

## Original Research Article

# Description of clinical factors for suicide attempts in a tertiary care hospital of northern part of India

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## ABSTRACT

**Background:** Suicide is the result of an act deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome. Suicide attempts are a significant public health problem. The present study aimed to explore the various clinical characteristics of suicide attempters in a tertiary care hospital of Shimla, Himachal Pradesh, a northern state of India.

**Methods:** We conducted a descriptive study among patients with attempted suicide to the department of Psychiatry, Indira Gandhi Medical College (IGMC) Shimla. A structured, self-designed interview schedule and short-form revised Eysenck personality questionnaire-Hindi (EPQRS-H) was used for data collection. Data was analyzed using Epi info software v 7.2.0.

**Results:** There were total 77 participants in the study out of which 44 (57.1%) were females. Mean age (Standard deviation) of participants was 30.8 years (9.9 years). Relationship problems were the most common (48.1%) recent life event followed by health events (28.6%). Depression was found to be the most common diagnosis (62.3%). Pesticide consumption was the method of attempting suicide in 72.7% of females compared to 66.7% of males.

**Conclusions:** Recent major life events especially relationship problems may lead to majority of suicide attempts. There is urgent need to focus on patients suffering from depression by health personnel as well as family members. The sale of the pesticides should be regulated to keep in check the misuse of the same.

**Keywords:** Clinical factors, Gender based differences, Psychiatric diagnosis, Pesticide consumption, Suicide attempt

## INTRODUCTION

Suicide is the result of an act deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome.<sup>1</sup> Suicide attempts are a significant public health problem.<sup>1,3</sup> Globally, every year close to 800,000 people take their own life and there are many more people who attempt suicide.<sup>2</sup> Suicide does not just occur in high-income countries, but is a global phenomenon. In fact, over 78% of global suicides

occurred in low- and middle-income countries in 2015.<sup>4</sup> In Indian context National Crime Records Bureau (NCRB) report suggests that more than one hundred thousand people (134,799) in the country lost their lives by committing suicide during the year 2013 making the suicide rate of 11/100,000 population per year.<sup>5</sup> This makes for an increase in suicide rate of 5.7% over the period of 2004-13 for a simultaneous increase of 15% in the population during the same period.<sup>6</sup>

Every person in the world is at risk for committing suicide owing to current competitive, stressful and overambitious environment. A suicidal act that does not end in death is commonly called a suicide attempt or a suicidal gesture.<sup>7</sup> Suicide attempt gives an opportunity for psychiatrist as well as family to intervene. Mental health is a part of basic definition of health by World Health Organization (WHO).<sup>8</sup>

Every citizen has the right of health including mental health. To care citizens mental health services India had launched National Mental Health Program way back in 1982.<sup>9</sup> Due to the large population it is not possible for the government to provide good quality of mental health services to all the people.

So, there is need for identifying people who are at higher risk, thus requiring help from family, community as well as mental health professionals. If we know the risk factors predisposing individuals for suicide attempt, timely help can be provided to such individuals resulting in decreased morbidity, mortality and improved quality of life among such individuals.

Literature about suicide attempters as well as completed suicides paints an alarming picture.<sup>10</sup> It is suggested that around 25% of suicides are preceded by non-fatal self-harm in the previous year.<sup>11</sup> Various studies in India as well as abroad predict different risk factors for suicide attempts. There is a need to obtain data relevant to a particular region, especially in the current environment where suicide is considered a major public health concern.<sup>9</sup>

The present study aimed to explore the various clinical characteristics of suicide attempters in a tertiary care hospital of Shimla, Himachal Pradesh, a northern state of India.

## **METHODS**

This study was a descriptive cross-sectional study. Study was carried out for six months from March 2017 through August 2017. We have included all consecutive patients of attempted suicide during the study period.

### ***Study population***

Patients referred with attempted suicide to the Department of Psychiatry, Indira Gandhi Medical College (IGMC) Shimla. IGMC Shimla is a Tertiary care institute situated in sub- Himalayan region of Northern India.

### ***Study tool***

A structured, self-designed interview schedule and short-form revised Eysenck personality questionnaire-Hindi (EPQRS-H) was used for data collection regarding

various clinical characteristics and personality traits of participants.<sup>12</sup>

### ***Inclusion criteria***

All adult patients (Equal to or above the age of 18 years) referred with attempted suicide to the Department of Psychiatry, Indira Gandhi Medical College (IGMC) Shimla.

### ***Exclusion criteria***

Patient not willing to participate in the study and unable to comprehend were excluded from the study.

### ***Methodology followed***

When a patient with attempted suicide who fulfilled the inclusion criteria was referred to department of Psychiatry IGMC Shimla for consultation from various departments, a detailed history taking and examination was done. Information regarding study variables were obtained through interview schedule as described in study tool. All the patients were provided with standard medical and psychiatric care irrespective of their participation in study.

### ***Statistical analysis***

Data was collected, entered in Microsoft excel spreadsheet and was cleaned for errors. We analyzed the data using Epi info software v 7.2.2.2 (Available free online at CDC site). Qualitative variables were presented as percentages with their 95% confidence intervals. Quantitative variables were presented as means and their standard deviations.

## **RESULTS**

There were 77 participants in the study out of which 44 (57.1%) were females. Mean age (SD) of participants was 30.8 years (9.9 years) ranging from 25 to 50 years. Family history was found to be present in 22 (28.6%) participants while history of previous suicide attempts was found in only 5.2% of the study participants.

Majority (91%) of the study participants had faced major event in their life in last one year of which relation problems were found to be most common (48.1%) followed by health-related issues (28.6%). Almost 90% of participants were suffering from some form of mental health disorder out of which depression was the most common disorder (62.3%). 18.25 of the participants were current smokers and 3.9% were having some form of chronic medical condition.

Majority of participants (81.85) believed in god whereas 22.1% were practicing yoga or meditation. Pesticide consumption was the most common method of

attempting suicide (70.1%) followed by ingestion of benzodiazepines (Table 1).

**Table 1: Distribution of participants according to various clinical variables.**

Variables	Frequency (n)	(%)	95% CI
<b>Sex</b>			
Male	33	42.9	32.2-54.3
Female	44	57.1	45.7-67.8
<b>Personality traits</b>			
Neuroticism traits	59	76.6	65.7-84.9
Psychoticism traits	15	19.5	12.0-30.0
Extraversion traits	3	3.9	1.2-11.6
<b>Family risk factors</b>			
Absent	53	68.8	57.5-78.3
Present	22	28.6	19.5-39.8
<b>Previous suicide attempts</b>			
Yes	4	5.2	1.9-13.2
No	73	94.8	86.8-98.1
<b>Recent major life events</b>			
Relationship	37	48.1	37.0-59.3
Occupational	7	9.1	4.3-18.0
Health	22	28.6	19.5-39.8
Financial	4	5.2	1.9-13.2
Nil	7	9.0	4.3-18.0
<b>Psychiatric diagnosis</b>			
Absent	9	11.7	6.1-21.2
Depression	48	62.3	50.9-72.6
Adjustment disorder	10	13.0	7.1-22.7
Others	10	13.0	7.1-22.7
<b>Current smoking status</b>			
Yes	14	18.2	11.0-28.6
No	63	81.8	71.4-98.8
<b>Chronic medical condition</b>			
Yes	3	3.9	1.2-11.6
No	74	96.1	88.4-98.8
<b>Belief in god</b>			
Yes	63	81.8	71.4-89.0
No	13	16.9	10.0-27.1
<b>Practicing yoga/meditation</b>			
Yes	17	22.1	14.1-32.9
No	60	77.9	67.1-85.9
<b>Method of suicide</b>			
Benzodiazepines	12	15.6	9.0-25.7
Pesticides	54	70.1	58.8-70.4
Others	11	14.3	8.0-24.2

Psychotic personality traits were present in 25% of females as compared to 12.1% of males. Relationship problems were major recent life event present in both males (43%) and females (53%). Familial risk factors were present in 25% of males as compared to 32.6% of the females. In females none experienced financial problem recently as compared to males in which it was

present in 12.1% of participants. Depression was present in 68.1% of females as compared to 54.5% of males. While 30.3% of the male participants were practicing yoga/meditation, only 15.9% of the females were practicing the same. Pesticide consumption was the method of suicide attempt in 72.7% of females and 66.7% of males whereas benzodiazepine consumption as a method of suicide attempt was found in 24.2% of males compared to 9.1% of the females (Table 2).

## DISCUSSION

For most countries around the world, suicide attempt as an important cause of death imposes a considerable financial burden and is a serious public health problem.<sup>13-15</sup> In our study, females constituted majority of participants. This fact is supported by literature that males have an approximately 4 times higher rate of successful suicide than women. Nonetheless, women are more likely to attempt suicide than men.<sup>16</sup> In a study by Halder S et al they found that 72% of participants were females, similarly a study by Sharma RC, 53% of participants were females.<sup>10,17</sup> In our study majority of participants had faced recent major life event and relationship problems were the most common among them. Decreasing level of patience, spending more time at online platforms, and decreased inter-personal communication can be the possible explanations for this. The findings are also supported by previous studies that find inter-personal conflict, financial stressors, and educational burden among the most common triggers for attempted suicide.<sup>14,15,18-20</sup>

Pesticide consumption was found to be most common method for attempting suicide in the present study both in males and females. The results were similar to a study by Patel V in which they described that, poisoning mostly from pesticides used in agriculture was found to be the leading cause of death followed by hanging in both 15 years and older men and women.<sup>21</sup> In contrast to our finding time trends according to NCRB reports over the 10-year period from 2004 to 2013 showed that poisoning as a method of suicide in males and females of 15-29 years has gone down with hanging becoming the preferred method.<sup>3</sup>

Similarly, findings of a recent systematic review of suicide in India of 36 studies found that hanging was the most frequently reported method of suicide (10-72% of all suicides) followed by self-poisoning (16-49%), drowning (3-39%) and burning or self-immolation (6-57%).<sup>22</sup> Himachal Pradesh is mainly a rural state and agriculture is the chief occupation in the state so there is easy availability of pesticides, therefore, it may be the reason behind pesticide consumption as most common method for attempting suicide in our study.

In this study majority of the participants had some kind of psychiatric illness and depression was the most common diagnosis followed by adjustment disorders in both males

and females. The reports from psychological autopsy studies conducted in developed countries suggest that psychiatric disorders are present in about 90% of people

who die by suicide and that these conditions contribute to 47-74% of the population attributable to the risk of suicide.<sup>23,24</sup>

**Table 2: Gender based clinical risk factors for attempting suicide.**

Variables	Males		Females	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Personality traits				
Neurotic traits	28	84.9	31	70.5
Psychotic traits	4	12.1	11	25.0
Extraversion Traits	1	3.0	2	4.5
Family risk factors				
Absent	24	75.0	29	67.4
Present	8	25.0	14	32.6
Previous attempts				
Yes	3	9.1	1	2.3
No	30	90.0	43	97.7
Recent major life events				
Relationship	14	42.4	23	52.3
Occupational	3	9.1	4	9.1
Health	9	27.3	13	29.5
Financial	4	12.1	0	0.0
Nil	3	9.1	4	9.1
Psychiatric diagnosis				
Absent	4	12.1	5	11.4
Depression	18	54.5	30	68.1
Adjustment disorder	5	15.2	5	11.4
Others	6	18.2	4	9.1
Current smoking status				
Yes	14	42.4	0	0.0
No	19	57.6	44	100.0
Chronic medical conditions				
Yes	2	6.1	1	2.3
No	31	93.9	43	97.7
Belief in God				
Yes	25	78.1	38	86.4
No	7	21.9	6	13.6
Practicing yoga/meditation				
Yes	10	30.3	7	15.9
No	23	69.7	37	84.1
Method of suicide				
Benzodiazepines	8	24.2	4	9.1
Pesticides	22	66.7	32	72.7
Others	3	9.1	8	18.2

## CONCLUSION

From our study we conclude that recent major life events especially relationship problems may have led to majority of suicide attempts in our study area. There is lack of counseling services for these problems. Moreover, people are also not utilizing already existing counseling services either due to lack of awareness or stigma related to

consulting mental health personnel. There is urgent need to focus on patients suffering from depression by health personnel as well as family members. It is imperative to promote mental health in the community by conducting information, education and communication (IEC) campaigns among the public regarding mental health problems and services available for them. Strengthening this component will not only improve the perception of

the mental ailments among the community but also help in bringing the stability in their lives as well of those associated with them. Indulging in various physical activities in the form of exercises and yoga can be an effective stress buster. The sale of the pesticides should be regulated to keep in check the misuse of the same. Further analytical studies are warranted to confirm findings of our study.

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