

# Psychiatric and Psycho-social Profile of Risk Factors in Attempted Suicide in Sikkim, India

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## ABSTRACT

**Introduction:** Psychiatric disorders has been considered one of the major driving factors for suicide and attempted suicide. The rates of suicide attempts are found to be higher than the completed suicides. Attempted suicide is a common clinical problem in a general hospital setting, encompassing a wide variety of medical and social perspective, some important psycho-socio-demographic variables such as life events, mode of attempts and social factors have not been explored in depth in Sikkim. Current study aimed to identify the socio-demographic factors, methods and to identify the risk factors leading to suicidal attempts.

**Material and Methods:** All the consecutive cases of suicide attempts (n=100) treated in a general hospital were evaluated for psychosocial, clinical risk factors, suicide characteristics, psychiatric morbidity co-morbidity and psychiatric diagnosis by using ICD – 10. Presumptive stressful life event scale was utilized to calculate life events score. A self designed Performa was administered to the subjects relating the factors responsible for the attempts. The data thus obtained was compiled and analyzed.

**Result:** Result of the present study shows 49% were male and 51% were female. Peak occurrence of suicidal attempts was found in the second and third decades (21-30 years). Nuclear family, rural background, self employed and having secondary education were more represented. Hindus constituted 59% of the total suicide attempters and 56% were from middle (class II) socio-economic groups. More than 75% of attempters had psychiatric diagnosis and precipitating life events prior to attempts. The most common method of attempt was by hanging. Depressive disorder (44%) constituted a major category of psychiatric disorders.

**Conclusion:** Majority of attempters were young adults, had lower educational achievement with a high prevalence of psychiatric morbidity and co-morbidity. Early identification and treatment of psychiatric disorders would have prevented the mortality associated with suicide. A proper psychiatric referral system through a village mechanism of prompt recognition and referral for psychiatric services should be built up to reduce the incidence of suicidal death.

**Key words:** Attempted Suicide, Risk Factors

unemployed.<sup>2,3</sup> A number of studies in India have reported the existence of psychiatric disorders in attempters, affective disorders being the commonest followed by substance use disorders.<sup>4,5</sup> Attempters were reported to have experience more number of stressful life events and precipitating events mainly the interpersonal problems.<sup>6</sup> There has been less work in systematic profiling of risk factors in developing countries compared to the developed countries.<sup>7</sup> Variation in suicide risk factors in different regions and cultures are known.<sup>8</sup> It is not known whether the risk factors reported in the studies from the western countries can be applied into our country therefore more research is required to identify the risk factors pertaining to our cultural norms. In the same context, it was intended to study the risk factors associated with suicide attempts in a sample from Sikkim, one of the smallest and hilly region in North- East India and to reflect the preventive strategies based on social milieu.

## MATERIAL AND METHODS

This study was conducted in Sir Thutob Namgyal Memorial Hospital, Gangtok, Sikkim from June 2014 to may 2015. This hospital caters mental health services to a major part of Sikkim and the adjoining areas of West Bengal. Consecutive 100 suicide attempters recruited from casualty, medical, surgical and psychiatric department over a period of one year were taken up for the study. All the suicide attempters admitted in the hospital were referred and evaluated for psychiatric illness and diagnoses are made as per the ICD-10. The inclusion criteria of a cases were the patient who reported with a suicide attempts. For the purpose of the study, a case of suicidal attempt was defined as: "A person who had made deliberate act of self- harm, consciously aimed at self-destruction, irrespective of their intention to die." Patients whose injuries were considered to be accidental were excluded from the study. The cases were interviewed once they gained physical and cognitive stability. An informed consent was taken from the family members after explaining the purpose of study. Social class was determined using modified Prasad's classification of social class.<sup>9</sup> Variables

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## INTRODUCTION

Attempted suicide is one of the acute emergencies and a challenging public health issue associated with several psychosocial and medical conditions. Suicide attempts ranging from 10 – 40 times more frequent than completed suicide.<sup>1</sup> In India, suicide attempts are more common in females, majority were Hindus, married, from a rural background staying in a nuclear family and they were

related to socio-demographic and suicide characteristics, life events, mode of attempt, family history of psychiatric disorders and suicide were assessed using a self-designed Performa. Presumptive stressful life event scale was utilized to calculate life events score, which provides stress scores for different life events.<sup>10</sup> The association among variables were analyzed by chi-square tests.

## RESULTS

Table I shows the age and sex distribution of cases studied. Of the 100 suicidal attempters, 49% were males and 51% were females. The mean age for male were (29.60) higher than that of females (27.62). Peak occurrence of suicidal attempts was found in the second and the third decades (21-30 years). A majority of the samples belonged to less than 30 years age group (67%).

Table II illustrates socio-demographic characteristics of the attempters. Among the attempters majority of females (61%) were married, 51% of male and 31% of females were unmarried. A majority of male and female attempters (90%, 78%) respectively had an education up to matriculation, belonging to nuclear families (73% male, 65% female). The samples included 53% housewives and 15% students similarly 57% of male attempters were self employed.

Hindus constituted about (59%) of the total attempters and only few (3%) were Muslim. Majority (47% males, 45% females) of the attempters were from the rural background. About half of the sample belonged to class II (59% male, 53% female) on socio-economic status scale. Of the total attempters 23% had a history of previous attempts, with a family history of suicide (12%) and psychiatric illness in first degree relatives (20%). In the sample studied, 43% of male attempters were alcoholic and 37% had a history of substance dependence, significantly higher than the female attempters. Of the total attempters 15% also had impulsive traits.

Table III shows the diagnostic distribution of psychiatric and co morbid psychiatric illness. Majority of the suicide attempters (male 67%; female 82%) had psychiatric disorders, depressive disorder being the predominant (male 35%, female 53%) followed by schizophrenia (male 24%, female 17%). Alcohol dependence with co-morbid psychosis was noted in 16% of male attempters, 4% of male and female attempters was receiving treatment for multidrug resistant tuberculosis with Cycloserine had co morbid psychosis, 6% of female attempters had epilepsy with co morbid depression. Impulsive traits was noticed in 4% of female and 2% of male respectively.

Table IV shows different modes of suicidal attempts, most frequent mode of attempting suicide was by hanging in male

Age (years)	Male n (%)	Female n (%)
< 20	7(14)	14(27)
21 – 30	26(53)	20(41)
31 – 40	10(20)	11(21)
41 – 50	3(06)	3(06)
>51	3(06)	3(06)
Mean	29.60	27.62

**Table-1:** Age and sex distribution in attempters

Variables	Attempters n(%)	
	Male	Female
Education:		
Illiterate	4(08)	6(12)
Up to Matriculate	44(90)	40(78)
Matriculation and above	1(02)	5(10)
Marital status:		
Married	23(47)	31(61)
Unmarried	25(51)	16(31)
Divorce	1(02)	4(08)
Occupation:		
Unemployed	10(20)	3((06)
Self employed	28(57)	6(12)
Govt. employed	7(14)	4(08)
House wife	0	27(53)
Student	4(08)	11(21)
Family type:		
Nuclear	36(73)	33(65)
Joint	13(26)	18(35)
Religion:		
Hindu	30(61)	29(57)
Buddhist	15(30)	16(31)
Christian	3(06)	4(08)
Muslim	1(02)	2(04)
Residence:		
Rural	23(47)	23(45)
Urban	10(20)	12(23)
Semi urban	16(32)	16(31)
Socio-economic status:		
Low (III)	19(39)	24(47)
Middle (II)	29(59)	27(53)
High (I)	1(02)	0
Past attempts:	13(26)	10(19)
Family history of mental illness:	9(18)	11(21)
Family history of suicide:	7(14)	5(10)
Alcoholism:	21(43)	5(10)*
Substance abuse:	9(18)	2(04)*
Tobacco:	9(18)	10(19)
Impulsive traits:	10(20)	5(10)
*- Significant		

**Table-2:** Socio-demographic variables in attempters

Diagnosis	Male n (%)	Female n (%)
Depression	17(35)	27(53)
Schizophrenia	12(24)	9(17)
Schizoaffective Disorder	3(06)	5(10)
Obsessive Compulsive Disorder	0	1(02)
Anxiety Disorder	1(02)	0
MDR with Psychosis	2(04)	2(04)
MDR with Depression	0	1(02)
SUD with Psychosis	2(04)	0
ADS with Psychosis	8(16)	1(02)
ADS with Depression	2(04)	0
Epilepsy with Depression	1(02)	3(06)
Emotionally unstable/Impulsive Personality traits	1(02)	2(04)
MDR - Multidrug Resistance Tuberculosis; SUD - Substance use disorders; ADS - Alcohol dependent syndrome		

**Table-3:** Current Psychiatric and co-morbid diagnosis

Methods	Attempters	
	Male n (%)	Female n (%)
Hanging	20(41)	12(23)
Organo-phosphorus poisoning	5(10)	9(17)
Burning	5(10)	13(25)
Cutting/Slashing	8(16)	1(02)
Drowning	2(04)	1(02)
Drug overdose	7(14)	14(27)
Jumping from height	2(04)	1(02)

**Table-4:** Methods of Suicidal Attempts

Life Events	Male n (%)	Female n (%)
Marital conflict	3(06)	5(10)
Divorce	1(02)	4(08)
Extramarital affairs	3(06)	3(06)
Death of spouse	1(02)	1(02)
Illness of self or others	11(22)	10(19)
Death of family members	3(06)	3(06)
Financial problem	6(12)	3(06)
Broken love affairs	4(08)	0
Examination failure	0	3(06)
Appearing for exam	1(02)	0
Family conflict	13(26)	11(21)
Conflict with in laws	0	3(06)
Multidrug resistant tuberculosis illness	1(02)	2(04)
Separation	2(04)	3(06)
Mean	56.93	58.88

**Table-5:** Major Life Events in Attempters

(41%) against drug overdose in female (27%) followed by cut injury in male (16%) and burning in female (25%). Other modes of attempting suicide were organo-phosphorous poisoning, drowning and jumping from a height.

Table V shows the nature of stressful life events experienced by the attempters in the study. The mean score of female attempters (58.88) were higher than the male attempters (56.93). All the attempters had experienced stressful life events prior to their attempts, mostly the family conflict (26% male, 21% female) followed by self illness or other in the family (22% male, 19% female). Other risk factor relating to attempts were financial problem, broken love affairs in male (12%, 8%) and marital conflict, divorce in female attempters (10%, 8%), 4% of female and 2% of male also perceived multidrug resistant tuberculosis treatment as stressful.

## DISCUSSION

The present study is an attempt to find out risk factors associated with suicide attempts. A preponderance of younger age groups is frequently noted in suicide attempters. Majority of our sample comprised adults, suggesting that they constitute a vulnerable age group. This observation is identical with many studies in India and the west.<sup>11,12</sup> There are studies relating to both male and female predominance in suicide attempts in hospital based studies,<sup>13</sup> which is in consistent with this study. However, this is at variance with western study wherein majority of attempters were females.<sup>14</sup>

Low education is an important risk factor for suicidal behaviors. The individuals with higher educational levels constituted less number of attempted suicide which is consistent with other studies.<sup>8,13,15</sup> Low education, less income generation in the midst of ongoing private industrial growth and globalization puts an individual at a risk of economic insecurity and suicidal behavior<sup>16</sup> as observed in the study.

Unemployment is also a known risk factor for suicide attempts,<sup>17</sup> however a considerable proportion of male attempters in this study were self-employed and females were housewife. In the situation of high competition for the jobs and to improve economic status of the family, majority of males are adopting employment at self or in private sector, would probably experience job uncertainties and instability than the permanent government jobs, which might explain partly the reason for economic stress precipitating suicidal behaviors. Some Indian study had found housewives the common category in suicidal behavior,<sup>22</sup> consistent with this study. The housewives are subjected to household and family stresses, unavailability of emotional outlet or lack of emotional cushion for a women may account for suicidal behavior. Lower economic strata and poverty have been associated with suicide attempters.<sup>18,7</sup> In this study, the middle-lower socio-economic status was predominant in the attempters. In the rapidly changing economic scenario of the present day society, those in middle lower class are equally stressed and would make them vulnerable to attempts.

Divorced, separated, widowed or being single have been found to be a risk factors in many western studies.<sup>19</sup> In Indian studies, it is common to find a higher proportion attempters being married as observed in this study.<sup>13</sup> Marital and relationship problems have most often been reported in Indian studies.<sup>20</sup> Family patterns may predispose an individual to suicidal behavior.<sup>21</sup> The traditional joint family system in India is gradually changing to nuclear units, thereby decline in family and emotional support would add stress and the risk might increase. The present study revealed more demanding nature of nuclear family. Religion has been regarded as an important factor in suicidal behavior, although it is difficult to interpret the religious aspect of suicide attempt, research has shown more rates in the countries which follow Hinduism, Buddhism or Asian religion.<sup>16</sup> Proportion of Hindu attempters were high in this study.

Rural-urban differences in suicide have been reported from Indian studies.<sup>23,24</sup> Most of the attempters in this study were from rural areas. The reason could be due to social isolation, difficulty in identifying warning signs, limited access to health facility and doctors and lower levels of education. Past attempts have been found to be one of the predictors of future suicide.<sup>25</sup> Repeat attempts and family history of suicide attempts and suicide have been noted in this study. Identifying repeaters and treatment of psychiatric illness is important as death by suicide could be significant.

Alcoholism is another risk factor for suicide. This study has found high proportion of alcoholics among suicide



attempters,<sup>26</sup> which is consistent with the study where significant male attempters were alcoholic. Spouse of alcoholic are also at high risk of attempted suicide.<sup>27</sup> The driven factors could be related to financial difficulties, marital discord, delusional jealousy etc. The easy availability of alcohol, low price, within the reach of irrespective of economic class and non-legal restriction towards use and sale is probably contributing higher rate of alcohol use and suicidal behavior in alcoholics in the state.

Association of substance abuse and suicidality is well known.<sup>28</sup> Substance abuse was more reported in male attempters in this study which is in agreement with the other study.<sup>28</sup> Impulsive traits constituted about 15% of the total attempters nearly matching the existing literature in the world.<sup>29</sup>

Rates of psychiatric diagnosis as high as 93% have been described among suicide attempters,<sup>8</sup> depressive disorders were the most common diagnosis,<sup>8</sup> consistent with this study. Co-morbid physical illness, substance use and alcoholism are risk factors for common mental disorders leading to vulnerability of suicidal attempts, about 22% of subjects in this study had psychiatric co-morbidity. This implies the urgent need to promote education to allow early detection and timely treatment thereby minimizing suicidal attempts. Most of the Indian studies reports consumption of organo-phosphorous compound as a common mode of suicide attempt.<sup>8,16,15</sup> Contrary to our findings, the common method employed to execute self harm was hanging in the males and drug overdose in females. The variation in the methods used could probably relate to lethality triad and severity of intentions to die in male opting for a violent method. Most of the attempts in Indian studies have found to be of higher lethality,<sup>13</sup> as observed in this study. The soft method preference in female probably signifies low intentionality, may mean that suicidal attempt is more an emotional cry for help rather than intentional attempt.

Presence of stressful life events seems to have important implication for understanding suicide attempts, the relationship between life events and suicidal behavior has been well recognized.<sup>30</sup> Studies have found life events to be a significant risk factor in the suicide attempters,<sup>31</sup> which is in association with our study where both the male and female attempters experienced precipitating life events prior to attempt. This finding would suggest that attempts are often immediate reactions to stressful personal and interpersonal crisis. Family conflicts were found to be the major triggerers for attempting suicide in both the sexes in the present sample. The common causes of conflict were domestic violence related to alcoholism and abusive, assaultive behavior. The other precipitating factors for suicide attempt might include personal illness, economic hardship, marital disharmony, extramarital affairs, divorce, broken love affairs, death of close relative's etc. Similar observations were also reported from many other study.<sup>8</sup> This stressful events may increase the risk of suicide in a vulnerable individual in presence of concomitant mental disorder and previous attempts, hence there is a need for utmost clinical attention and counseling

of cases with familial maladjustment because the emotional stress would increase the vulnerability to suicide behavior.

### Limitations

This is a hospital based study, community based studies can reveal more significant factors relating to suicide attempts and this would avoid the selection bias, numbers of attempters who were not referred thus not included in the study.

### CONCLUSION

Attempted suicide is a major public health problem due to multiple factors. The factors responsible for attempted suicides were young adults, low educational level, married, from a rural and nuclear family background with a significant family history of psychiatric illness culminating in to violent mode of attempts. This study have identified psychiatric disorders as significant driving and a risk factors for suicide attempt in addition to exposure to perceived stressful life events. By modifying interpersonal relationship problems in the family, promoting healthy coping mechanism to reduce stress can help in preventing many suicidal attempts. Early identification of suicide-prone individuals and mental disorders, public awareness and promotion of treatment of mental disorders in rural areas would add a milestone towards preventive strategy. Further study is needed to extend and refine the knowledge of risk factors associated with suicide attempts pertaining to socio-cultural norms in Sikkim.

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