Annals of Psychiatric Research
An official journal of Indian Psychiatric Society, Rajasthan Chapter

ORIGINAL RESEARCH ARTICLE
p-ISSN: 2455-6599
Doi: 10.70468/aopr.v03.i1.02

Psychiatric Comorbidities, Impulsivity, and Suicidal Intent: A Cross-Sectional Study Among Suicide Attempters

Rohit Yadav*, Suresh Gocher, Manveer Kaur, Ranjit Singh, Chanendra Sablania

RNT Medical College, Udaipur, Rajasthan, India.

Abstract

Background: Suicide is a multifaceted phenomenon that is influenced by various risk factors, including psychiatric comorbidities, impulsivity, and suicidal intent. This study aimed to assess these factors in patients who had attempted suicide.

Methods: A cross-sectional descriptive study included 105 patients who had attempted suicide. Data was collected using a self-designed pro forma for socio-demographic details and clinical profiles. The Modified Kuppuswamy Scale was used to assess socioeconomic status, the Mini Neuropsychiatric Inventory (MINI) Plus to diagnose psychiatric disorders, the Barratt Impulsiveness Scale (BIS-11) to measure impulsivity, and the Beck Suicide Intent Scale (BSIS) to assess suicidal intent.

Results: The most common method of suicide attempt was poisoning (83.8%), with family conflicts being the primary precipitating factor. Psychiatric comorbidities were present in 58.1% of participants, with depressive disorder being the most prevalent (28.6%). Higher impulsivity scores were associated with lower suicide intent.

Conclusion: This study highlights the importance of addressing psychiatric comorbidities and impulsivity in suicide prevention strategies.

ARTICLE INFO

***Correspondence:**
rohitgothwal196@gmail.com
RNT Medical College, Udaipur, Rajasthan, India.

Dates:
Received: 10-08-2025
Accepted: 13-09-2025
Published: 09-10-2025

Keywords:
Suicide, Psychiatric disorder, Comorbidity, Impulsivity.

How to Cite:
Yadav R, Gocher S, Kaur M, Singh R, Sablania C. Psychiatric Comorbidities, Impulsivity, and Suicidal Intent: A Cross-Sectional Study Among Suicide Attempters. Annals of Psychiatric Research. 2025;3(1): 3-9.

Introduction

Suicide attempt is defined as "any act of self-damage inflicted with self-destructive intentions.[1] Suicide is a complex, multifactorial phenomenon influenced by psychiatric illnesses, chronic physical conditions, familial factors, psychological traits, stressful life events, and socio-demographic factors.[2]

Suicide is a significant global public health issue. It is the second leading cause of death among individuals aged 15–29 years and the third leading among those aged 15–44 years. Approximately 800,000 people die by suicide annually, equating to one death every 40 seconds.[3] In India, the National Crime Records Bureau (NCRB) reported 1,70,924 suicides in 2022, marking a 4.2% increase from the previous year, with a suicide rate of 12.4 per 100,000 population.[4]Extensive research has established a strong correlation between mental disorders and suicidal behavior. Over 90% of individuals who die by suicide

have a diagnosable mental disorder, such as schizophrenia, bipolar disorder, major depressive disorder (MDD), and personality disorders.[5] The relationship between mental disorders and suicidal behaviors has been extensively examined. However, identifying specific mental disorders that predict suicidal thoughts, plans, or attempts remains a challenge. Recent epidemiological studies suggest that while mental disorders primarily predict the emergence of suicidal thoughts, they play a diminished role in predicting the transition to actual attempts. Familial and genetic factors further complicate these relationships. Research indicates that while mental illnesses may predispose individuals to suicidal thoughts, impulsive and aggressive traits might drive the actual suicidal actions.[6]

Suicidal attempts cannot be discussed without considering the intent behind the act. Suicidal intent, or the seriousness of an individual's wish to end their life, includes both objective and subjective components. The objective component involves the circumstances surrounding the act, such as measures taken to prevent discovery, preparation, the presence of a note, and the level of isolation. The subjective component comprises an individual's verbalized intentions, feelings, and thoughts at the time of the attempt. Previous research has shown that higher suicidal intent scores are linked to more lethal methods of self-harm.[7]X

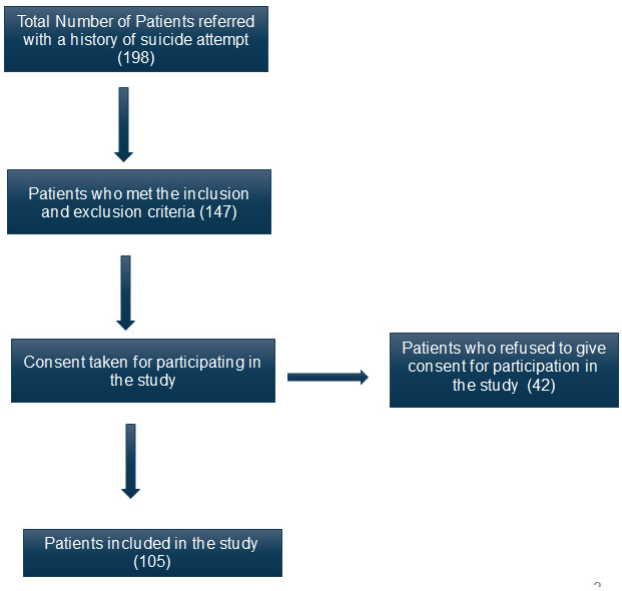

Figure 1 : Flowchart of the study methodology

Suicidal behavior encompasses a crucial element known as impulsivity.[8] Impulsivity, characterized by quick and unplanned responses to internal or external triggers without considering the potential negative outcomes, is widely regarded as one of the most prevalent factors associated with suicidal behavior.[9] It is often linked to psychiatric disorders, particularly among younger populations, and can significantly influence the likelihood of attempting suicide. Research indicates that impulsive suicide attempts are common but often result in less lethal outcomes due to a lack of planning. Recent research also demonstrated that impulsive suicide attempts, while occurring in more than half of the documented suicide attempts, might surprisingly result in decreased lethality.[10]

This study underscores the complex interplay between psychiatric comorbidities, impulsivity, and socio-demographic factors in suicide attempts. The high rate of psychiatric disorders among suicide attempters highlights the urgent need for integrated mental health services. Addressing impulsivity and enhancing family support structures have emerged as critical components of comprehensive suicide prevention strategies. By tailoring interventions to these identified risk factors, healthcare providers can better support at-risk individuals and potentially reduce the incidence of suicide attempts.

Materials and Methods

This cross-sectional, observational, and descriptive study was conducted from June 2023 to June 2024 in the Department of Psychiatry of a tertiary care center in Udaipur, Rajasthan. The Institutional Ethics Committee approved the study protocol (reference number RNT/ACAD/IEC/2023/583, dated 21/06/2023). Informed consent was obtained from all participants prior to their inclusion in the study.

The present study included consecutive literate adults (aged 18-65 years) with a history of attempted suicide, who were referred to the psychiatry department and were medically stable for an interview (Figure 1).

Data were collected using a self-designed pro forma for socio-demographic details and clinical profiles. The Modified Kuppuswamy Scale was used

to assess socioeconomic status, the Mini International Psychiatric Interview (MINI) Plus to diagnose psychiatric disorders, the Barratt Impulsiveness Scale (BIS-11) to measure impulsivity, and the Beck Suicide Intent Scale (BSIS) to assess suicidal intent. A brief description of the tools is provided below.

Self-designed form

This included socio-demographic data: age, sex, religion, education, marital status, occupation, place of residence, type of family, family history of psychiatric disorder, and family history of suicide.

Modified Kuppuswamy Scale

Used to measure socioeconomic status (SES) in urban and rural areas, incorporating the education and occupation of the family head along with the monthly family income, classifying participants into five SES categories.[11]

Mini International Neuropsychiatric Interview (M.I.N.I.) PLUS Version 7.0.2

A short structured diagnostic interview for DSM-III-R and ICD-10 psychiatric disorders, based on DSM-5 and ICD-10, with an administration time of approximately 15 minutes.[12]

Barratt Impulsiveness Scale (BIS-11)

Barratt developed the Barratt Impulsiveness Scale (BIS) in 1995 to measure a person's level of impulsiveness. The Hindi version has been developed by Singh et al. The BIS-11 is a self-reported questionnaire consisting of 30 items. Each question is rated on a 4-point scale ranging from 1 (rarely/never) to 4 (almost always or always). This scale has three subscales: attentional impulsiveness, motor impulsiveness, and nonplanning impulsiveness. Attention impulsiveness assesses task at hand, thought insertions, and racing thoughts (8 items); motor impulsiveness assesses acting on the spur of the moment and perseverance (11 items); and non-planning impulsiveness assesses planning and thinking carefully and enjoyment of challenging mental tasks (11 items). Some of the items were reverse scored as 4,3,2,1 (items=1,7,8,9,10,12,13,15,20 ,29,30). The impulsiveness level was calculated by summing the scores for each item. The total score ranges from 30 to 120, and higher scores indicate greater impulsivity.[13]

Beck Suicide Intent Scale (BSIS)

Assesses the severity of suicide attempt intent, interpreted as 15-19 low intent, 20-28 medium intent, and 29+ high intent.[14]

Results

This study included 105 participants (54 males and 51 females (Table 1). Most of the participants (70.5%) were from rural areas. The largest age group was 18-25 years (49.5%), followed by 26-35 years (38.1%). Most participants were middle school-educated, married, and lived in nuclear families belonging to the upper-lower socioeconomic category. Occupationally, males are primarily farmers, whereas females are mostly housewives. Most participants (87.6%) never tried to commit suicide before, and many (91.4%) did not have family members who committed suicide. Only 4.8% had a mental illness in the past, meaning most were not diagnosed with mental health problems before. The most common way people tried to commit suicide was by poisoning (83.8%), followed by hanging (13.3%), with more females using these methods. Most participants had low suicidal intent (65.7%), while 22.9% had medium intent and 11.4% had high intent (Table 2). Depressive disorder was the most common psychiatric comorbidity, significantly more prevalent in males (35.2%) than in females (21.6%), with a statistically significant difference ($p = 0.006$). Alcohol dependence was reported exclusively among males (20.4%), while no females had this diagnosis. A higher proportion of females (54.9%) had no psychiatric comorbidity compared to males (29.6%). Other conditions, such as adjustment disorder, anxiety disorder, personality disorder, and psychotic disorder, were relatively infrequent and showed no notable gender differences (Table 3). Most participants (65.7%) had low suicidal intent, followed by 22.9% with medium intent and 11.4% with high intent. This pattern was similar across both male and female groups, and the difference was not statistically significant (Table 4). The mean scores for

Table 1 : Socio-demographic characteristics of the study population

Socio-demographic Variable	*Categories*	*Total (N)*	*Male (N)*	*Female (N)*	*p-value*
Address	Rural	74 (70.5)	37 (68.5)	37 (72.5)	0.651
	Urban	31 (29.5)	17 (31.5)	14 (27.5)	
Religion	Hindu	97 (92.4)	52 (96.3)	45 (88.2)	0.120
	Muslim	8 (7.6)	2 (3.7)	6 (11.8)	
Age Group	18-25	52 (49.5)	22 (40.7)	30 (58.8)	0.187
	26-35	40 (38.1)	23 (42.6)	17 (33.3)	
	36-45	9 (8.6)	5 (9.3)	4 (7.8)	
	46-55	2 (1.9)	2 (3.7)	0 (0)	
	56-65	2 (1.9)	2 (3.7)	0 (0)	
Marital Status	Married	57 (54.2)	28 (51.9)	29 (56.8)	0.883
	Unmarried	44 (41.9)	23 (42.6)	21 (41.2)	
	Divorced	4 (3.9)	3 (5.5)	1 (2.0)	
Educational Status	Primary	24 (22.9)	9 (16.7)	15 (29.4)	0.049
	Middle	27 (25.7)	14 (25.9)	13 (25.5)	
	High	21 (20)	15 (27.8)	6 (11.8)	
	Diploma	20 (19)	13 (24.1)	7 (13.7)	
	Graduate	13 (12.3)	3 (5.6)	10 (19.6)	
Occupational Status	Unemployed	20 (19)	12 (22.2)	8 (15.7)	<0.001
	Housewife	27 (25.7)	0 (0)	27 (52.9)	
	Student	16 (15.2)	2 (3.7)	14 (27.5)	
	Farmer	14 (13.3)	14 (25.9)	0 (0)	
	Shop Owner	12 (14.7)	11 (20.4)	1 (2.0)	
	Laborer/Driver	9 (8.6)	9 (16.7)	0 (0)	
	Professional	7 (6.67)	6 (11.1)	1 (2.0)	
Type of Family	Nuclear	70 (66.7)	34 (63.0)	36 (70.6)	0.706
	Joint	16 (15.2)	9 (16.7)	7 (13.7)	
	Extended	19 (18.1)	11 (20.4)	8 (15.7)	
Socioeconomic Status	Upper Middle	5 (4.8)	3 (5.6)	2 (3.9)	0.446
	Lower Middle	22 (21.0)	8 (14.8)	14 (27.5)	
	Upper Lower	70 (66.7)	39 (72.2)	31 (60.8)	
	Lower	8 (7.6)	4 (7.4)	4 (7.8)	

attention, motor, and non-planning impulsivity—along with the total BIS score—decrease progressively from low to high suicide intent (Table 5). The highest scores across all domains were seen in the low intent group, with attention (17.83 ± 2.93), motor (25.61 ± 2.89), and non-planning impulsivity (29.23 ± 3.59), and a total BIS score of 72.81 ± 7.50. A similar declining trend was observed in the medium and high intent groups, with non-planning impulsivity consistently showing the highest mean among the three domains. These differences were found to be statistically significant.

Table 2 : Clinical variables associated with suicide attempt

Characteristics	*Male (n = 54) (%)*	*Female (n = 51) (%)*	*Total (N = 105) (%)*	*p-value*
Previous Attempts of Suicide (Absent)	48 (88.9)	44 (86.3)	92 (87.6)	0.684
Previous Attempts of Suicide (Present)	6 (11.1)	7 (13.7)	13 (12.4)	
Family History of Suicide (Yes)	5 (9.3)	4 (7.8)	9 (8.6)	0.796
Family History of Suicide (No)	49 (90.7)	47 (92.2)	96 (91.4)	
Past History of Psychiatric Illness (Yes)	4 (7.4)	1 (2.0)	5 (4.8)	0.190
Past History of Psychiatric Illness (No)	50 (92.6)	50 (98.0)	100 (95.2)	
Method of Suicide Attempt (Chemical)	43 (79.6)	45 (88.2)	88 (83.8)	
Method of Suicide Attempt (Hanging)	8 (14.8)	6 (11.8)	14 (13.3)	0.355
Method of Suicide Attempt (Drowning)	3 (5.6)	0 (0)	3 (2.9)	

Table 3 : Psychiatric disorders in the study population

Psychiatric comorbidity	*Male (n = 54) (%)*	*Female (n = 51) (%)*	*Total (N = 105) (%)*	*P*
Depressive Disorder	19 (35.2)	11 (21.6)	30 (28.6)	
Adjustment Disorder	4 (7.4)	5 (9.8)	9 (8.6)	
Anxiety Disorder	1 (1.9)	1 (2.0)	2 (1.9)	
Alcohol Dependance	11 (20.4)	0	11 (10.5)	0.006
Personality Disorder	3 (5.6)	5 (9.8)	8 (7.6)	
Psychotic Disorder	0	1 (2.0)	1 (1.0)	
None	16 (29.6)	28 (54.9)	44 (41.9)	

Table 4 : Distribution of study population according to suicidal intent

Intent	*Male (n = 54) (%)*	*Female (n = 51) (%)*	*Total (N = 105) (%)*	*P*
Low	34 (63)	35 (68.6)	69 (65.7)	
Medium	14 (25.9)	10 (19.6)	24 (22.9)	0.742
High	6 (11.1)	6 (11.8)	12 (11.4)	

Table 5 : Relationship between impulsivity and suicidal intent

S. No	*Intent*	*Low Intent*		*Medium Intent*		*High Intent*		*P value*
		Mean	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*	
1	BISA	17.83	2.93	14.83	2.57	13.08	1.62	<0.001
2	BISM	25.61	2.89	23.25	2.79	21.75	2.73	<0.001
3	BISNP	29.23	3.59	29.21	2.99	25.58	3.45	0.004
4	BIST	72.81	7.50	67.29	5.43	60.42	6.59	<0.001

Discussion

Socio-demographic Factors

In our study, we found that a slight majority of the participants were male (51.4%), and nearly half were female (48.6%). This aligns with previous research indicating that gender does not significantly influence suicide attempts, although the methods and motivations may differ between genders. The predominance of participants from rural areas (70.5%) suggests that rural populations may face unique stressors that contribute to higher suicide attempt rates, such as economic hardship, limited access to mental health services, and social isolation.

The age distribution showed that the majority of participants were young adults aged 18-25 years (49.5%), followed by those aged 26-35 years (38.1%). These findings are consistent with those of a previous study conducted by Gade et al. [15] which indicated that young adults are particularly vulnerable to suicide attempts owing to various factors, including identity crises, academic pressures, relationship issues, and economic challenges. The higher prevalence of married individuals (54.2%) among the participants indicates that marital conflict could be a significant stressor leading to suicide attempts.

Suicide Attempt Data

The most common method of suicide attempt was poisoning (83.8%), followed by hanging (13.3%), and drowning (2.9%). This finding aligns with the National Crime Records Bureau data, where poisoning is often reported as a prevalent method owing to the easy availability of pesticides and other toxic substances in rural areas. Family conflicts were identified as the primary precipitating factor for suicide attempts (40%), followed by marital issues (28.6%), and illness (10.5%). This emphasizes the need for interventions that address interpersonal and familial stressors to prevent suicide attempts.

Psychiatric Comorbidities

The high prevalence of psychiatric disorders among participants (58.1%) underscores the critical role that mental health conditions play in suicide attempts. Depressive disorder was the most common diagnosis (28.6%), consistent with the studies by Rao et al.[16] and Kodali et al.[17] documenting depression as a major risk factor for suicide. Alcohol dependence (10.5%) and adjustment disorder (8.6%) were also notable, indicating that substance use and difficulties in coping with stress are significant contributors to suicidal behavior.

The relatively low percentage of participants with a history of psychiatric illness (4.8%) and a family history of psychiatric illness (1.9%) suggests that acute psychiatric episodes or situational crises might precipitate suicide attempts in individuals without chronic mental health issues.

Suicide Intent and Impulsivity

Most participants exhibited low suicidal intent (65.7%), medium intent (22.9%), and high intent (11.4%). This distribution suggests that many suicide attempts may be impulsive acts rather than well-planned acts. The mean impulsivity score was 70.13 ± 8.09, with non-planning impulsivity being the highest among the subscales. This suggests that individuals with high impulsivity may not engage in detailed planning before attempting suicide, leading to lower intent and more impulsive suicide attempts. A similar trend was observed in studies by Gade et al [15] and Baca-Garcia et al.[10] The mean impulsivity score was highest in patients with low intent (72.81 ± 7.50), followed by those with medium intent (67.29 ± 5.43) and high intent (60.42±6.59). The scores gradually decreased as intent increased (from low to high). Our findings indicate that individuals with higher impulsivity scores tended to have lower suicidal intent, which is statistically significant. This finding supports the notion that impulsive individuals may engage in less lethal, spur-of-the-moment suicide attempts without a strong desire to die.

The present study as a few important limitations**.** As this was a cross-sectional study with a small sample size conducted at a single center, the findings may not be generalizable to a broader population. The use of self-report measures such as the BIS introduces the possibility of response bias because accuracy depends on the honesty of the participants. Additionally, the study did not include a comparison group of individuals without suicidality, which limits the interpretation of impulsivity pat-

terns specifically associated with suicide attempts. Future multi-centric longitudinal studies with larger, more representative samples are needed better to understand the relationship between impulsivity and suicidal intent.

Conclusion

This study highlights the complex relationship between psychiatric comorbidities, impulsivity, and suicidal intent in individuals who have attempted suicide. The findings emphasize the need for thorough mental health assessments that include the evaluation of impulsivity and suicidal intent as part of suicide prevention strategies. Targeted interventions are crucial for young adults, individuals from rural backgrounds, and those who face significant familial or marital stress. Enhancing the accessibility of mental health services in rural areas and addressing the stigma surrounding psychiatric care are essential steps toward more effective prevention and support.

Conflict of Interest

None.

References

1. Stengel E. Suicide and Attempted Suicide. Baltimore: Penguin; 1964
2. Turecki G, Brent DA, Gunnell D et al. Suicide and suicide risk. Nature reviews Disease primers. 2019 Oct 24;5(1):1 22.
3. Bachmann S. Epidemiology of suicide and the psychiatric perspective. International journal of environmental research and public health. 2018 Jul;15(7):1425.
4. National Crime Records Bureau. Accidental deaths and suicides in India-year-wise [Internet]. New Delhi: National Crime Records Bureau; [cited 2025 Sep 28]. Available from: https://www.ncrb.gov.in/accidental-deaths-suicides-in-india-year-wise.html?year=2022&keyword=
5. Cavanagh JT, Carson AJ, Sharpe M, Lawrie SM. Psychological autopsy studies of suicide: a systematic review. Psychological medicine. 2003 Apr;33(3):395-405.
6. Hilario BF, Rodrigo-Yanguas M, Lucas G, Lobato-Rodriguez MJ. Patterns of Comorbidity of Suicide Attempters: An Update. Current Psychiatry Reports. 2016 Oct 1;18(10). Available from :10.1007/s11920-016-0733-y
7. Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu HG, Joyce PR, Karam EG, Lee CK, Lellouch J, Lepine JP, Newman SC. Prevalence of suicide ideation and suicide attempts in nine countries. Psychological medicine. 1999 Jan;29(1):9-17.
8. McGirr A, Paris J, Lesage A, Renaud J, Turecki G. Risk factors for suicide completion in borderline personality disorder: a case-control study of cluster B comorbidity and impulsive aggression. Journal of Clinical Psychiatry. 2007 May 1;68(5):721.
9. Moeller FG, Barratt ES, Dougherty DM, Schmitz JM, Swann AC. Psychiatric aspects of impulsivity. American journal of psychiatry. 2001 Nov 1;158(11):1783-93.
10. Baca-Garcia E, Vaquero C, Diaz-Sastre C, García-Resa E, Saiz-Ruiz J, Fernández-Piqueras J, De Leon J. Lack of association between the serotonin transporter promoter gene polymorphism and impulsivity or aggressive behavior among suicide attempters and healthy volunteers. Psychiatry Research. 2004 Apr 30;126(2):99-106.
11. Kumar G, Dash P, Patnaik J, Pany G. Socioeconomic status scale-modified Kuppuswamy scale for the year 2022. International Journal of Community Dentistry. 2022 Jun 10;10(1):1-6
12. Sheehan DV, Lecrubrier Y. MINI Plus, international neuropsychiatric interview. Tampa: University of South Florida. 1998.
13. Singh P, Solanki RK, Bhatnagar PS. BIS-11A-Hindi version: A preliminary study of impulsivity in rural and urban Indian adolescents. Indian Journal of Psychiatry. 2008 Apr;50(2):96. Available from :10.4103/0019-5545.42395
14. Beck AT, Schuyler D, Herman I. Development of suicidal intent scales. Charles Press Publishers; 1974.
15. Gade V, Kalasapati LK, Kadari RR, Kalidindi S, Macharapu R, Kumar CM. Impulsivity in suicide attempters: A cross-sectional study from a teaching hospital in India. J Clin Diagn Res. 2018 Oct 1;12(10):VC15-20.
16. Rao KN, Kulkarni RR, Begum S. Comorbidity of psychiatric and personality disorders in first suicide attempters. Indian journal of psychological medicine. 2013 Jan;35(1):75-9. Available from :10.4103/0253-7176.112210
17. Kodali M, Kilaru K. Psychiatric morbidity of attempted suicide patients admitted to a general hospital in rural area of South India. IOSR Journal of Dental and Medical Sciences. 2013 Jan;4(3):46-50