

Severity of Suicidal Intent, Psychiatric Morbidity and Associated Factors among Poisoning Attempters: An Observational Study in Rural Area of Brahmanbaria District, Bangladesh

*Hossain M¹, Ghosh R², Galib MA³, Habibullah M⁴

Article info

Received : 00
Accepted : 00
No. of Tables : 03
No. of Figure : 00
No. of References : 18

Cite the Article:

Hossain M, Ghosh R, Galib MA, Habibullah M. Severity of Suicidal Intent, Psychiatric Morbidity and Associated Factors among Poisoning Attempters: An Observational Study in Rural Area of Brahmanbaria District, Bangladesh. Pabna Med. Col. J. 2026; 5(1): 33-37

DOI:

<https://doi.org/10.62469/pmj.v05i01.005>
www.pmjpmc.com

Keywords: Suicidal Intent, Psychiatric Morbidity, Poisoning, Impulsivity

Abstract:

Background: Suicide remains a major public health concern, with poisoning being a common method of self-harm. The easy availability of toxic substances and limited access to mental health care contribute to the growing burden of deliberate self-poisoning. This study aimed to assess the severity of suicidal intent, psychiatric morbidity, and associated sociodemographic factors among poisoning attempters.

Methods: This observational study was conducted in the Medicine Inpatient Department of Brahmanbaria Sadar Hospital over seven months from June 2022 to December 2022. 84 patients admitted following deliberate self-poisoning were included. Suicidal intent was measured using Beck's Suicidal Intent Scale (SIS), and psychiatric morbidity was assessed according to ICD-10 criteria. Sociodemographic data were collected and analysed using SPSS version 26, with a significance level set at $p < 0.05$.

Results: Most participants were aged 11–20 years (39.3%) and female (53.6%). Low suicidal intent was observed in 94% of cases, with impulsive acts in 90.4%. Psychiatric morbidity was present in 9.6%, showing a significant association with higher suicidal intent ($p < 0.001$). No significant associations were found between suicidal intent and age, gender, education, or income.

Conclusion: Low suicidal intent and impulsivity predominated among poisoning attempters, while psychiatric morbidity strongly influenced higher intent.

Introduction:

Suicide represents a critical global public health challenge, claiming approximately 700,000 lives annually worldwide, with 77% of these deaths occurring in low- and middle-income countries¹. This reflects the disproportionate burden of suicide in resource-limited settings. In these areas, mental health services, preventive measures, and crisis intervention strategies are often inaccessible. The burden of suicide is particularly pronounced in South Asia, where poisoning is one of the most prevalent methods of self-harm². The widespread use of toxic

substances, along with socioeconomic stressors, contributes to high rates of deliberate self-harm in these populations. In Bangladesh, the estimated suicide rate ranges from 5.9 to 8.7 per 100,000 population³.

The country faces unique challenges in addressing this crisis, especially in rural areas where access to mental health services remains severely limited. The shortage of trained mental health professionals and the lack of adequate infrastructure for psychiatric care further increase the risks in these communities. Deliberate self-poisoning accounts for a major

1. *Dr Maruf Hossain, Assistant Professor (Medicine), Satkhira Medical College. phone : +8801715550346, Email: drmarufhossain@gmail.com

2. Dr Rajib Ghosh, Associate Professor (Medicine), Rangamati Medical College

3. Dr Md Ashadullah -Al-Galib, Assistant Professor (Medicine), Satkhira Medical College

4. Dr. Mohammad Habibullah, Associate Professor (Medicine), Dhaka Medical College, Bangladesh

Correspondence: *Dr Maruf Hossain, Assistant Professor (Medicine), Satkhira Medical College. phone : +8801715550346, Email: drmarufhossain@gmail.com

proportion of suicide attempts in Bangladesh. Pesticides, medications and household chemicals are the most commonly ingested substances⁴. These substances are often easily available in homes and agricultural settings, making impulsive suicide attempts more likely. The rural landscape of Bangladesh presents distinct risk factors. These include easy access to agricultural pesticides, limited medical infrastructure for managing poisoning cases, and significant barriers to psychiatric care⁵. Many rural patients also experience delays in reaching medical facilities, which can worsen outcomes and increase mortality. Severity of suicidal intent among poisoning attempters is crucial for developing targeted intervention strategies and preventing future attempts. Beck's concept of suicidal intent encompasses the degree of preparation, expectations of fatality and the individual's determination to die, which significantly influences both immediate clinical management and long-term prognosis⁶.

Accurate assessment of suicidal intent not only informs emergency care decisions but also aids in planning follow-up psychiatric interventions. Studies have shown that individuals with high suicidal intent exhibit increased risk of completed suicide within one year of the index attempt, emphasising the importance of accurate assessment in emergency settings⁷. Psychiatric morbidity plays a fundamental role in suicidal behaviour, with research indicating that a significant proportion of individuals who attempt suicide have at least one diagnosable psychiatric disorder⁸. In rural South Asian contexts, the intersection of psychiatric illness with socioeconomic stressors, including poverty, domestic violence, and agricultural debt, produces complex vulnerability patterns that require culturally sensitive investigation⁹.

Identification of associated factors specific to rural populations is essential for developing context-appropriate prevention programs. Previous studies in Bangladesh have documented the role of interpersonal conflicts, economic hardship, and chronic illness as precipitating factors for suicide attempts¹⁰. Additionally, demographic variables such as age, gender, education level and marital status represent significant associations with both the choice of poisoning agents and the severity of suicidal intent¹¹. This study aims to address the severity of suicidal intent, psychiatric morbidity patterns and associated sociodemographic factors among poisoning attempters in rural Brahmanbaria.

Methods:

This descriptive observational study was carried out in the Medicine inpatient department of Brahmanbaria

Sadar Hospital, a 250-bedded district hospital in rural Bangladesh, for seven months, from June 2022 to December 2022. 84 patients admitted following suicidal self-poisoning were selected using consecutive sampling. Patients who were medically stable enough to participate in an interview (typically within 24-48 hours of admission) and provided informed consent (or guardian assent for minors) were included. The following were excluded: patients with severe medical complications requiring intensive care, cognitive impairment preventing reliable assessment, those who declined participation, and accidental poisoning cases. Suicidal intent was assessed using Beck's Suicidal Intent Scale (SIS), with scores categorised as low, medium, or high [12]. Gross psychiatric morbidity was determined through structured clinical evaluation following ICD-10 diagnostic criteria [13]. Ethical clearance was obtained from the Institutional Review Board of Brahmanbaria Sadar Hospital. Data analysis was done using SPSS software version 26. Descriptive statistics were used to summarise demographic and clinical profiles. The point-biserial correlation coefficient (RPB) was applied to assess the relationship between psychiatric illness and suicidal intent, and a p-value of less than 0.05 was considered statistically significant.

Results:

Table 1: Socio-demographic Characteristics of Suicide Attempters (N=84)

Characteristic	Category	n	%
Age Group (Years)	11–20	33	39.3
	21–30	26	30.9
	>30	25	29.8
Gender	Female	45	53.6
	Male	39	46.4
Educational Status	Illiterate/Primary	33	39.3
	Secondary/Higher	51	60.7
Family Income (BDT/Month)	< 20,000	43	51.2
	≥20,000	41	48.8

The Table shows that most participants were aged 11–20 years (39.3%), followed by 21–30 years (30.9%) and above 30 years (29.8%). Females made up 53.6%, while males comprised 46.4%. Regarding education, 60.7% had secondary or higher education, and 39.3% were illiterate or had primary education. In terms of income, 51.2% earned below 20,000 Taka per month, while 48.8% earned 20,000 Taka or more. [Table I]

Table II: Suicidal Intent, Impulsivity, and Psychiatric Morbidity (N=84)

Variable	Finding	N	%
Overall Suicidal Intent (SIS Score)	Low Intent	79	94.0
	Medium/High Intent	5	6.0
Act Impulsivity (SIS Premeditation Score)	Impulsive (Score 1)	76	90.4
	Planned (Score 2/3)	8	9.6
Gross Psychiatric Morbidity (ICD-10 Aligned)	Absent	76	90.4
	Present	8	9.6
Correlation	(Psychiatric Illness vs. High Intent)	1	$p < 0.001$

Table III: Associated Factors Among Poisoning Attempters (N=84)

Factor	Category	Low Intent n (%)	Medium/High Intent n (%)	p- value
Age Group (Years)	11–20	32 (97.0)	1 (3.0)	0.39
	21–30	24 (92.3)	2 (7.7)	
	> 30	23 (92.0)	2 (8.0)	
Gender	Female	43 (95.6)	2 (4.4)	0.48
	Male	36 (92.3)	3 (7.7)	
Educational Status	Illiterate/Primary	30 (90.9)	3 (9.1)	0.31
	Secondary/Higher	49 (96.1)	2 (3.9)	
Family Income (Taka/Month)	< 20,000	41 (95.3)	2 (4.7)	0.44
	≥20,000	38 (92.7)	3 (7.3)	
Psychiatric Morbidity (ICD-10)	Absent	74 (97.4)	2 (2.6)	< 0.001
	Present	5 (62.5)	3 (37.5)	

The table shows that most participants had low suicidal intent (94%), while 6% showed medium or high intent. Impulsive acts were common (90.4%), with 9.6% being planned. Psychiatric morbidity was absent in 90.4% and present in 9.6%. A significant correlation existed between psychiatric illness and high suicidal intent ($p < 0.001$). [Table II]

No significant associations ($p > 0.05$) were found between the severity of suicidal intent and sociodemographic factors such as age, gender, education, or family income. A strong and statistically significant association ($p < 0.001$) was found between psychiatric morbidity and higher suicidal intent. [Table III]

Discussion:

The present study investigated the severity of suicidal intent, psychiatric morbidity, and associated factors among poisoning attempters in rural Brahmanbaria, Bangladesh. This study found that the majority of

poisoning attempters were young, with 39.3% aged 11–20 years and 30.9% aged 21–30 years. A demographic pattern of youth vulnerability in self harm through poisoning has been reported in South Asia: for example, in a large study of deliberate self harm in the Sundarban region of India. Sarkar et al¹⁴ found that women in younger age groups constituted the majority of poisoning attempts and that poisoning accounted for over 98% of self harm acts. Furthermore, the slight female predominance (53.6%) in our cohort aligns with general trends, as a systematic review in Muslim majority and South Asian countries showed elevated self harm rates among young females¹⁵.

A notable finding was the high prevalence of low suicidal intent (94%) and impulsive acts (90.4%) in this study, suggesting that many acts may be acute responses rather than planned suicides. This mirrors findings from a comparative study in India, where Nazeer et al¹⁶ reported that patients who attempted

self poisoning exhibited significantly higher impulsivity and lower intent scores compared with self immolation. While our impulsivity proportion (90.4%) is even higher, the similarity underscores that poisoning in resource limited rural settings is often an impulsive means of relief rather than a firmly decided attempt to die. Regarding psychiatric morbidity, this study identified its presence in only 9.6%, yet we found a strong and statistically significant association between psychiatric morbidity and higher suicidal intent ($p < 0.001$). This rate is considerably lower than pooled estimates: a meta analysis of suicidal behaviour in South Asia by Arafat et al.¹⁷ found that among non fatal attempts, the pooled prevalence of depression was around 32.7%. In Bangladesh specifically, a case-control psychological autopsy study by Arafat et al.¹⁸ identified a psychiatric disorder as the strongest risk factor for completed suicide (OR/ 15.33).

The much lower morbidity in our rural sample might reflect underdiagnosis, limited psychiatric referral, or predominance of low intent acts; yet the robust association between morbidity and intent severity echoes the established evidence that mental illness increases suicidal intent. This study did not find significant associations between the severity of suicidal intent and socio demographic factors such as age, gender, educational status, or family income ($p > 0.05$ for all). This diverges from some research where demographic variables appeared influential, but it aligns with a recent review by Knipe et al.¹⁹, which reported that while mental illness correlated with suicidal risk, sociodemographic factors did not significantly predict the severity of ideation or intent in poisoning cases. It suggests that once someone attempts self poisoning, the severity of intent may depend more on proximal psychological variables than broader demographics. These results indicate that the severity of psychiatric illness and impulsive behaviour plays a more important role in suicidal intent than demographic factors among poisoning attempters.

Conclusion:

The study shows that attempters of poisoning are generally young, with a high female preponderance, low suicidal intent, and high impulsivity. Psychiatric morbidity significantly enhances the suicidal intent whereas demographic factors contribute little. Specific interventions aimed at the underlying psychiatric

condition and impulsive behavior hold the key to effective prevention of suicide among poisoning attempters.

Recommendation:

For future research, it is suggested to increase the sample size and involve multiple centres to enhance representativeness. Conducting longitudinal studies could help track changes in suicidal intent over time. Using standardized psychiatric evaluations and qualitative interviews may offer a more comprehensive understanding.

References:

1. World Health Organization. Suicide worldwide in 2021: global health estimates. World Health Organization; 2025 May 22.
2. Mew EJ, Padmanathan P, Konradsen F, Eddleston M, Chang SS, Phillips MR, Gunnell D. The global burden of fatal self-poisoning with pesticides 2006-15: systematic review. *Journal of affective disorders*. 2017 Sep 1;219:93-104.
3. Arafat SY. Suicide in Bangladesh: a mini review. *Suicide*. 2014;3.
4. Chowdhury FR, Dewan G, Verma VR, Knipe DW, Isha IT, Faiz MA, Gunnell DJ, Eddleston M. Bans of WHO class I pesticides in Bangladesh—suicide prevention without hampering agricultural output. *International journal of epidemiology*. 2018 Feb 1;47(1):175-84.
5. Mashreky SR, Rahman F, Rahman A. Suicide kills more than 10,000 people every year in Bangladesh. *Archives of Suicide Research*. 2013 Oct 1;17(4):387-96.
6. Klonsky ED, May AM. The three-step theory (3ST): A new theory of suicide rooted in the “ideation-to-action” framework. *International Journal of Cognitive Therapy*. 2015 Jun;8(2):114-29.
7. Runeson B, Tidemalm D, Dahlin M, Lichtenstein P, Långström N. Method of attempted suicide as predictor of subsequent successful suicide: national long term cohort study. *Bmj*. 2010 Jul 13;341.
8. Bachmann S. Epidemiology of suicide and the psychiatric perspective. *International journal of environmental research and public health*. 2018 Jul;15(7):1425.
9. Turecki G, Brent DA. Suicide and suicidal behaviour. *The Lancet*. 2016 Mar 19;387(10024):1227-39.
10. Feroz AH, Islam SN, Reza S, Rahman AM, Sen J, Mowla M, Rahman MR. A community survey on

- the prevalence of suicidal attempts and deaths in a selected rural area of Bangladesh. *Journal of Medicine*. 2012;13(1):3-9.
11. Shah, M. M. A., Ahmed, S., & Arafat, S. M. Y. (2017). Demography and risk factors of suicide in Bangladesh: A six-month paper content analysis. *Psychiatry Journal*, 2017, 3047025.
 12. Esfahani M, Hashemi Y, Alavi K. Psychometric assessment of beck scale for suicidal ideation (BSSI) in general population in Tehran. *Medical journal of the Islamic Republic of Iran*. 2015 Oct 3;29:268.
 13. Reed GM, First MB, Kogan CS, Hyman SE, Gureje O, Gaebel W, Maj M, Stein DJ, Maercker A, Tyrer P, Claudino A. Innovations and changes in the ICD 11 classification of mental, behavioural and neurodevelopmental disorders. *World psychiatry*. 2019 Feb;18(1):3-19.
 14. Chowdhury AN, Banerjee S, Brahma A, Das S, Sarker P, Biswas MK, Sanyal D, Hazra A. A prospective study of suicidal behaviour in Sundarban Delta, West Bengal, India. *National medical journal of India*. 2010 Aug;23(4):201.
 15. Shoib S, Khan S, Baiou A, Chandradasa M, Swed S, Turan S, Yusha'u Armiya'u A. Exposure to violence and the presence of suicidal and self-harm behaviour predominantly in Asian females: scoping review. *Middle East current psychiatry*. 2022 Aug 18;29(1):62.
 16. Nazeer N, Tharayil HM, Vidyadharan V. A comparative study of impulsivity, lethality and intent among patients attempting suicide by self-immolation and poisoning. *Kerala Journal of Psychiatry*. 2019 Sep 30;32(1):10-6.
 17. Arafat SY, Saleem T, Menon V, Ali SA, Baminiwatta A, Kar SK, Akter H, Singh R. Depression and suicidal behavior in South Asia: a systematic review and meta-analysis. *Global mental health*. 2022 Jan;9:181-92.
 18. Arafat SY, Mohit MA, Mullick MS, Kabir R, Khan MM. Risk factors for suicide in Bangladesh: case-control psychological autopsy study. *BJPsych open*. 2021 Jan;7(1):e18.