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# Perceived Family Support, Level of Depression and Commonly Abused Drug among the People with Substance Use Disorder in Rehabilitation Centres in Bagamati Province, Nepal

**Keshav Dhakal**
Little Buddha College of Health Science
**Biswash Sapkota**
biswash.sapkota@mbahs.edu.np

Madan Bhandari Academy of Health Sciences
**Surakshya Adhikari**
Western Regional Hospital
**Suresh Adhikari**
Mental Hospital
**Pratigya Sapkota**
Monaghans Pharmacy Warrnambool
**Bishal Sapkota**
Western Regional Hospital
**Santusta Adhikari**
Nepal Health Research and Innovation Foundation

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# Abstract

Substance use disorder (SUD) is an increasingly serious public health issue in Nepal, associated with significant psychological consequences. This study aimed to assess perceived family support, levels of depression, severity of drug-related problems and commonly abused substances among individuals with SUD in rehabilitation centers in Bagamati Province. A quantitative cross-sectional descriptive study was conducted among 263 participants aged ≥ 18 years. Ethical approval was obtained from the Institutional Review Committee of Madan Bhandari Academy of Health Sciences. Data were collected using a structured questionnaire incorporating the Family Support Scale, Beck Depression Inventory (BDI-Ia), and Drug Abuse Screening Test (DAST-20) and analyzed using SPSS version 16. Most participants were male (92.8%) and aged 25–50 years (62.0%), with a mean initiation age of 17.74 years. Alcohol (80.6%) was the most commonly abused substances. Nearly half (49.8%) reported high perceived family support, 41.8% experiencing moderate level of depression. Gender was significantly associated with depression ($p = 0.027$). Most participants had substantial (46.0%) or severe (33.5%) drug abuse severity. Severity was significantly associated with age ($p = 0.003$), education ($p = 0.038$), and family support ($p = 0.003$). Participants aged 18–50 years had lower odds of severe drug abuse (OR = 0.29; 95% CI: 0.13–0.66), while illiterate individuals had higher odds (OR = 4.78; 95% CI: 2.07–11.07). Low family support showed borderline association (OR = 2.68; 95% CI: 0.99–7.28). The findings highlight a high burden of substance use severity and comorbid depression, emphasizing the need for integrated, family-centered interventions.


# 1. Introduction

Substance use disorder (SUD) represents a significant global public health challenge, contributing greatly to illness, premature death, and social disruption. The burden associated with alcohol and illicit drug use constitutes a substantial share of overall disease and disability worldwide, impacting millions of people across all age groups (Birkeland et al., 2021a; Uddin, 2019). In Nepal, substance use has become an escalating concern in recent decades, with a rising number of individuals involved in both legal and illegal drug consumption. Commonly used substances include alcohol, cannabis, opioids and injectable drugs, with usage patterns shaped by socio-cultural norms, economic conditions, and environmental influences (Paul et al., 2024). A national survey reported a dramatic rise in drug users of around 91,534 in 2013 which is nearly double of 46,309 in 2007 highlighting the expanding magnitude of the issue in Nepal (Poudel et al., 2016).

SUD is not only associated with physical health consequences but also leads to profound psychological and social impairments. Individuals with SUD often experience a wide range of psychosocial problems, including impaired interpersonal relationships, occupational difficulties, and reduced quality of life(Volkow & Blanco, 2023). Depression is one of the most frequently occurring coexisting psychiatric conditions among individuals with substance use disorder. People affected by substance abuse may experience depression either as a predisposing factor or as a result of their substance use. Addressing depression in SUD patients is crucial because untreated depression can lead to higher relapse rates,

poor engagement in rehabilitation and a general decline in mental health. For instance, a study conducted in rehabilitation centres in Pokhara, Nepal reported that 38.2% of individuals with SUD had depression, with severity increasing alongside duration and frequency of substance use(Magar et al., 2025). Similarly, broader studies in Nepal have shown that depression is prevalent among populations with alcohol use disorder and other substance-related conditions, emphasizing the strong association between substance use and mental health problems(Luitel et al., 2018).

Family support plays a crucial role in both the initiation and recovery processes of substance use disorders. The family environment can act either as a protective factor or a risk factor depending on the level of emotional, social and financial support provided. Poor family functioning, lack of communication, and conflict have been associated with increased substance use and poorer treatment outcomes. Conversely, perceived family support has been shown to enhance coping mechanisms, improve adherence to treatment, and reduce relapse rates among individuals with SUD. Studies in Nepal have identified family system problems as a significant domain affecting individuals in rehabilitation settings, indicating the importance of familial relationships in the recovery process(Islam et al., 2023) .

Despite growing evidence on substance use and its associated factors in Nepal, there remains limited research that simultaneously examines perceived family support, level of depression, and commonly abused substances among individuals in rehabilitation settings, particularly in Bagamati Province(Pandey et al., 2023). This province, which includes major cities like Kathmandu and has a lot of rehabilitation centers, is an important place to study how psychosocial support, mental health and substance use patterns all work together.

Consequently, this study seeks to evaluate the perceived familial support, degree of depression, severity of substance-related issues and frequently abused substances among individuals with substance use disorder in rehabilitation centers in Bagamati Province, Nepal. The results of this study are anticipated to enhance the formulation of holistic, family-oriented and mental health-integrated strategies for substance use treatment and rehabilitation.

## 2. Methods

# 2.1 Study design and setting

A cross-sectional quantitative descriptive study design was conducted to study the assess of perceived family support, levels of depression, severity of drug use and the most commonly abused substances among individuals with substance use disorder from April to July 2025 across different rehabilitation centers in Bagamati Province, Nepal.

# 2.2 Study Participants and Sampling

The study included patients aged 18 years or older with substance use disorder who were admitted to rehabilitation centers in Bagamati Province, Nepal. People who didn't want to take part in the study or

couldn't answer the questions were not included.

A sample size of 238 was determined based on a prior study indicating a 19.1% prevalence of substance use disorder among patients admitted to rehabilitation centers in Kathmandu, Nepal (Regmi et al., 2021) and factoring in a 90% confidence interval with a 5% margin of error. Taking into account a 10% non-response rate, the final estimated sample size for the study was 263 participants.

## 2.3 Data collection tool and technique

Based on a review of existing literature, a structured survey questionnaire was developed to collect data on socio-demographic characteristics, perceived family support, level of depression, and commonly abused drugs (Birkeland et al., 2021b; Hogue et al., 2021). Part 1 was the Demographic Data Profile with six items: age, sex, ethnicity, religion, educational level and marital status. Part 2 consisted of the Family Support Scale, designed for individuals in rehabilitation centres. Participants evaluated their perceived level of family support across 20 areas, including love, respect, daily activities, religious involvement, access to information, emotional support, decision-making, personal needs, social participation, personal problems, problem-solving assistance, health, treatment, relationships with important people, financial support, food, sleep, companionship, happiness, and overall satisfaction. Each item was rated on a 4-point Likert scale ranging from 1 (none) to 4 (a great support). The total score could range from 20 to 80, with higher scores indicating a greater level of perceived family support among the participants. Specifically, a score of 20 to 35 means No Support, and a score of 36 to 50 means Little Support. Also, people who score between 51 and 65 are said to be getting Some Support, and people who score between 66 and 80, which is the highest range, are said to be getting Much Support (Uddin, 2019). Part 3 consisted of a list of 20 commonly abused substances. These included Tramadol, Phenergan, Bhang, Charas, Marijuana, Opium, Heroin, Brown Sugar, Cocaine, Cough syrup, Amphetamine, Diazepam, Nitrazepam, Calmpose, Dendrite, Thinner, Buprenorphine, Alcohol, Codeine and other substances. Part 4 measures the severity of drug-related problems using the Drug Abuse Screening Test (DAST-20) questionnaire. Total scores were categorized as follows: 0–5 (low), 6–10 (moderate), 11–15 (substantial), and 16–20 (severe)(Johnson et al., 2025). Part 4 used the Beck Depression Inventory–Ia (BDI-Ia), a 21-item tool with a 4-point Likert-type scale, to measure the level of depression. Each item on the scale looks at how bad the person's depressive symptoms are. The total scores were interpreted as follows: 0–9 indicating minimal or no depression, 10–18 indicating mild depression, 19–29 indicating moderate depression and 30–63 indicating severe depression, with higher scores reflecting greater severity of depressive symptoms (Wang & Gorenstein, 2013).

To make sure that all the important areas were covered and to improve content validity, experienced researchers and psychiatric specialists looked over the first draft of the questionnaire. After that, 10% of patients in a rehabilitation center took the questionnaire to see if it was appropriate, clear, and easy to understand. The research team carefully looked over and talked about the feedback they got from the pre-test, and they made the changes needed to finish the questionnaire.

## 2.4 Data analysis

Data were carefully checked for accuracy and entered into IBM SPSS Statistics version 16 to reduce duplication and errors. Descriptive statistics, including frequencies and percentages, were used to summarize the variables. The Chi-square test was employed to examine the association between depression levels and independent variables such as age, gender, educational status, marital status, and perceived family support. Crude odds ratios (COR) with corresponding confidence intervals were estimated using bivariate binary logistic regression to assess the relationship between depression status (present or absent) and the independent variables. A p-value of less than 0.05 was considered statistically significant.

## 3. Results

# 3.1 Socio-demographic characteristics of the participant

Out of 301 participants approached from various rehabilitation centers, 263 provided complete responses, resulting in a response rate of 87.37%. Most respondents (62%) were in the age group of 25–50 years. The mean age at initiation of substance use was 17.74 years. The majority of participants were male (n = 244, 92.8%), while females accounted for 19 (7.2%). Regarding ethnicity, 101 (38.4%) were Brahmin, 99 (37.6%) Janajati, and 63 (24.0%) belonged to other ethnic groups. In terms of education, 134 (51.0%) had completed higher secondary level, 121 (46.0%) were uneducated and only 8 (3.0%) had attained a bachelor's degree or higher. Concerning marital status, 140 (53.2%) were married and 123 (46.8%) were unmarried. Most participants began substance use during adolescence (n = 178, 66.4%), followed by young adulthood (n = 86, 32.1%), while a small proportion initiated use in middle adulthood (n = 4, 1.5%) (Table 1).

Table 1
Sociodemographic characteristics (N = 263)

| S.N | Characteristics | Frequency (%) |
|---|---|---|
| 1 | Age | |
| | 18–24 years | 72 (27.4) |
| | 25–50 years | 163 (62.0) |
| | 51 years and above | 28 (10.6) |
| 2 | Gender | |
| | Male | 244 (92.8) |
| | Female | 19 (7.2) |
| 3 | Ethnicity | |
| | Dalit | 35 (13.3) |
| | Janajati | 99 (37.6) |
| | Madhesi | 10 (3.8) |
| | Brahmin/Chhetri | 101 (38.4) |
| | Others | 18 (6.8) |
| 4 | Education Level | |
| | Illiterate | 121 (46.0) |
| | Upto Higher Secondary level | 134 (51.0) |
| | Graduate and above | 8 (3.0) |
| 5 | Marital Level | |
| | Married | 140 (53.2) |
| | Unmarried | 123 (46.8) |

## 3.2 Commonly abused drugs by participant in rehabilitation center

Alcohol (80.6%) was identified as the most commonly used substance, followed by marijuana (71.9%) and tramadol (51.3%). A moderate level of use was observed for charas (35.4%), bhang (34.2%), and brown sugar (33.5%). Substances such as cough syrup (26.2%), diazepam (28.2%), and nitrazepam (27.4%) showed comparatively lower but still notable use. In contrast, opium (12.2%), codeine (10.3%), buprenorphine (9.9%), and heroin (8.0%) had relatively low prevalence. Very minimal use was reported for amphetamine (3.8%), calmpose (4.6%), dendrite (4.2%), and thinner (2.7%). Overall, the findings

indicate that more accessible substances, particularly alcohol and marijuana, are more frequently abused than harder or less readily available drugs. Table 2 shows the frequency distribution of commonly abused substances among the respondents.

Table 2
List of Commonly abused drug by Participants

| S.N | Commonly abused drug | Yes (%) | No (%) |
|---|---|---|---|
| 1 | Tramadol | 135 (51.3) | 128(48.7) |
| 2 | Phenargan | 64 (24.3) | 199 (75.7) |
| 3 | Bhang | 90 (34.2) | 173 (65.8) |
| 4 | Charas | 93 (35.4) | 170 (64.6) |
| 5 | Marijuana | 189 (71.9) | 74 (28.1) |
| 6 | Opium | 32 (12.2) | 231 (87.8) |
| 7 | Heroin | 21 (8.0) | 242 (92.0) |
| 8 | Brown sugar | 88 (33.5) | 175 (66.5) |
| 9 | Cocaine | 21 (8.0) | 242 (92.0) |
| 10 | Cough Syrup | 69 (26.2) | 194 (73.8) |
| 11 | Amphetamine | 10 (3.8) | 253 (96.2) |
| 12 | Diazepam | 74 (28.2) | 189 (71.9) |
| 13 | Nitrazepam | 72 (27.4) | 191 (72.6) |
| 14 | Calmpose | 12 (4.6) | 251 (95.4) |
| 15 | Dendrite | 11 (4.2) | 252 (95.8) |
| 16 | Thinner | 7(2.7) | 256 (97.3) |
| 17 | Buprenorphine | 26 (9.9) | 237 (90.1) |
| 18 | Alcohol | 212 (80.6) | 51 (19.4) |
| 19 | Codeine | 27 (10.3) | 236 (89.7) |
| 20 | Others | 39 (14.8) | 224 (85.2) |

# 3.3 Perceived Family support

Among the 263 participants, the majority reported a high level of perceived family support across most domains. A large proportion indicated “much” support in areas such as love (72.8%), treatment support

(73.5%), awareness of health (67.9%), food care (61.2%), companionship (60.4%), and happiness (59.0%). However, comparatively lower levels of strong support were observed in respect (34.3%), involvement in decision-making (36.6%), understanding personal desires (29.5%), and financial support (35.8%) as represented in Table 3.

Table 3
Perceived family support (N = 263)

| S.N | Characteristics | No (%) | Little (%) | Some (%) | Much (%) |
|---|---|---|---|---|---|
| 1 | My family loves me | 11 (4.1) | 26 (9.7) | 36 (13.4%) | 195 (72.8%) |
| 2 | I get respect from my family | 45 (16.8%) | 61 (22.8%) | 70 (26.1%) | 92 (34.3%) |
| 3 | My family helps me with daily activities | 37 (13.8%) | 40 (14.9%) | 57 (21.3%) | 134 (50.0%) |
| 4 | My family helps me with religious activities | 44 (16.4%) | 31 (11.6%) | 68 (25.4%) | 125 (46.6%) |
| 5 | My family gives me useful information | 28 (10.4%) | 34 (12.7%) | 47 (17.5%) | 159 (59.3%) |
| 6 | My family give me emotional support | 33 (12.3%) | 34 (12.7%) | 72 (26.9%) | 129 (48.1%) |
| 7 | My family shares important decisions with me | 57 (21.3%) | 44 (16.4%) | 69 (25.7%) | 98 (36.6%) |
| 8 | My family understands my personal desires | 52 (19.4%) | 50 (18.7%) | 87 (32.5%) | 79 (29.5%) |
| 9 | My family helps me to participate in social events | 47 (17.5%) | 53 (19.8%) | 64 (23.9%) | 104 (38.8%) |
| 10 | My family listens my problems | 33 (12.3%) | 63 (23.5%) | 68 (25.4%) | 104 (38.8%) |
| 11 | My family helps to solve my problems | 27 (10.1%) | 42 (15.7%) | 63 (23.5%) | 136 (50.7%) |
| 12 | My family is aware of my health | 15 (5.6%) | 34 9 (12.7) | 37 (13.8%) | 182 (67.9%) |
| 13 | My family helps in my treatment | 20 (7.5%) | 26 (9.7%) | 25 (9.3%) | 197 (73.5%) |
| 14 | My family treats me as an important person | 42 (15.7%) | 57 (21.3%) | 63 (23.5%) | 106 (39.6%) |
| 15 | My family gives me money when I need it | 38 (14.2%) | 56 (20.9%) | 78 (29.1) | 96 (35.8%) |
| 16 | My family is careful about my food | 23 (8.6%) | 34 (12.7%) | 47 (17.5%) | 164 (61.2%) |
| 17 | My family is careful about my sleep | 29 (10.8%) | 47 (17.5%) | 68 (25.4%) | 124 (46.3%) |
| 18 | My family gives me companionship | 19 (7.1%) | 43 (16.0%) | 44 (16.4%) | 162 (60.4%) |

| S.N | Characteristics | No (%) | Little (%) | Some (%) | Much (%) |
|---|---|---|---|---|---|
| 19 | My family helps me to stay happy | 29 (10.8%) | 30 (11.2%) | 51 (19.0%) | 158 (59.0%) |
| 20 | I am satisfied with my family support | 41 (15.3%) | 22 (8.2%) | 49 (18.3%) | 156 (58,2%) |

Overall, 49.8% reported being satisfied with their family support, indicating generally positive support from family while only 6.8% shows now support from family as shown Table 4.

Table 4
Overall family support

| Family Support category | Frequency (%) |
|---|---|
| No support | 18 (6.8) |
| Little Support | 32 (12.2) |
| Some Support | 82 (31.2) |
| Much Support | 131 (49.8) |

# 3.4 Level of Depression and association with other factors

Depression levels were assessed using the Beck Depression Inventory (BDI-Ia), with a mean score of 23.35 ± 10.03 and categorized into minimal, mild, moderate, and severe levels. Among the 268 participants, 23 (8.75%) had minimal depression, 56 (21.3%) had mild depression, 110 (41.8%) had moderate depression, and 74 (28.1%) had severe depression.

Moderate depression was the most prevalent category across all groups. Individuals aged 25–50 years showed higher frequencies in all depression categories; however, the association between age and depression level was not statistically significant ($p = 0.791$) (Table 5). A statistically significant association was observed between gender and depression level ($p = 0.027$), with females showing a relatively higher proportion of severe depression despite lower overall counts. No statistically significant association was observed between depression levels and marital status ($p = 0.173$) or educational status ($p = 0.102$). However, a higher proportion of moderate and severe depression was found among participants with lower levels of education.

Table 5
Association of Level of Depression with other variables (Fisher exact test)

| Level of Depression | No | Mild | Moderate | Severe | P-value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| 18–24 years | 7 | 15 | 29 | 21 | 0.791 |
| 25–50 years | 12 | 34 | 69 | 48 | |
| 51 years and above | 14 | 7 | 12 | 5 | |
| **Gender** | | | | | |
| Male | 21 | 56 | 102 | 65 | 0.027* |
| Female | 2 | 0 | 8 | 9 | |
| **Marital status** | | | | | |
| Married | 12 | 36 | 59 | 33 | 0.173 |
| Unmarried | 11 | 20 | 51 | 41 | |
| **Education Level** | | | | | |
| Illiterate | 8 | 21 | 58 | 34 | 0.102 |
| Upto Higher Secondary | 13 | 34 | 51 | 36 | |
| Bachelor and above | 2 | 1 | 1 | 4 | |
| **Perceived Family Support** | | | | | |
| No support | 3 | 1 | 7 | 7 | 0.262 |
| Little Support | 3 | 5 | 14 | 10 | |
| Some support | 6 | 16 | 31 | 29 | |
| Much support | 11 | 34 | 58 | 28 | |
| *(*P < 0.05 is statistically significant)* | | | | | |

Eventually, males showed higher odds of depression compared to females; however, this association was not statistically significant (OR = 3.92, 95% CI: 0.88–17.39, p = 0.068). The wide confidence interval indicates considerable variability in the estimate.

# 3.5 Severity level and association with other factors

The DAST-20 classification indicates that the majority of participants were concentrated in the higher severity categories. Only a small proportion (4.2%) fell into the low category, while 16.3% were classified as moderate. Nearly half of the respondents (46.0%) were in the substantial category, and considerable proportions (33.5%) were categorized as severe, with a mean severity score of 13.30 ± 3.96. Overall,

many participants reported notable drug-related problems across multiple domains assessed by the DAST-20. Detailed findings from the drug use questionnaire are presented in Table 6.

Table 6
Drug use questionnaire

| Questions | Yes (%) | No (%) |
|---|---|---|
| Have you used drugs other than those required for medical reasons? | 163 (62.0) | 100 (38.0) |
| Have you abused prescription drugs? | 120 (45.6) | 143 (54.4) |
| Do you abuse more than one drug at a time? | 185 (70.3) | 78 (29.7) |
| Can you get through the week without using drugs? | 153 (58.2) | 110 (41.8) |
| Are you always able to stop using drugs when you want to? | 132 (50.2) | 131 (49.8) |
| Have you had "blackouts" or "flashbacks" as a result of drug use? | 159 (60.5) | 103 (39.2) |
| Do you ever feel bad or guilty about your drug use? | 217 (82.5) | 46 (17.5) |
| Does your spouse (or parents) ever complain about your involvement with drugs? | 231(87.8) | 32 (12.2) |
| Has drug abuse created problems between you and your spouse or your parents? | 230 (87.5) | 33(12.5) |
| Have you lost friends because of your use of drugs? | 209 (79.5) | 54 (20.5) |
| Have you neglected your family because of your use of drugs? | 200 (76.0) | 63 (24.0) |
| Have you been in trouble at work because of drug abuse? | 215 (81.7) | 48 (18.3) |
| Have you lost a job because of drug abuse? | 168 (63.9) | 95 (36.1) |
| Have you gotten into fights when under the influence of drugs? | 209 (79.5) | 54 (20.5) |
| Have you engaged in illegal activities in order to obtain drugs? | 130 (49.4) | 133 (50.6) |
| Have you been arrested for possession of illegal drugs? | 110 (41.8) | 153 (58.2) |
| Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? | 190(72.2) | 73 (27.8) |
| Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding, etc.)? | 135 (51.3) | 128 (48.7) |

| Questions | Yes (%) | No (%) |
|---|---|---|
| Have you gone to anyone for help for a drug problem? | 169 (64.3) | 94 (35.7) |
| Have you been involved in a treatment program specifically related to drug use? | 172 (65.3) | 91 (34.6) |

The association between socio-demographic variables and DAST-20 severity levels is presented in the Table 7. A statistically significant relationship was observed for age ($p = 0.003$), education level ($p = 0.038$) and perceived family support ($p = 0.003$). Participants aged 25–50 years exhibited higher proportions in the substantial and severe categories compared to other age groups. Similarly, individuals with lower educational attainment (illiterate and up to higher secondary level) were more likely to fall within the higher severity categories. Perceived family support showed a significant association, with lower levels of support corresponding to greater severity of drug abuse. In contrast, no statistically significant association was found for gender ($p = 0.218$) and marital status ($p = 0.101$), indicating that these variables were not significantly related to DAST-20 severity levels in this study.

Table 7
Association of level of severity with other factors (N = 263)

| Level of severity | Low | Moderate | Substantial | Severe | P-value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| 18–24 years | 2 | 14 | 33 | 23 | 0.003* |
| 25–50 years | 5 | 21 | 74 | 63 | |
| 51 years and above | 4 | 8 | 14 | 2 | |
| **Gender** | | | | | |
| Male | 10 | 37 | 113 | 84 | .218 |
| Female | 1 | 6 | 8 | 4 | |
| **Marital status** | | | | | |
| Married | 5 | 30 | 63 | 42 | 0.101 |
| Unmarried | 6 | 13 | 58 | 46 | |
| **Education Level** | | | | | |
| Illiterate | 5 | 30 | 52 | 34 | 0.038* |
| Upto Higher Secondary | 6 | 12 | 65 | 51 | |
| Bachelor and above | 0 | 1 | 4 | 3 | |
| **Perceived Family Support** | | | | | |
| No support | 1 | 6 | 6 | 5 | 0.003* |
| Little Support | 0 | 3 | 11 | 18 | |
| Some support | 2 | 10 | 52 | 18 | |
| Much support | 8 | 24 | 52 | 47 | |
| *(*P < 0.05 is statistically significant)* | | | | | |

Table 8 illustrates the relationship between selected variables and severe drug abuse as measured by DAST-20. Age and educational status were significantly associated with severity. Participants aged 18–50 years had significantly lower odds of severe drug abuse compared to those aged ≥ 51 years (OR = 0.29, 95% CI: 0.13–0.66, p = 0.005). In contrast, illiterate individuals were significantly more likely to experience severe drug abuse than literate participants (OR = 4.78, 95% CI: 2.07–11.07, p = 0.001). Although perceived family support was not statistically significant, individuals with low support demonstrated higher odds of severe drug abuse (OR = 2.68, 95% CI: 0.99–7.28, p = 0.052), suggesting a borderline association.

Table 8
Association of Selected Variables with Severe Drug Abuse (DAST-20) (N = 263)

| Variable | Category | OR | 95% CI | p-value |
|---|---|---|---|---|
| **Age** | 18–50 years | 0.29 | 0.13–0.66 | 0.005 |
| | ≥ 51 years | 1.00 (ref) | - | - |
| **Education Level** | Illiterate | 4.78 | 2.07–11.07 | 0.001* |
| | Literate | 1.00 (ref) | | |
| **Perceived Family Support** | Low Support | 2.68 | 0.99–7.28 | 0.052 |
| | High Support | 1.00 (ref) | - | - |
| *(*P < 0.05 is statistically significant)* | | | | |

# 4. Discussions

This study examined patterns of substance use, psychosocial factors and their relationship with depression and the severity of drug abuse among individuals in rehabilitation settings. The findings revealed a substantial burden of substance-related problems, with the majority of participants classified within the substantial to severe ranges of drug use severity (DAST-20), alongside a high prevalence of moderate to severe depression. These results underscore the complex interplay between substance use severity, mental health conditions, and social factors such as educational status and family support.

The majority of participants were aged 25–50 years (62.0%), indicating that substance abuse remains highly prevalent among economically productive age groups. This is consistent with Monitoring the Future's (MTF) US national findings from 2014, the prevalence of age 35 annual alcohol use was 89.2%, that of 30 day alcohol use was 73.1%, and that of two week binge drinking (five or more drinks in a row) was 24.0%; the prevalence of age 35 annual marijuana use was 20.0% and that of 30 day marijuana use was 11.1%. However, the epidemiological data indicates that the prevalence of alcohol use disorders peaks between ages 18–25 years old, indicating that young adults may be at greater risk for problematic alcohol use(Brumback et al., 2021). Similarly in one of the study conducted in Rupandehi district of Nepal shows that Opioid and alcohol dependence were the most common substance use disorders(Dhungana et al., 2025) among patients attending the rehabilitation center which is also very similar to our study in which alcohol users were in significant number. The mean age of initiation of substance use in this study was 17.74 years, which is comparable to findings from World Vision International Nepal, where the median age of substance use was reported as 17 years. However, the age of first-time use differed across substances, with earlier initiation observed for tobacco (13.97 years),

followed by alcohol (14.55 years) and cannabis (15.91 years)(Poudel & Gautam, 2017). The predominance of males (92.8%) in this study aligns with National Survey on Drug Use and Health Data conducted by Ellis et al., 2024 men had higher odds of reporting access to and lifetime use of illicit drugs(Ellis et al., 2024; Gurung et al., 2017). This finding is also very similar with the finding in which men reported higher rates of non-prescription drug use than women that is consistent with a well-established body of research on gender differences in risk-taking and substance use(Gandhi et al., 2026).

A significant association was observed between age and severity of drug abuse (p = 0.003), with individuals aged 25–50 years showing higher proportions of substantial and severe use. This is supported by the fact that the availability of illicit drugs appears to be widespread, with the majority of college students reporting easy access to and opportunity to use marijuana and prescription stimulants. Second, the ability for parents to exert a direct protective effect through supervision and monitoring of whereabouts and activities decreases substantially during the college years, at least for students who live away from home(Arria et al., 2017). Further in another study the mean DAST-20 score was 16.29 in the SUD group, indicating the intensity of substance abuse in this group which is very similar to our study in which score was found to be 13.30 ± 3.96(Salehi et al., 2012). Similarly, education level showed a strong association with severity (p = 0.038), where illiterate participants had significantly higher odds of severe drug abuse (OR = 4.78) which is very similar to the study by Izutsu et al., in which Non-school-attendance has higher DAST-20 and Adolescent Alcohol Involvement Scale scores(Izutsu et al., 2009).

Perceived family support also showed a significant relationship with severity of drug abuse (p = 0.003). Participants reporting low family support had higher odds of severe substance use, while those with stronger support demonstrated comparatively lower severity. This is very similar with the study of Birkeland et al., in which family support was lowest in the SUD and Mental Disorder groups, and these two groups also rated their social support at a similarly low level, substantially lower than did the Physical Disorder sample(Birkeland et al., 2021c). It has been observed that substance use disorders (SUDs) within a family disrupt overall family functioning, and as the condition progresses, the quality of family relationships tends to decline(Orford et al., 2010). This is further supported by our study, where a borderline association was found in the adjusted model (OR = 2.68, p = 0.052), suggesting that family dynamics play a significant role in influencing the severity of substance use. Our study also demonstrated a significant association between depression and perceived family support (p = 0.003) which is very similar to Chang et al., in which depression was found to be negatively and significantly associated with various sources of perceived support(Chang et al., 2021). The findings of the present study highlight the important role of perceived family support and perceived friends support in decreasing depression among individuals diagnosed with substance use disorders.

The prevalence of moderate to severe depression (69.9% combined) observed in this study highlights the strong comorbidity between substance use disorders and depressive symptoms. This finding is consistent with the finding from Gyawali et al., which shows that 51.1% of patients being treated for SUDs in Kathmandu Valley treatment centers experienced high psychological distress symptoms(Gyawali et al., 2016). As expected this rate is considerably above those found in community

settings for the general population of Nepal, where studies have reported psychological distress rates from 9.8% to 33.7%(Ba et al., 2009). In the study by Neupane et al. only 51 (30.2%) out of 169 patients with AUD had recently experienced depressive symptoms as measured by the Hopkins Symptoms Check List-25 (Clarke et al., 2014) and 36% had experienced at least one major depressive episode assessed by the WHO's Composite International Diagnostic Interview in the preceding 12 months. Further, the present study included slightly higher proportions of younger respondents who are known to report moderate to severe level of depression. Comparisons with prevalence data from other countries also show a wide range of distress rates. Comparable findings to those of the present study where reported by a Jamaican study of 56 patients treated for SUDs (Reid et al., 2011), where 42.8% reported severe or very severe depression symptoms on the Kessler-10- scale and a study from Hunan Province, China, where 43% of heroin-dependent patients in a treatment center showed depressive symptoms and 53% anxiety symptoms as assessed by the Zung's Self-Rating Depression (SDS)/Self-Rating Anxiety Scales (SAS).Additionally, the self-medication hypothesis suggests that individuals with mood and anxiety disorders may turn to substances such as alcohol or drugs to alleviate psychological discomfort, which can, over time, lead to the development of SUDs(Turner et al., 2018). This high rate of depression is explained by the fact that the study included only people who were admitted to the rehabilitation center due to substance abuse disorder(Liao et al., 2011).

Overall, the findings of this study emphasize that substance use severity is strongly influenced by educational status, age, and family support, while psychological comorbidity remains highly prevalent among rehabilitation populations. These results underscore the importance of integrated treatment approaches that address not only substance use but also mental health and family-based interventions.

# 5. Conclusion

This study reveals a high burden of substance use disorder among individuals in rehabilitation centers in Bagamati Province, with most participants experiencing substantial to severe drug abuse and moderate to severe depression. Alcohol, marijuana, and tramadol were the most commonly used substances, with early initiation occurring during adolescence. Substance use severity was significantly associated with age and educational status, while lower perceived family support was linked to greater severity and depressive symptoms. These findings highlight the need for integrated treatment approaches that address both substance use and mental health, along with the inclusion of family-centered interventions to improve recovery outcomes and reduce relapse.

# Declarations

### Data Availability Statements

Research data can be shared upon request.

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**CRediT authorship contribution statement**

**Biwash Sapkota (BS):** Initial conception of the paper, search the database and remove the duplication and writing of the manuscript. **Surakshya Adhikari (SA)**: Peer review **Bishal Sapkota (BS):** Proof reading of the manuscript and data management. **Keshav Dhakal (KD):** Manuscript writing and data extraction. **Santusta Adhikari (St A):** Quality assessment was carried out independently. **Pratigya Sapkota (PS):** Conceptualization.

**Consent to Participate declarations**

Informed consent was obtained from all participants prior to the study, and only participants aged above 18 years were included.

**Human Ethics**

Ethics approval was obtained through the Institutional Review Committee of Madan Bhandari Academy of Health Sciences, Hetauda, Nepal (IRC Approval number:IRC-67-081-82).

**Clinical trial number**

Not applicable.

## Consent for publication

Not applicable.

**Accordance statement**

The study was conducted in-accordance with STROBE guideline

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