e-ISSN: 0975-9506, p-ISSN: 2961-6093

Available online on www.ijpqa.com

International Journal of Pharmaceutical Quality Assurance 2025; 16(9); 211-215

Original Research Article

Clinical Correlates and Predictors of Self-Harm Among Men with Substance Use Disorders

Harshpreet Kour[1], Gunjan Solanki[2], Suman[3], Yogesh Satija[4]

[1]Junior Resident, Department Of Psychiatry, S.M.S Medical College, Jaipur, Rajasthan, India
[2]Professor, Unit Head and Head of Department, Department of Psychiatry, S.M.S Medical College, Jaipur, Rajasthan, India
[3]Junior Resident, Department Of Psychiatry, S.M.S Medical College, Jaipur, Rajasthan, India
[4]Senior Professor, Department of Psychiatry, S.M.S Medical College, Jaipur, Rajasthan, India

Received: 26-06-2025 / Revised: 24-07-2025 / Accepted: 27-08-2025
Corresponding Author: Dr. Harshpreet Kour
Conflict of interest: Nil

Abstract:

Substance use disorder (SUD) is a recognized risk factor for deliberate self-harm (DSH), yet limited research has examined its clinical and demographic predictors in Indian male populations. This cross-sectional study aimed to assess the patterns and predictors of self-harm among men with SUD. Conducted at the Psychiatry Department of SMS Medical College, Jaipur, from October 2023 to September 2024, the study included 100 male outpatients aged 18–60 years, diagnosed with SUD as per DSM-5 criteria. Participants were evaluated using a semi-structured proforma, the Deliberate Self-Harm Inventory (DSHI). The mean age of participants was 35.4 years. Nicotine (80%), opioids (68%), and alcohol (66%) were the most commonly used substances, with cannabis use reported by 51%. Poly-substance use was prevalent, and the most frequent combination involved alcohol, nicotine, and cannabis. DSH was reported in 31% of the sample. A statistically significant association was found between cannabis use and DSH ($p = 0.003$), suggesting cannabis as an independent predictor of self-harming behavior. The majority of participants were married, urban residents, and lived in joint families. These findings highlight the urgent need for comprehensive psychiatric evaluation and integrated intervention strategies targeting high-risk individuals within addiction treatment services.

Keywords: Substance use disorder, deliberate self-harm (DSH), Psychiatric Comorbidity, Poly-substance Use, etc.

Introduction

Substance use is a recognised risk factor for self-harm (i.e., intentional, non-habitual self-injury with or without intent to die) and completed suicide [1]. World Health Organization estimates that there are over 8 lakh suicide deaths every year, amounting to one death for every 40s [2].The obsessive use of psychoactive drugs despite serious negative consequences is a hallmark of substance use disorder (SUD), a chronic and recurring condition. It is a major public health concern globally, impacting individuals, families, and societies [3]. An important risk factor which has been shown to significantly contribute to an increased risk of suicide is substance use [4].

Alcohol use was the seventh most important risk factor for deaths and disability adjusted life years (DALYs) globally in 2016, accounting for 2.2% of age-standardized deaths among females and 6.8% of age-standardized deaths among males. The WHO estimates that 2.1% of Indian adults over the age of 15 suffer from alcohol abuse (3.8% of men and 0.4% of women). Substance use disorders cause a tremendous burden on the individual, family, and community as a whole. [5] Recent studies have found a high prevalence of nonsuicidal self-harm behavior of up to 50% in patients with substance use, as compared to a 20% prevalence of suicidal behavior [6].

Substance abuse is becoming a bigger issue in India, as seen by rising production and consumption indices for substances of use, particularly alcohol, and the fact that drinking starts at a much earlier age. Hence, it is of interest to understand the various facets of the relationship between substance use disorder and the family in the Indian context [7]. Almost 20% of patients visiting the emergency department with a history of self-harm have been found to suffer from at least one substance use disorder [8], making substance use one of the most common risk factors associated with a suicide attempt. [9] Conversely, patients with substance use disorders are at an increased

risk of suicide and are more likely to harm themselves than nonusers [10]. It has been theorized and demonstrated that intoxication impairs judgment, reduces inhibition and restraint [11] as well as increases agitation, aggression, and distress [12] thus enabling self-harm behaviours. Most of the evidence that exists is for alcohol use, and the influence of other substances on self-harm behavior is limited.

Hence, this study aims to find out the clinical factors and events that are associated with an increased risk of deliberate self-harm behaviour in these patients.

Review of literature: The aim of Gupta et al.[13] study was to identify the trends and clinical and sociodemographic factors of self-harm in individuals with substance use disorders. The Deliberate Self-Harm Inventory was used to measure self-harm patterns in 300 male patients, and mediation analysis was used to ascertain if clinical factors influenced self-harm through sociodemographic factors. Self-harm occurred at a rate of 32.7%. It was substantially linked to being younger, single or separated, unemployed, having a history of injecting drugs, engaging in high-risk sexual conduct, and having a cannabis use problem.

Breet et al. (2018) studied the epidemiological data about the prevalence, correlates, and patterns of medical service utilisation among self-harm patients who used substances at the time of self-injury. About 20% of patients said they had used drugs or alcohol when they harmed themselves. Higher percentages of substance-using patients compared to other self-harm patients had depressed states at admission, used more medical resources and needed longer hospital stays, reported a prior episode of self-harm, had a history of self-harm, and intended to die as a result of their injuries. The proportionate differences were consistent with the international literature, even though the observed differences were not statistically significant ($p > 0.05$).

Gates et al. (2017)[14] examined the population of a state prison system (10,988 out of 13,079) to identify associations among SUD (alcohol, cannabis, intravenous drugs, narcotics, and tobacco smoking), mental health disorders (anxiety, bipolar, depression, and psychotic disorders), and suicide attempts. Groups with a proven SUD or mental health disorder had a 2.0 and 9.2 times higher chance of attempting suicide, respectively, than counterparts without these issues. This difference was substantial in both cases ($p < 0.0001$). The groups with SUD and mental health conditions also differed significantly in terms of suicide attempts. Offenders who had comorbid bipolar disorder, alcohol and depression, or cannabis and depression were most likely to attempt suicide. Suicide attempts while incarcerated are documented, which shows awareness but also points to the need to keep improving screening and assessing environmental conditions.

Material and Methods

Study Design and Setting: This cross-sectional study was carried out at the SMS Medical College and Hospital's psychiatry department in Jaipur, Rajasthan, India. The study was approved by the institutional ethics committee and carried out during a one-year period from October 2023 to September 2024.

Study Population: The study population included male patients aged between 18 and 60 years diagnosed with substance use disorder (SUD) as per the DSM-5 criteria, attending the outpatient department (OPD) of Psychiatry.

Inclusion Criteria

- Male patients aged 18–60 years.
- Diagnosed with Substance Use Disorder as per DSM-5.
- Abstinent for at least 15 days.
- Able to understand Hindi or English.
- Provided informed consent.

Exclusion Criteria

- Presence of comorbid major medical illness.
- Patients unwilling to participate or unable to provide consent.

Sample Size and Sampling Technique

Sample size has been calculated as 85 (rounded off to 100) at 0.05 α (Type-1) error and 80% power using prevalence of self-harm in patients of sub-stance-use disorder as 32.7% as per seed article.

$$n = \frac{Z_{1-\alpha/2}{}^2 pq}{l^2}$$

Here, n = sample size

$Z_{1-\alpha/2} = 1.96$

p = 32.7%

q = 67.3%

l = 10% (absolute error).

Study Tools

- Semi-structured proforma: Collected socio-demographic and clinical data.
- Deliberate Self-Harm Inventory (DSHI): 17-item inventory assessing various self-harm methods.

Procedure: Eligible participants were recruited from the psychiatry OPD. After obtaining written informed consent, trained investigators administered the study tools. Collected data included demographic details, clinical history of

substance use, legal issues, self-harm behaviour, and psychiatric diagnoses.

Statistical Analysis: SPSS software was used to examine the data. Means, standard deviations, and frequencies were used to display descriptive statistics. For inferential statistics, cross-tabulations, t-tests, and chi-square tests were employed. A p-value of <0.05 was considered statistically significant

The present study was conducted to evaluate the patterns and predictors of deliberate self-harm and psychiatric comorbidities in male patients diagnosed with substance use disorder (SUD).

A total of 100 patients were included. The results are presented in a systematic manner covering sociodemographic data, substance use patterns, self-harm behaviours, psychiatric comorbidities, and predictors of self-harm.

Results

Table 1: Sociodemographic Characteristics of Participants (N = 100)

Variable	Value
Age (Mean ± SD)	35.4 ± 10.96
Age 18–30	36%
Age 31–40	35%
Age 41–50	16%
Age 51–60	13%
Married	54%
Unmarried	28%
Separated/Divorced/Widowed	18%
Graduate/Postgraduate	23%
Urban Residence	51%
Joint Family	59%

Most participants were under 40 years old, married, and living in joint families. A significant portion were urban residents and had completed graduation or higher education.

Table 2: Prevalence of Individual Substance Use

Substance Used	Frequency (%)
Nicotine	80%
Opioids	68%
Alcohol	66%
Cannabis	51%

Nicotine was the most commonly used substance, followed by opioids and alcohol. More than half of the patients used cannabis.

Table 3: Most Common Substance Use Combinations

Substance Combination	Frequency (%)
Alcohol + Nicotine + Cannabis	24%
Alcohol + Nicotine	20%
Nicotine + Opioid	10%
Alcohol + Cannabis	10%
Nicotine + Opioid + Cannabis	12%
Others (varied combinations)	24%

Poly-substance use was common. The combination of alcohol, nicotine, and cannabis was the most frequent.

Table 4: Association between Cannabis Use and Deliberate Self-Harm

Cannabis Use	DSH Present (n=31)	DSH Absent (n=69)	Total (n=100)	p-value
Yes	23	28	51	0.003*
No	8	41	49	

The table shows a significant link between cannabis use and deliberate self-harm (DSH). Among cannabis users, 45.1% had engaged in DSH, compared to only 16.3% of non-users. The p-value of 0.003 indicates a statistically significant relationship, suggesting that cannabis users may be more prone to self-harming behavior.

Discussion

The present study was conducted to determine the patterns and predictors of a history of self-harm in patients with substance use disorders attending the outpatient clinic in a tertiary drug dependence treatment center. Male patients diagnosed with substance use disorder exhibited diverse sociodemographic profiles and substance use

patterns alongside psychiatric comorbidities and deliberate self-harm predictors.

Most participants in this study were under 40 years old, lived in joint families and were mostly married urban dwellers. Such findings align with results obtained by Gupta et al. (2019), who reported younger age and being single or separated as significant correlates of self-harm. Younger individuals and those separated or single were significantly correlated with self-harm, according to a report released fairly recently in 2019. A substantial number of married participants in our study also reported DSH, suggesting marital status may not be protective in Indian sociocultural contexts where familial discord and financial pressures often coexist with SUD. Substances like nicotine at eighty percent, and opioids at sixty-eight percent were used frequently alongside alcohol, at sixty-six percent. Cannabis use was reported in 51% of patients and poly-substance use was highly prevalent. Alcohol, nicotine and cannabis combo was most prevalent apparently among users Cooner et al. (2019), who highlighted poly-substance use, especially involving alcohol, as a prominent risk factor for self-harm and suicide.

A notable and statistically significant association ($p = 0.003$) was found between cannabis use and DSH. This corroborates the findings of Gupta et al. (2019), who also identified cannabis use as a strong predictor of self-harm among individuals with SUD. The psychoactive properties of cannabis, which can exacerbate anxiety, paranoia, and impulsivity, may contribute to this risk. The presence of cannabis dependence was significantly associated with a history of self-harm. Previous literature has shown that the increase in suicidality conferred by cannabis is usually due to another psychiatric disorder [15].

While the current manuscript does not specify detailed data on psychiatric comorbidities, the literature consistently demonstrates a high comorbidity between SUD and mood, anxiety, or psychotic disorders. Gates et al. (2017) found that inmates with both SUD and mental health disorders had significantly elevated risks for suicide attempts, especially when comorbidities such as bipolar disorder and depression were present. Our study further reinforces the need for routine psychiatric screening in SUD patients.

The DSH prevalence in our study (31%) aligns closely with the 32.7% reported by Gupta et al. (2019). Similarly, Breet et al. (2018) and Grover et al. (2016) documented high prevalence of DSH in SUD patients, with common associations being depression, previous history of self-harm, and longer hospital stays. Unlike some studies where alcohol was the primary substance linked to DSH, our findings emphasize the independent and significant role of cannabis.

The Indian context, marked by sociocultural stigma, limited psychiatric resources, and increasing urban stressors, may further aggravate the vulnerability of men with SUD to self-harm. The high prevalence of DSH in this population demands integrated management approaches that address not only addiction but also underlying psychological distress, impulsivity, and environmental stressors.

Conclusion

This study highlights the significant prevalence of deliberate self-harm among male patients with substance use disorder and identifies cannabis use as an independent predictor of such behavior. The findings underscore the urgent need for comprehensive psychiatric evaluation and tailored intervention strategies in this population.

Given the complex interplay between poly-substance use, psychiatric comorbidities, and sociocultural stressors, early identification of at-risk individuals through routine screening, especially for cannabis users, is crucial. Integrated treatment models combining addiction therapy with psychiatric care may mitigate the risk of self-harm and improve patient outcomes.

Further longitudinal studies with larger, more diverse samples are warranted to explore causality and develop targeted prevention strategies in this high-risk group.

Limitations:

This study provides valuable insights into the psychosocial and clinical links between deliberate self-harm (DSH) and substance use disorders (SUD), but several limitations affect its scope. The sample included only male outpatients, limiting applicability to females and inpatients with potentially different profiles. Its cross-sectional design prevents causal conclusions, highlighting the need for longitudinal studies to explore how psychiatric comorbidities and substance use relate to DSH over time. Reliance on self-reported data raises concerns about recall bias and social desirability effects, especially with stigmatized behaviors. Additionally, the study did not assess the severity of psychiatric conditions or substance dependence, nor did it use standardized tools to examine personality traits—factors that could offer deeper insight into vulnerability for self-harm and addiction.

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