

Original Article**Repeated Suicidal Attempt in Intoxicated Patients:
An Epidemiological Survey**

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*** For Correspondence****Abstract**

Background: Suicide is the second leading cause of death worldwide for people aged 15–29 years. Self-harm and suicidal behaviours are one of the major public health problems in all developed and developing countries.

Methods: This study was performed on suicidal attempt patients under the Department of Forensic Medicine, Rajshahi Medical College & Hospital, Rajshahi, Bangladesh from January 2017 to December 2021. Based on other studies conducted in this field, the sample size was 200 cases. The sampling method in this study was convenience sampling.

Results: 200 cases attempted suicide for the first time among them 85 cases had a history of previous suicidal attempt. In the both groups, the numbers of women were significantly more than men. In addition, 72 cases of the first group and 55 cases of the second group were under 25 years old and 62.6% of cases with first-time suicidal attempt and 64.70% of cases with suicide re-attempts were unemployed. In both groups, the most common drug for suicidal attempt was benzodiazepines (30.4% and 21.2%). Unfortunately, two patients died. Also, 67.8% in the first-time suicide attempt group and 57.6% in the suicide re-attempt group had adjustment disorder. No significant differences were observed between both groups in terms of gender, age, marital status, education, chronic disease, drug and habit history, employment status, diagnosed mental disorder, and type of drug used for the current suicidal attempt. **Conclusion:** Suicide is a leading cause of mortality among young individuals. Many of them have clinical depression or subclinical symptoms of depression. In conclusion, young age, unemployment, mental disorders (especially adjustment disorder), and female gender (without any special order) are the most important risk factors for suicide attempts and re-attempt.

Keywords: Suicide, Repeated Suicide, Intoxicated Patients, Mental Disorders.

Introduction

Suicide is the second leading cause of death worldwide for people aged 15–29 years¹. Various studies have shown that suicide is one of the main causes of death in all countries in the world. Self-harm and suicidal behaviours are one of the major public health problems in all developed and developing countries². In most studies, age has been identified as a risk factor in the suicide process. Suicide is not an accidental and meaningless act but it is a way to get rid of a problem or crisis that undoubtedly hurts the person³. The World Health Organization (WHO) estimates that each year approximately one million people die from suicide, which represents a global mortality rate of 16 people per 100,000 or one death every 40 seconds. In the last 45 years suicide rates have increased by 60% worldwide. Suicide was the second leading cause of death among 15-29 years olds globally in 2012. It is predicted that by 2020 the rate of death will increase to one every 20 seconds⁴. Majority of the suicidal attempters are below the age 30 years⁵. With regard to mental illnesses causing suicide attempt, depression and other psychiatric illnesses like schizophrenia and personality disorders are commonly associated with suicide attempts, psychosocial issues like lack of social cohesion, unemployment, interpersonal relationship issues were common causes of suicide attempts⁶. Recurrence of suicidal attempt is one of the most important and common problems in patients with drug and chemical poisoning. Suicide re-attempt can be affected by different variables. More than 45% of individuals with suicidal attempts have at least one history of attempting suicide. A history of suicide-related behaviours and mental disorders are two strong risk factors for a successful suicide. Having previous psychological symptoms is associated with the repetition of suicidal behaviours⁷. Suicidal ideation is strongly associated with suicidal attempts. In a study by Srivastava and Kumar 17% of patients with suicidal ideation attempted suicide⁸. In a study among terminally ill cancer patients, conclude that suicidal ideation and desire for death appeared to be linked exclusively to the presence of a psychiatric disorder⁹. Substance abuse has also been studied as one of the topics related to mental disorders in suicide re-attempts and one of the suicide methods in the literature¹⁰. The pattern of suicidal behaviours is very complex and is largely influenced by epidemiological factors, time, and place¹¹.

Materials and Methods

This study was performed on suicidal attempt patients under the Department Of Forensic Medicine, Rajshahi Medical College & Hospital, Rajshahi, Bangladesh from January 2017 to December 2021. Based on other studies conducted in this field, the sample size was 200 cases. The sampling method in this study was convenience sampling. Data were collected using data collection forms through interviews with patients and their companions. Patients were interviewed when their level of consciousness was normal. The suicide attempt and the type of mental disorder were confirmed by a psychiatrist and the dossiers were completed. Patients with substance abuse were confirmed by urine tests. Age, sex, educational status, marital status, employment status (having a job), previous medical history, history of medication use, history of habit (addiction, alcohol consumption, smoking, and drugs), number of suicide attempts, and methods used in the past were collected through interviews with the patients or their companion. Duration of hospitalization and admission to the ICU were observed directly. Statistical analysis: The obtained data were analyzed by IBM SPSS software version 22 (IBM Corp, Armonk, New York, USA). First, the normal distribution of data was determined by the Kolmogorov-Smirnov test and in the next step; central and descriptive indices were calculated and expressed. Depending on the distribution of samples in the statistical population, parametric tests, such as independent t-test or Chi-square parametric tests were used. The Kendall correlation test was used to assess the relationship between variables. The significance level was considered $P < 0.05$ for all variables.

Results

Total 200 suicidal attempted patients were examined, of whom 115 people attempted suicide for the first time and 85 had a history of previous suicidal attempt. The first time patients were 73 women and 42 men, and the suicide re-attempt patients were 54 women and 31 men. The gender ratio was significantly different between the two groups. The mean age in the first-time suicide attempt group was 30.3 ± 12.3 years and in the suicide re-attempt group was 29.1 ± 10.97 years. There was a significant difference in age distribution between the two groups. Also, 72 cases of the first group and 55 cases of the second group were under 25 years old show in table 1.

Table I: The patients information (N=200)

No. (%) / Mean± SD			p value
Total	Fist-Time Suicide	Suicide Re-Attempt	
127(63.5)	73(63.48)	54(63.53)	0.956
29.9±11.8	30.3±12.3	29.1±10.97	0.258
127(63.5)	72(62.6)	55(64.70)	0.505
72(36.0)	40(34.78)	32(37.6)	0.583
84(42.0)	52(45.2)	32(37.6)	0.097
99(49.5)	52(45.2)	47(55.3)	
45(22.5)	25(21.7)	21(24.7)	0.114
6(3.0)	4(3.48)	2(2.35)	
7(3.5)	3(2.6)	4(4.71)	
14(7)	10(8.7)	4(4.71)	0.366
52(26.0)	28(24.35)	24(28.24)	0.260
5(2.5)	4(3.5)	1(1.4)	0.389
1	1	1	0.599
1(0.5)	1(0.9)	0(0.0)	0.703

*P<0.05; #the mentioned P-value is related to the comparison of the two groups (first-time suicide attempt and suicide re-attempt). In the suicide re-attempt group,

the single cases were significantly more than married people (P<0.05).

Overall, 68% had a diploma and undergraduate degree, 24% had postgraduate and bachelor’s degrees, 4% had a master’s degree and above, and 4% were illiterate. In both groups, the number of cases with a diploma and undergraduate degree was higher. Also, 62% of the first-time suicide group and 64% of the suicide re-attempt group were unemployed. In the suicide re-attempt group, the number of single cases was significantly (P< 0.05) more than married people. The results showed that more than 90% of the subjects in both groups had no history of chronic disease. Diabetes (62%), epilepsy 4%, and cancer 4% were the most common chronic diseases mentioned in the first-time suicide attempt group, and in the suicide re-attempt group, diabetes 56% and epilepsy 22% were the most chronic diseases. Also, more than 50% of people in both first-time and suicide re-attempt groups did not have a history of addiction, substance abuse, smoking, or alcohol use (68% and 58%). In the first-time group, opium consumption was 1.7% and amphetamine use was 1.1% and in the suicide re-attempt group, these cases were 3.4% and 2.3%, respectively. Examination of medical history showed that more than 70% of people in both groups had no previous medication use. The most used drugs were clonazepam (19.5%), alprazolam (14.3%), and metformin (9.1%) in the first-time group. In the suicide re-attempt group, the most commonly used drugs were alprazolam (19.2%) and clonazepam (11.5%).

Table II: Diagnosed psychological disorders in studied patients (N=200)

Psychological Disorders	No. (%)		
	First-Time Suicide	Suicide Re-Attempt	Total
Adjustment disorder	78(67.8)	49(57.65)	127(63.5)
Major depressive disorder	20(17.4)	21(24.70)	41(20.5)
Bipolar	10(8.7)	11(12.94)	21(10.5)
Schizophrenia	4(3.5)	4(4.71)	8(4.0)
Anxiety disorder	2(1.7)	0(0.00)	2(1.0)
Other diagnoses	1(0.9)	0(0.00)	1(0.5)

Psychiatric counselling of patients showed that significantly (P< 0.05) most people in both groups had the adjustment disorder (67.8% in the first-time group and 57.65% in the suicide re-attempt group). Other mental disorders included Major Depressive Disorder (MDD), bipolar disorder, schizophrenia, and anxiety disorders in both groups, respectively (Table II).

The results showed that in both groups, the most commonly used drug for current suicidal attempt was benzodiazepines (30.43% and 21.2%) (Fig-1).

The most common drugs and chemicals used for previous suicidal attempt were benzodiazepines, acetaminophen, and antipsychotics (31.0%, 15.7%, and 14.1%). Repeated suicide attempt rate with the same medications and chemicals, which were used in the previous suicide attempt was as follows: benzodiazepines: 38.26%, acetaminophen: 15.65%, and rodenticides: 33.04%. This rate for methadone, toxic alcohols, Selective Serotonin Reuptake Inhibitor (SSRIs), organophosphates and insecticides, and stimulants was 50% each. Among patients with suicide re-attempt, 44.7% did not have a history of hospitalization. Also, 3.5% of the first-time group and 1.4% of the suicide re-attempt group were admitted to the ICU. The median duration of hospital stay was one day for both groups. No significant differences were observed between both groups in terms of gender, age, marital status, education, chronic disease, drug and habit history, employment status, diagnosed mental disorder, type of drug used for the current suicide attempt, and duration of hospital stay. The number of people who were released with personal consent was significantly ($P < 0.05$) higher in the suicide re-attempt group (69.4% vs. 30.6%).

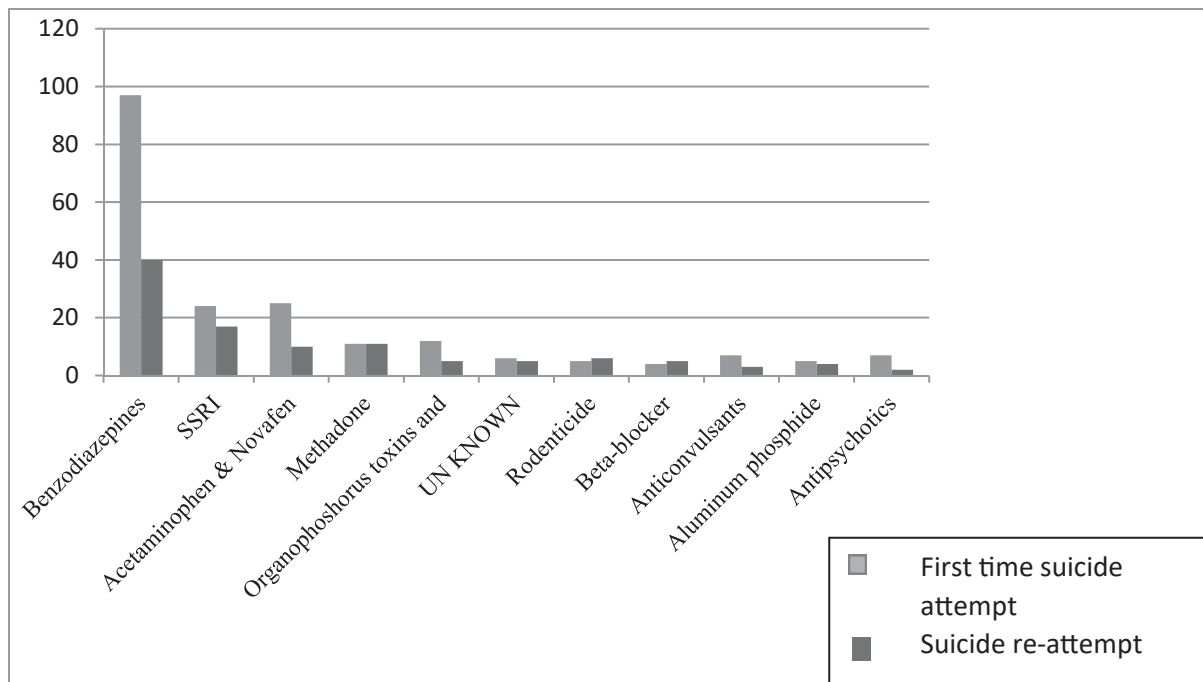


Figure-1: The most common drugs and chemicals used for current suicidal attempt.

Discussion

Depression is commonly associated with suicide attempts. It is commonly under diagnosed. Persons with depression also have high suicide intent. Several studies indicate that depression is one of the most commonly encountered psychiatric illnesses which often leads to suicidal attempt. Hence the need to screen for depression among suicide attempters is essential. Total 200 suicidal attempted patients were examined, of whom 115 people attempted suicide for the first time and 85 had a history of previous suicidal attempt. The first time patients were 73 women and 42 men, and the

suicide re-attempt patients were 54 women and 31 men. The gender ratio was significantly different between the two groups. The mean age in the first-time suicide attempt group was 30.3 ± 12.3 years and in the suicide re-attempt group was 29.1 ± 10.97 years. There was a significant difference in age distribution between the two groups. The results of our study showed that in both groups, the female gender, the age under 25 years, unemployment, having a mental disorder, especially adjustment disorder had the highest frequency. The percentage of suicide re-attempt in our cases was 37%. One possible reason for the high rate of re-attempt

frequency might be untreated or ignored mental disorders, according to the history of chronic illnesses, medication intake, and psychological disorders. No significant differences were observed between the first-time suicide attempt group and the suicide re-attempt group in terms of gender, age, marital status, education, chronic disease, drug history and habit history, employment status, diagnosed mental disorder, and type of drug used for the current suicidal attempt. Overall, the burden of suicidal attempt behaviour is higher in women because they are more likely than men to report attempt suicide, and be hospitalized. Among 68% had a diploma and undergraduate degree, 24% had postgraduate and bachelor's degrees, 4% had a master's degree and above, and 4% were illiterate. In both groups, the number of cases with a diploma and undergraduate degree was higher. Also, 62% of the first-time suicide attempt group and 64% of the suicide re-attempt group were unemployed. In the suicide re-attempt group, the number of single cases was significantly ($P < 0.05$) more than married people. The results showed that more than 90% of the subjects in both groups had no history of chronic disease. Diabetes (62%), epilepsy 4%, and cancer 4% were the most common chronic diseases mentioned in the first-time suicide attempt group, and in the suicide re-attempt group, diabetes 56% and epilepsy 22% were the most chronic diseases. Women are more vulnerable to suicidal behaviours, probably because of their vulnerability to psychological trauma and psychosocial stress. Various studies have shown that women are more likely to attempt suicide¹¹. The results of our study also showed that in groups, first time suicide attempt and suicide re-attempt, women were more than men. Women are more likely to use the poisoning to commit suicide¹². Our study was conducted in Rajshahi Medical College Hospital, and the results showed that most suicidal attempt with drugs and chemicals were committed by women. The health status of the unemployed people is worse than employed. They are less confident, seem to be affected by their problems, and report significantly with psychological disorders. These disorders, such as depression or chronic anxiety can be the result of unemployment, but can also be due to job loss or inability to find a job¹³. Unemployment is related to changes in mental health, including suicidal behaviour and ideation. Various studies have shown the relationship between unemployment and suicidal attempt¹⁴. The results of our study showed that unemployed people in both groups were more than

employed ones, and unemployment was an important risk factor for suicidal attempt. Adjustment disorder is a mental disorder caused by psychosocial stressors. Adjustment disorders play an important role in the causes of suicidal attempt¹⁵. In the study by Pelkonen et al. on 89 outpatients, 25% of patients were diagnosed with adjustment disorder, suicide attempt, or suicidal ideation¹⁶. Among patients with suicide re-attempt, 44.7% did not have a history of hospitalization. Also, 3.5% of the first-time group and 1.4% of the suicide re-attempt group were admitted to the ICU. The median duration of hospital stay was one day for both groups. No significant differences were observed between both groups in terms of gender, age, marital status, education, chronic disease, drug and habit history, employment status, diagnosed mental disorder, type of drug used for the current suicide, and duration of hospital stay. The number of people who were released with personal consent was significantly ($P < 0.05$) higher in the suicide re-attempt group (69.4% vs. 30.6%). Adjustment disorder was the most common disorder in our cases. Psychiatric counselling of patients in our study showed that the prevalence of adjustment disorder was 63.5% in the first-time suicide attempt group and 63.8% in the suicide re-attempt group. The diagnosis of adjustment disorder is less clear when patients are chronically exposed to stressors, as this type of exposure is associated with Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD)¹⁷. Therefore, one of the reasons for the low incidence of adjustment disorder in other studies could be its classification as other disorders.

Conclusion

Suicide is a leading cause of mortality among young individuals. Many of them have clinical depression or subclinical symptoms of depression. In conclusion, young age, unemployment, mental disorders (especially adjustment disorder), and female gender (without any special order) are the most important risk factors for suicide attempts and re-attempt. Considering the presence of mental disorders in all subjects, it seems that treatment and prevention of these disorders, especially in young people, can reduce the risk of suicide. However, increasing job opportunities may also reduce the number of cases.

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