtained from each study participant before enrollment.

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