



Psychiatric Comorbidities among Individuals with Frequent Self-Harm Episodes in Patient with Substance Abuse Disorders

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Abstract

Background: There is an increased risk of self-harm and psychiatric disorders among individuals with Substance Abuse Disorders. Concurrent physical and mental illness further accelerates the incidence of self-harm and suicide.

Objective: To study psychiatric comorbidities among individuals with frequent self-harm episodes in patient with substance abuse disorders

Methods: A sample of 100 male patients fulfilling DSM 5 criteria of substance use disorder in outpatient Psychiatry Department were selected. A semi-structured proforma for collecting data on socio-demographic profile, clinical presentation, legal complications, events preceding. MINI and DSHI were administered to the study population. Descriptive Statistics were used for the Socio-Demographic Variables. Correlation of the final

scores with the disease severity was carried out using relevant statistical test.

Results: The mean age of patients was 35.40 ± 10.964 years, the most frequent substance use combination was Alcohol, Nicotine, and Cannabis, accounting for 24% of the cases. 69% had experienced substance use disorder for a duration of 0 to 5 years. Among those had a trigger, family problems were the most frequent, accounting for 15% of the cases.

Conclusion: High prevalence of deliberate self-harm (DSH) and psychiatric comorbidities among male patients with substance use disorders (SUD). younger age, being unmarried or separated, unemployment, lower educational attainment, and urban residence were significantly associated with self-harming behavior. Family-related issues and interpersonal conflicts emerged as the most frequent psychosocial triggers for DSH.

Keywords: Substance Abuse Disorders, socio-demographic, Alcohol, Nicotine, Cannabis

Introduction

Substance Use Disorder (SUD) is a condition characterized by the compulsive use of psychoactive substances despite significant adverse consequences¹. World Health Organization estimates that there are over 8 lakh suicide deaths every year, amounting to one death for every 40 s.² An important risk factor which has been shown to significantly contribute to an increased risk of suicide is substance use.³ 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,⁴ making substance use one of the most common risk factors associated with a suicide attempt.⁵ SUD contributes to a higher incidence of road traffic accidents, workplace inefficiencies, and violent crimes⁶

The cognitive impairments associated with SUD affect decision-making, impulse control, and emotional regulation, exacerbating psychiatric vulnerabilities⁷. Societally, SUD is linked to increased rates of incarceration, unemployment, and homelessness.⁸ Among psychiatric conditions, mood disorders, anxiety disorders, psychotic disorders, and personality disorders are the most commonly observed in SUD populations⁹. The high prevalence of psychiatric co-morbidities in SUD can be attributed to several factors. The self-medication hypothesis suggests that individuals use substances to alleviate symptoms of underlying mental illnesses, such as depression and anxiety¹⁰. Additionally, neurobiological research indicates that shared genetic and neurochemical pathways contribute to both psychiatric disorders and substance dependence. This study will augment data in Indian context, help to devise

better plan for early identification and comprehensive management of these patients as well as reduce morbidity and mortality in patients with substance use disorder.

Materials and Methods

It was a Descriptive Observational Cross sectional study executed after approval from Institutional Ethical Committee. 85 male patients of Substance-use Disorder aged 18 – 60 years attending Psychiatry OPD were included. Those patients with comorbid medical illness were excluded from the study. Informed consent was obtained from the subjects who are included prior to participation in the study. A semi-structured proforma for collecting data on socio-demographic profile, clinical presentation, legal complications, events preceding MINI (Mini International Neuropsychiatric Interview) and DSHI (Deliberate Self-Harm Inventory) was administered to the study population.

Statistical Methods to Be Used

Data was analysed using SPSS software for Windows. Descriptive Statistics was used for the Socio-Demographic Variables. Quantitative data was expressed in mean, standard deviation and analysed by appropriate statistical test. Qualitative data was expressed in percentage, proportion, graphs, tables and analysed by Chi-square test.

Results

Descriptive statistics of clinical history of Substance Use Disorder patients

Table 1: Distribution of patients by Substances used

	Substances used	Frequency	Percentage
1	Alcohol + Nicotine + Cannabis	24	24%
2	Alcohol + Nicotine	20	20%
3	Nicotine + Opioid	10	10%
4	Alcohol + Cannabis	10	10%
5	Nicotine + Opioid + Cannabis	12	12%
6	Alcohol only	6	6%
7	Opioid only	3	3%
8	Alcohol +Nicotine + Opioid	3	3%
9	Alcohol +Nicotine + Opioid + Cannabis	2	2%
10	Nicotine only	6	6%
11	Opioid + Cannabis	1	1%
12	Alcohol + Opioid + Cannabis	2	2%
13	Alcohol + Opioid	1	1%
14	Nicotine + Cannabis	2	2%
	Total	100	100%

Table 1 reveals that the most frequent substance use combination was Alcohol, Nicotine, and Cannabis, accounting for 24% of the cases, followed by combination of Alcohol and Nicotine at 20%. Several combinations, including Nicotine and Opioid, Alcohol

and Cannabis, and Nicotine, Opioid, and Cannabis, each represented 10-12% of substance use. Single substance use, such as Alcohol only and Nicotine only, constituted 6% each, while Opioid only was less frequent at 3%.

Table 2:

Substances	Yes	No	Total
Nicotine	80	20	100
Opioid	68	32	100
Alcohol	66	34	100
Cannabis	51	49	100

Table 2 reveals the prevalence of four different substances in our group. Nicotine had the highest affirmative response with 80 out of 100, indicating it was the most commonly used substance in this group.

Alcohol and Opioid use were also high, with 66 and 68 positive responses respectively. Cannabis showed a slightly lower prevalence, with 51 individuals reporting its use.

Table 3:

Duration	Frequency	Percent
0 - 5	69	69.0
6 - 10	18	18.0
>10	13	13.0
Total	100	100.0

Table 3 presents the distribution of patients based on the duration of their Substance Use Disorder (SUD). 69%, had experienced SUD for a duration of 0 to 5 years.

Following this, 18% of patients had a SUD duration of 6 to 10 years and 13%, had history of SUD for >10 years.

Table 4:

History of IV drug use	Frequency	Percent
No	94	94.0
Yes	6	6.0
Total	100	100.0

Table 4 illustrates the history of intravenous (IV) drug use among the studied population. A large majority, 94 individuals representing 94%, reported no history of IV drug use. Only 6 individuals or 6%, has a history of IV drug use.

Table 5:

Family history of substance use	Frequency	Percent
No	38	38.0
Yes	62	62.0
Total	100	100.0

Table 5 details the family history of substance use within the studied group. A notable majority, with a frequency of 62 individuals or 62%, reported having a family history of substance use.

Table 6:

MINI-Diagnosis	Frequency	Percent
None	55	55.0
MDD	20	20.0
GAD	12	7.0
Bipolar	5	5.0
SAD	2	2.0
Psychotic Disorder	2	2.0
ASPD	2	2.0
Suicidality	1	1.0
Panic Disorder	1	1.0
Total	100	100.0

Table 6 presents the MINI (Mini-International Neuropsychiatric Interview) diagnoses of the studied population. A majority, 55% (frequency of 55), received no specific MINI diagnosis. Among those diagnosed, Major Depressive Disorder (MDD) was the most prevalent, affecting 20% of the individuals. Generalized Anxiety Disorder (GAD) was also relatively common, Table 7: Distribution of Patients By History of Self-Harm

Self-Harm	Frequency	Percent
No	70	70.0
Yes	30	30.0
Total	100	100.0

Table 7 presents data on the prevalence of self-harm within the studied group. A notable portion of the individuals, with a frequency of 30 or 30%, reported a history of self-harm.

Table 8: Distribution of Patients By Pattern Of Deliberate Self-Harm Injury

DSHI-Pattern	Frequency	Percent
Cuts	20	67.0
Bang your head + bruise	5	17.0
Burns with cigarette	3	10.0
Punch yourself + bruise	2	7.0
Total	30	100.0

Table 8 details the patterns of Deliberate Self-Harm Injury (DSHI) observed in the study. Among those who engaged in self-harm, cutting was the most frequent method, accounting for 20% of the cases. Other reported patterns included burning with cigarettes (3%), banging the head resulting in bruising (5%), and punching oneself leading to bruising (2%). This data highlights that cutting was the predominant form of DSHI within this population.

Discussion

85 male patients of Substance-use Disorder aged 18 – 60 years attending Psychiatry OPD were included. We studied psychiatric comorbidity and pattern as well as

with a diagnosis rate of 12%. Other diagnoses, including Bipolar Disorder (5%), Social Anxiety Disorder (SAD), Psychotic Disorder, and Antisocial Personality Disorder (ASPD), each accounted for 2%. Suicidality and Panic Disorder were the least frequent diagnoses, each affecting 1% of the population.

predictors of self-harm in male patients with substance use disorder.

The study group was male patients with the mean age of 35.40. Most of the patients (70%) aged less than 40 years of age. 30% of the patients were above 40 years of age. About 80% of the patients dependent on nicotine, followed by opioids¹¹, alcohol¹² and cannabis¹³. The sociodemographic and substance profile is similar to those reported by other studies.

Prevalence and Predictors of Self Harm

Our study revealed the presence of deliberate self-harm in 30% patients of SUD. This prevalence is consistent with previous research¹⁴, who found that 32.7% of Substance Use Disorder (SUD) patients reported

Deliberate Self Harm (DSH) in a tertiary care centre in India.

In our study, the most common method of deliberate self-harm (DSH) was cutting (67%), followed by blunt force self-injury such as head banging or punching (17%) and burning with cigarettes (10%). Cutting is often employed as a maladaptive coping strategy to manage intense psychological distress or to regain a sense of emotional control.¹⁵

The psychosocial context of Deliberate Self-Harm (DSH) within our sample provides valuable insights into the underlying causes of self-injurious behavior. A significant proportion of individuals who engaged in DSH in our study reported family-related issues (50%) and interpersonal conflicts, particularly relationship issue (23%), as primary triggers. Less frequently cited stressors included illness, marriage-related problems, and financial strain. These findings highlight the profound impact of environmental and interpersonal stressors on self-harm behaviors in our population. Similar findings were reported in Indian studies, where family-related issues and interpersonal conflicts were found to be predominant precipitating factors for self-harm. For instance, a study conducted in rural central India found that 45% of suicide attempters reported interpersonal conflicts, with family-related issues as the most frequent trigger.¹⁶ In another study focusing on intentional self-harm in individuals referred to psychiatric services, 50% of cases were precipitated by interpersonal conflicts with family members, followed by 21.7% due to conflicts with spouses¹⁷

A study on adolescents engaging in self-harm revealed that interpersonal problems, particularly family-related issues, were the most common triggers, echoing the findings of our study where family and romantic

conflicts were significant stressors. Interestingly, this aligns with the notion that in different cultural contexts, family relationships may play a more central role in the psychosocial landscape of self-harm. The higher prevalence of family-related stressors in Indian populations compared to studies from Western countries may be attributed to the central role that family dynamics hold in Indian society.

Moreover, our findings underscore the critical need for understanding the cultural and social dimensions of self-harm, particularly in diverse populations. The variation in psychosocial stressors reported in both Indian and International contexts illustrates the importance of tailoring interventions to the specific cultural, familial, and relational dynamics that contribute to DSH. While Darke et al. (2010) highlight the impact of external violence and substance-related stressors, Indian studies point to the role of familial and romantic relationship distress as central triggers for self-harm, suggesting that interventions should be particularly focused on improving familial communication and addressing relationship difficulties.

Sociodemographic and Clinical Correlates of DSH in Patients with Sud

Age, marital status, education level, and employment status were all significantly associated with DSH in our study. A large proportion of patients who engaged in DSH were younger than 40 years, consistent with the findings of Langenback et al. (2010), who noted that young individuals with substance use issues are more prone to psychiatric comorbidities and self-injurious behaviors. Younger patients often have less-developed coping strategies, limited access to mental health services, and may be more impulsive, making them vulnerable to DSH.⁴⁵

Our data also revealed a higher incidence of DSH among unmarried, separated, or divorced individuals. Being single or lacking a stable relationship may contribute to feelings of loneliness and lack of social support, which in turn exacerbates psychological distress. Employment status emerged as another important factor—unemployed individuals were significantly more likely to report self-harm behaviors. This aligns with the previous study showing that unemployment is a major risk factor for both substance abuse and mental health issues¹⁵

Legal complications such as history of incarceration, encounters with law enforcement, and pending criminal cases were notably higher among individuals who reported DSH. Darke et al. (2010) highlighted that legal issues often co-occur with mental health and substance use problems and may act as both a stressor and a marker of high-risk behavior. Our findings corroborate this, reinforcing the need for psychosocial assessments that include legal history.⁴⁴

A significant proportion (62%) of participants reported a family history of substance use. This could indicate both genetic predisposition and modeling of behavior within the family system. These findings are supported by Kendler et al. (2012), who, in a large national adoption study, demonstrated that both genetic and familial environmental factors significantly contribute to the risk of developing substance use disorders. Their research found that individuals with biological parents who had a history of drug abuse were at elevated risk, even when raised in adoptive families without such histories. This highlights the dual impact of heredity and early-life environmental exposure in shaping vulnerability to substance use, impulsivity, and related behaviors such as deliberate self-harm.

Substance Use Profiles and DSH

Poly-substance use was notably prevalent in our study population. The most frequently observed combination was Alcohol + Nicotine + Cannabis (24%), followed by Alcohol + Nicotine (20%). Individuals who engaged in poly-substance use exhibited higher rates of self-harm, a trend consistently documented in the literature. Mean et al. (2013), in their systematic review, concluded that poly-substance users often experience more severe psychopathology, which increases their vulnerability to self-injury and suicidal behaviors. In our sample, nicotine was the most commonly used substance (80%), followed by opioids (68%), alcohol (66%), and cannabis (51%). These findings are consistent with the National prevalence.

Chronic cannabis use, in particular, was associated with higher rates of psychiatric symptoms and self-injurious behaviors. Escelsior et al. (2021), in their systematic review, highlighted a significant association between cannabis use and self-harm, particularly among individuals with emotional dysregulation, impulsivity, and coexisting mental health conditions. This supports our findings, where individuals using cannabis alongside other substances reported higher rates of self-harm.

Furthermore, opioid use, often in combination with other substances, was a prominent feature in our sample. Opioid use is known to disrupt emotional regulation and impair cognitive functioning, thus increasing the likelihood of impulsive and self-destructive behaviors. Yi Chai et al. (2022) observed that opioid users had the highest incidence of self-harm and suicide attempts in their study, further emphasizing the need for early intervention in populations with opioid use disorder. These findings reinforce the critical role that substance use, particularly when combined with other substances,

plays in exacerbating mental health symptoms and increasing the risk of self-harm.

In the Indian context, a study conducted by Gupta et al. (2019) assessed 300 male patients with substance use disorders and found that 32.7% had a history of self-harm. The study identified several significant sociodemographic and clinical associations, including younger age, being unmarried or separated, unemployment, history of injecting drug use, high-risk sexual behavior, and cannabis use disorders. These findings align with our study, highlighting the heightened vulnerability to self-harm among individuals with substance use disorders in India. Additionally, a study by Giri et al. (2014) assessed the quality of life in opioid-dependent subjects in India and found significantly lower scores across all domains compared to normal subjects, indicating the severe impact of opioid dependence on individuals' well-being.

These studies underscore the complex interplay between substance use and self-harm behaviors in the Indian population. The high prevalence of poly-substance use and its association with increased self-harm risk necessitate targeted interventions that address the multifaceted nature of substance use disorders. Culturally sensitive approaches that consider the unique sociocultural factors influencing substance use and self-harm in India are essential for effective prevention and treatment strategies.

Psychiatric Comorbidities and DSH

One of the most striking findings of our study was the high prevalence of psychiatric comorbidities among individuals with Substance Use Disorders (SUD). Using the MINI 7.0.2 diagnostic interview, we found that 45% of our patients met the criteria for at least one psychiatric disorder. Among those with a history of Deliberate Self-

Harm (DSH), the percentage was even higher, with 63% presenting with a psychiatric diagnosis, predominantly Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD). This underscores the significant role of psychiatric comorbidities in increasing vulnerability to self-harm among individuals with SUD.

Our findings align with several studies. For example, Vivian Onaemo et al. (2022) conducted a study on a Canadian population and found that individuals with both SUD and depressive disorders had an up to 11-fold increased risk of suicidal ideation compared to those without psychiatric diagnoses. Similarly, Skodol et al. (1999) identified borderline personality disorder (BPD) and antisocial personality disorder (ASPD) as significant contributors to self-harm behaviours in individuals with SUDs. In our study personality disorders except ASPD were not explicitly quantified, but they may be an underlying factor contributing to self-harm in our sample. Studies such as Vohra et al. (2019) and Mojtaba et al. (2020) have similarly documented the high prevalence of psychiatric comorbidities among individuals with SUD. Vohra et al. (2019) found that 53% of alcohol-dependent patients in India had a co-occurring mood disorder, predominantly MDD, aligning with our study's findings. Similarly, Mojtaba et al. (2020) observed that individuals with opioid use disorder and comorbid depression were at a higher risk of engaging in self-harm, which mirrors our results where opioid use was associated with increased vulnerability to psychiatric disorders and self-injury. The high prevalence of depressive disorders in individuals with opioid use is consistent with most of studies, further reinforcing the notion that depression is a key psychiatric comorbidity in this population.

The self-medication hypothesis, proposed by Khantzian (1985), offers a compelling explanation for the co-occurrence of psychiatric disorders and substance use in this population. According to this theory, individuals suffering from mood and anxiety disorders may initially turn to substances as a means of alleviating emotional distress. However, chronic substance use exacerbates underlying psychiatric symptoms, impairs cognitive and emotional regulation, and creates a vicious cycle that heightens the risk of self-harm. This theory is well-supported by both our findings and those of Vivian Onaemo et al. (2022) and Skodol et al. (1999), suggesting that self-medication remains a key factor in the development of self-injury behaviors.

Another study by Shalini Singh et al. (2021) specifically explored the psychiatric comorbidities among individuals with cannabis use disorder in India. The study found a high correlation between cannabis use and psychiatric conditions, including anxiety disorders and depression, suggesting that cannabis use, similar to opioids, is associated with increased psychiatric distress. This finding correlates with the global literature, including the work of Escelsior et al. (2021), which identified cannabis use as a significant risk factor for self-harm, particularly among individuals with emotional dysregulation, impulsivity, and coexisting mental health conditions. These similarities and dissimilarities underscore the complex relationship between substance use and psychiatric comorbidities across different populations. While the association between psychiatric disorders and self-harm in individuals with SUD is well-established globally, cultural, diagnostic, and regional factors may influence the specific substances involved and the patterns of comorbidity. Understanding these nuances is critical for developing effective, culturally

sensitive interventions tailored to the unique needs of individuals with both SUD and psychiatric disorders.

Conclusion

This study underscores the high prevalence of deliberate self-harm (DSH) and psychiatric comorbidities among male patients with substance use disorders (SUD). A significant proportion of the study population exhibited DSH behavior, with cutting being the most common method. Psychiatric comorbidities, particularly major depressive disorder and generalized anxiety disorder, were highly prevalent among individuals who engaged in DSH. The presence of such comorbidities markedly increased the risk of self-injurious behavior. Poly-substance use, especially involving cannabis and opioids, was also found to correlate with higher rates of DSH and psychiatric morbidity, highlighting the complex and multifactorial nature of these behaviors.

The study further revealed that legal complications and a family history of substance use were more frequent among individuals with DSH. These findings support the self-medication and disinhibition hypotheses, suggesting that psychiatric distress and impulsivity are key contributors to self-harm in SUD populations.

Overall, the results emphasize the urgent need for integrated psychiatric screening and culturally sensitive interventions for individuals with substance use disorders, especially those with high-risk profiles. Tailored strategies addressing both substance use and underlying psychiatric vulnerabilities are essential to improve clinical outcomes and prevent self-harming behavior in this population.

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