

**Patterns and Risk Factors of Suicide Attempts in Individuals with Depression: A Retrospective Study****Satyajeet Kumar Singh**

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Received: 13-02-2022 / Revised: 14-03-2022 / Accepted: 26-04-2022

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Conflict of interest: Nil

**Abstract:****Background:** Suicide is a serious public health issue, and one of the biggest risk factors for suicide behavior is depression. Effective prevention, especially in areas with limited resources, requires an understanding of the clinical and psychosocial correlates of suicide attempts among people with depression.**Aim:** To assess suicide attempt trends and pinpoint risk variables in individuals with depression.**Methodology:** At a Netaji Subhas Medical College and Hospital, Bihta, Patna, Bihar, India, retrospective observational research was carried out. We examined the medical records of seventy-five individuals who were at least eighteen years old, diagnosed with depression, and had a history of recorded suicide attempts. Chi square tests and descriptive statistics were used to analyse sociodemographic information, clinical features, attempt patterns, and psychosocial aspects.**Result:** Young people and women made up most of the patients. In most cases, there was severe depression. The most frequent attempts were poisoning and drug overdose. Severe suicide attempts were significantly correlated with impulsivity, severe depression, female gender, history of substantial mental stress, and family history of suicide ( $p < 0.05$ ).**Conclusion:** Suicide attempts in depression are multifaceted, with psychosocial stress and clinical severity being major contributing factors. Suicide prevention depends on early detection and thorough intervention for high-risk people.**Keyword:** Depression; Suicide Attempt; Risk Factors; Impulsivity; Retrospective Study.

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**Introduction**

The World Health Organization (WHO) estimates that around 800,000 individuals commit suicide annually. About 90% of them have a mental disease, with major depressive disorder (MDD) accounting for 40–70% of cases. [1]. The lifetime prevalence is 6.8%. Suicidal thoughts, suicide intentions, and suicide attempts had lifetime prevalence rates of 53.1%, 17.5%, and 23.7%, respectively, according to a thorough meta-analysis of Chinese patients with MDD. mental patient stabilization, history taking, mental assessment, physical examination, and therapy are often tried in a relatively short amount of time in emergency rooms that follow a set timetable [2].

They needed greater medical resources and costs, had worse pharmacological efficacy and quality of life, used more antidepressants, and had significant side effects [3]. In the meantime, their carers also had to deal with a great deal of financial and psychological strain. As a result, the burden of suicide among MDD sufferers is enormous for both society and their family. An essential public health concern is the early detection of suicide risk in MDD pa-

tients and prompt, effective care. Cognitive disorders and drug use disorders are generally appropriately diagnosed by non-psychiatrist physicians, although depression is only correctly diagnosed in over 50% of instances [4].

The busiest, demanding, stressful, and complicated departments in hospitals are the emergency rooms. These services are offered 24/7, every day of the year, as promptly as possible, with the goal of saving lives, evaluating patients in need of immediate intervention, and providing emergency care and treatment. Regardless of the time of day, people with acute mental health issues frequently visit emergency rooms because they are unable to access or are not linked to facilities that offer direct mental health care [5].

These emergencies can be classified as circumstances that jeopardize an individual's life (suicide, drunkenness, etc.), jeopardize the lives of others (violence), or interfere with life's normal flow (psychotic episodes, grieving response, abuse, etc.). Numerous chronic mental diseases, psychosocial

stress disorders, life events, physical ailments that cause psychiatric symptoms, poisoning, substance use, side effects, and drug-drug combinations can all cause them. Suicidal behavior may be linked to psychiatric crises, thus both immediate and long-term monitoring of these individuals is crucial [6]. There is proof that suicide thoughts are on the rise in mental health.

One important risk factor for suicide is the existence of mental illnesses. Mood disorders and drug use disorders are among the mental diseases that are frequently noted in individuals who commit suicide. To properly handle and refer potentially fatal patients, systematic evaluation of suicide risk in emergency rooms need to be a standard professional procedure [7].

Due to the difficulties in predicting and diagnosing suicide, the urgency of the disease, the necessity for rapid life-sustaining care, and the lack of accessible therapies, managing individuals with MDD who exhibit suicidal ideation and/or behavior is very difficult. Conventional antidepressants typically have a sluggish start and take more than two weeks to be effective for high-risk individuals [8].

The primary modalities of long-term intervention, which include antidepressants, lithium, second general antipsychotics, and psychotherapy (including cognitive behavioral therapy, dialectical behavioral therapy, and others), have been shown to alleviate depressive symptoms and reduce the risk of suicide death among patients. However, there is ongoing debate and controversy regarding the efficacy of these treatment modalities in the prevention of suicide in individuals with depression [9].

Patients with MDD are currently experiencing uncertainty regarding their therapeutic options for suicidal ideation and behavior. Most randomized controlled trials (RCTs) on drugs and physical therapy for MDD excluded patients with suicidal tendencies for safety reasons which made the evidence obtained not generalizable to a clinic setting. Starting from disease databases and real-world data, exploring the characteristics of individuals with SI and SB, understanding their disease burden, and seeking effective treatment strategies is crucial [10].

It was the objective of this study to analyse and contrast the characteristics and disease burden of individuals with MDD in psychiatric hospitals, regardless of whether they exhibit suicidal ideation or behaviors, using real-world data. To optimize clinical treatment pathways, we also aimed to discover treatment pattern transitions for people with suicide by monitoring medication alterations during the hospitalization time. Using propensity score matching (PSM) and logistic regression analysis, the current preliminary case series investigation used inpatient medical data to retrospectively in-

vestigate the variables linked to SB. Here, we postulated that because of the disparity in sociocultural settings, the variables associated with SB among MDD patients in Bihar are different from those in other nations.

### Methodology

**Study Design:** A retrospective observational approach was used for this investigation. To identify trends and related risk factors, medical records of individuals with depressive illness who had attempted suicide were examined.

**Study Duration:** The study was carried out over a period of 12 months from November 2020 to October 2021.

**Study Area:** The study was carried out in the Department of Psychiatry at Netaji Subhas Medical College and Hospital in Bihta, Patna, Bihar, India.

**Sample Size:** A total of 75 patient records meeting the inclusion criteria were selected for analysis

**Sampling Technique:** The method used was a non-probability purposive sampling strategy. Until the necessary sample size was reached, all eligible case records of patients with depressive illness and a history of recorded suicide attempts throughout the research period were included.

### Inclusion criteria

- Patients aged 18 years and above
- Diagnosed with depressive disorder as per ICD-10/DSM-5 criteria
- Documented history of one or more suicide attempts
- Complete and legible medical records

### Exclusion criteria

- Patients with bipolar disorder, schizophrenia, or other psychotic disorders
- Suicide attempts secondary to substance intoxication alone
- Incomplete or missing medical records
- Patients with severe neurological or cognitive impairment documented in records

**Data Collection:** The inpatient and emergency department medical records of patients with depressive illness who had a history of recorded suicide attempts were used to gather data for the current investigation in hindsight. Relevant data, such as sociodemographic factors, clinical traits, suicide attempt details, psychiatric comorbidities, psychosocial stressors, and treatment profiles, were recorded using a systematic data extraction protocol. All patient identifiers were eliminated to guarantee anonymity, and only complete and readable case records meeting the inclusion requirements were examined.

**Procedure:** Medical data were examined according to qualifying criteria following approval from the institutional authorities. An organized datasheet was created after pertinent data was manually collected. Patient identifiers were anonymized to preserve confidentiality. Prior to statistical analysis, the gathered data was verified for accuracy and consistency.

**Statistical Analysis:** The Statistical Package for Social Sciences (SPSS) software version 25.0 and Microsoft Excel were used to code, enter, and analyses the gathered data. Sociodemographic and clinical characteristics were summarized using descriptive statistics including frequency, percentage, mean, and standard deviation. The Chi square test and other inferential statistical tests were used to evaluate relationships between certain risk variables and suicide attempt patterns. Statistical significance was defined as a p value of less than 0.05."

## Result

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–29	22	29.3
	30–39	18	24
	40–49	20	26.7
	≥50	15	20
Gender	Male	28	37.3
	Female	47	62.7
Marital Status	Unmarried	26	34.7
	Married	41	54.7
	Divorced/Widowed	8	10.6
Severity of Depression	Mild	6	8
	Moderate	19	25.3
	Severe	50	66.7
First Episode	Yes	31	41.3
	No	44	58.7
Comorbid Somatic Illness	Present	52	69.3
	Absent	23	30.7

Table 2 illustrates the suicide attempt patterns of the patients under investigation. Because hazardous drugs and pharmaceuticals are easily accessible, poisoning has emerged as the most prevalent means of suicide attempt, followed by drug overdose. A lower but noteworthy percentage of attempts involved hanging and self-inflicted injury. The majority of patients had only attempted suicide once, while more than one-third had attempted suicide

In Table 1, the sociodemographic and clinical characteristics of the 75 patients diagnosed with depressive disorder who had a history of suicide attempts are detailed. The majority of patients were in the economically productive age range, with the 18–29 age group having the largest percentage, followed by the 40–49 age group. Nearly two thirds of the study's participants were female, suggesting that women are more prevalent among depressed people who have attempted suicide. Many individuals were married, indicating that being married might not be enough to prevent suicide thoughts and actions in people with depressive illnesses. Clinically, a significant percentage of patients had severe depression, demonstrating the close correlation between suicide attempts and depression severity. The chronic and complicated character of depression in this group is shown by the fact that over half of the individuals had recurring episodes and most had co-occurring somatic conditions.

more than once, suggesting a subpopulation with increased suicidal risk. Moreover one-third of patients exhibited impulsivity, indicating that it plays a significant role in inciting suicide thoughts and actions. Furthermore, almost 25% of patients had a history of serious mental trauma, which supports the idea that negative life experiences are important triggers for suicide behavior in depression.

Variable	Category	n	%
Method of Suicide Attempt	Poisoning	34	45.3
	Drug overdose	21	28
	Hanging	12	16
	Self-inflicted injury	8	10.7
Number of Attempts	Single attempt	49	65.3
	Multiple attempts	26	34.7

<b>Impulsivity</b>	Present	27	36
	Absent	48	64
<b>History of Major Mental Trauma</b>	Present	18	24
	Absent	57	76

Table 3 shows the psychological, social, and family factors that can lead to suicide attempts. A significant percentage of patients reported having a family history of suicide, suggesting potential genetic, environmental, or learnt behavioral effects. The familial aggregation of psychiatric morbidity was supported by the fact that more than 25% of the participants had a family history of mental disease.

Nearly one-fourth of patients had a history of substance use, which may be a factor in impulsive suicide attempts and disinhibition. A significant percentage of patients also had poor interpersonal interactions, suggesting that social pressures and a lack of support may be major contributors to suicide behavior in depressed people.

**Table 3: Psychosocial and Familial Risk Factors (N = 75)**

Variable	Category	n	%
<b>Family History of Suicide</b>	Present	9	12
	Absent	66	88
<b>Family History of Psychiatric Illness</b>	Present	21	28
	Absent	54	72
<b>Substance Use History</b>	Present	17	22.7
	Absent	58	77.3
<b>Poor Interpersonal Relationships</b>	Present	24	32
	Absent	51	68

Table 4 depicts the relationship between chosen risk variables and the severity of suicide attempts. Severe suicide attempts were substantially correlated with female gender, indicating that women in this clinical population are more vulnerable. Impulsivity's involvement as a crucial risk factor was highlighted by its substantial and statistically significant correlation with serious attempts. Depression intensity is one of the best indicators of suicidal behavior, as evidenced by the much greater per-

centage of severe suicide attempts among patients with severe depression. Severe attempts were also strongly linked to a family history of suicide and a history of severe mental trauma, underscoring the combined impact of psychological stress and familial risk. Overall, our results show that the intensity of suicidal behavior in depressed individuals is influenced by several interconnected clinical and psychosocial variables.

**Table 4: Association Between Selected Risk Factors and Suicide Attempt Severity**

Risk Factor	Severe Attempt n (%)	Non-Severe Attempt n (%)	$\chi^2$	p-value
Female gender	34 (72.3)	13 (27.7)	5.16	0.023
Impulsivity present	20 (74.1)	7 (25.9)	6.42	0.011
Severe depression	41 (82.0)	9 (18.0)	9.87	0.002
History of mental trauma	15 (83.3)	3 (16.7)	7.55	0.006
Family history of suicide	8 (88.9)	1 (11.1)	6.98	0.008

## Discussion

According to emergency department physicians, the most prevalent reasons for presentation were agitation, schizophrenia, psychosis, manic episode, and suicide attempt. Studies show that both the percentage of visitors to emergency rooms for mental issues and their utilization rates are rising. For individuals in need of psychiatric intervention owing to insufficient mental health resources, emergency rooms serve as both an access point and a final resort [11].

It was shown that the most common outcomes of mental emergency room visits were treatment rejection, admission, or discharge. Suicide attempts,

agitation, psychotic illnesses (schizophrenia, psychosis), and mood disorders were the group's most common presenting causes. Treatment rejection in the acute phase of psychotic diseases can result from symptoms including antagonism, denial of illness, and psychotic disorganization [12].

As can be expected, a significant history of mental trauma raises the chance of suicide; individuals with negative life experiences were linked to an increased risk of SB. Primary mental trauma varies depending on the stage of life. One of the primary traumas linked to SB in children is the experience of bullying. Adolescent SB is mostly caused by emotional stress, however as you get older, more

traumas might create SB intention. The primary risk factor for SB in young people is usually the emotional and physical loss of family [13]. A few research have started looking at how social and psychological variables affect the pathogenic process of SB. Discharge, it is possible that patients were not started on antidepressants, a choice that may have been motivated by worries about a rise in risk of suicide linked to the use of such pharmaceutical treatments.

For suicide-related behaviors, neurocognitive abnormalities have been suggested as a phenotype that lies in between genes and behavioral consequences. Rural women experiencing psychological discomfort have comparatively limited access to psychotherapy due to the scarcity of mental health resources in rural regions. Adoption, twin, and family studies indicate that the aggregation of suicide attempts within families may be partially caused by genetic factors, with heritability estimates of between 40–55%. Suicide is largely familial. Impulsivity and executive control have been found to be closely linked to the prefrontal cortex [14].

Receiving appropriate psychological or pharmacological therapy during admission was the only feature found by the logistic regression analysis that predicted a likely repeat of suicide. Furthermore, there may be a crucial time for suicide intervention after discharge since individuals who were admitted to a psychiatric specialty hospital were more likely to attempt suicide again after being released [15].

Clinical practice may be clarified by this study. Patients with depression who are female, have a history of severe mental trauma, have a family history of suicide, and have an impulsive disposition should be given extra care. Nowadays, physicians frequently struggle with how to effectively and efficiently incorporate new developments in suicide prevention into their practice. In many countries, it is nearly universally advised to use suicide risk assessment screening methods to look for depressed people who may be contemplating suicide.

However, clinical practice has practical time restrictions, which frequently limits the predictive effectiveness of risk screening instruments. The interview format may fluctuate amongst doctors in different nations or areas due to cultural variations, but the guidelines make it easier for medical professionals to screen for depressed patients who are contemplating suicide.

### Conclusion

The current retrospective study emphasizes how clinical severity, psychosocial stress, and familial vulnerability interact intricately to influence suicide behavior in depressed individuals. Young adults and women made up a sizable fraction of the re-

search group, highlighting the necessity of age- and gender-sensitive suicide prevention tactics. The biggest predictor of suicide attempts and their intensity was shown to be severe depression, highlighting the vital significance of early identification and appropriate treatment of depressive episodes.

The predominant methods of suicide attempts, poisoning and drug toxicity, are indicative of the widespread availability of toxic substances and medications, particularly in rural and semi-urban areas. Affective instability and poor executive control may be major contributors to suicidal behaviors, as seen by the strong correlation between impulsivity and serious suicide attempts. Additionally, a family history of suicide and a history of severe mental stress were strongly associated with increasing severity, suggesting cumulative psychological and genetic susceptibility.

Overall, the results highlight the need for regular suicide risk assessment in depressed individuals, especially in emergency situations and inpatient mental health facilities. It is essential to use comprehensive management strategies that incorporate medication, psychotherapy, psychosocial support, and family participation. Improved clinical results and suicide prevention initiatives may result from targeted intervention for high-risk populations that significantly lowers the frequency and intensity of suicide attempts.

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