Study of attempted suicide in the catchment area of Mamatha general hospital, Khammam, India

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ABSTRACT

Background: Persons with psychiatric co-morbidity have markedly high risk of suicide attempts.

Aim To study the socio-demographic variables, role of life events and prevalence of psychiatric diagnosis in suicide attempters. The present study has been undertaken with an intention to have deeper insight in to the mental health of suicide attempters.

Methods A semi structured interview consisting of socio-demographic details, a proforma to document suicide attempt data, Presumptive Stressful Life Event scale (PSLE) to know the desirable or undesirable life events. Mini International Neuropsychiatric Interview plus (MINI Plus) was used to assess the psychiatric abnormality. Data was statistically analyzed using Statistical Package for the Social Sciences - Version 10 (SPSS -10).

Results: Suicide attempters experience peaking of stressful events in the early months before the attempt. Most common diagnoses were depression, personality disorders, followed by alcohol dependence and anxiety disorders.

Conclusion: Suicide attempters are more among the groups of young age, female gender, rural background, married, belonging to nuclear family and low socio economic class. Majority of the suicide attempters are suffering with psychiatric illness.

Key words attempted suicide; life events; psychiatric diseases

INTRODUCTION

The word 'suicide' is derived from the Latin word for "self murder". It is a fatal act that represents persons wish to die. One of the earliest scientific classifications was given by Emil Durkheim who divided suicide in to egoistic, anomic and altruistic types. [1] Kreitman et al introduced the term 'para suicide' to refer a non-fatal act of deliberate self-injury or self-poisoning. [2] Pacheco et al reported that in the prefrontal cortex of suicide victims, the phosphoinositol signalling mechanism and the protein levels are significantly low. [3] Noradrenergic neurons are present at a lower density in the locus coeruleus of suicide victims, with out any morphological anomalies. [4] Roy et al have reported familial transmission of suicidal behavior. [5] Mann et al reported that in suicide attempters by violent means there are low CSF levels of 5- hydroxyacetic acid. [6] According to W.H.O, suicide rate in India is approximately 114/100,000 population in males and 8/100,000 in females. [7] Wide variations in suicide rates are there even within the country. In India Southern states have a suicide rate of more than 15/100,000 when compared to Northern states which have suicide rate less than 3/100,000 every year. It is estimated that one in every 60 persons die by suicide in our country. [8]

The risk of completed suicide in the first year after an episode of attempted suicide is 100 times that of general population, and the presence of psychiatric illness increases the risk. [9] Suicide risk is strongly associated with mental illness, unemployment, low income, marital status, and family history of suicide. Epidemiological and clinical perspective was highlighted by Stengel et al. [10] The effect of most risk factors differs significantly by gender. A family history of suicide can be found in 7 -14% of suicide attempters. [11] Durkheim et al approached suicide from the social perspective and showed that "social isolation" and "anomie" determine suicidal behavior. [11] Psychoanalysts ascribed suicide to the death instinct and self directed aggression.
Almost 95% of all persons who committed or attempted suicide have a diagnosed mental disorder of which depression accounts for 80% and schizophrenia 10%. Suicide attempters of almost 90% have mental disorders. Subjects with high levels of psychiatric co morbidity had markedly high risk of serious suicide attempts as observed by Beautrais et al. In affective disorders, the risk of suicide is 25 times greater than that of general population and 15% of depressive disorder patients die by suicide, early in the course of their illness. The rate of suicide in male alcoholics is 75 times greater than general population and in heroin users the risk is 20 times higher. Suicidality is 20 times more in people with major depressive disorder and in these patients if there is co morbid borderline personality disorder risk is further increased.

With this background the present study has been undertaken with an intention of gaining a deeper insight in to the mental health of suicide attempters. The frequency and pattern of psychiatric disorders were analyzed in view of their socio demographic variables and life events.

AIMS AND OBJECTIVES
1. To study the socio-demographic variables in attempted suicide.
2. To study the role of life events in attempted suicide.
3. To study the prevalence of psychiatric diagnosis in attempted suicide.

MATERIALS AND METHODS
This study is conducted at department of psychiatry, Mamatha general hospital which is a tertiary referral hospital with a capacity of 750 beds. The study period is from 1st January 2010 to 30th December 2010.

Inclusion criteria
i) age above 15 Years ii) those patients who have attempted suicide iii) both sexes iv) should be physically fit to answer the questions v) availability of reliable informants.

Exclusion criteria
i) uncooperative patients ii) unavailability of the consent iii) those who are suffering with cognitive deficits.

Operational procedure
The subjects were contacted in emergency ward, general medical ward or in the psychiatry department as soon as they were fit to be interviewed before the sixth day of admission. The interview was conducted at the bed side. Out of 116 cases so considered 16 were excluded according to fixed criteria. Socio demographic and suicide attempt data is collected. The diagnosis is confirmed by the respective consultants in accordance to International Classification of Diseases, tenth revision (ICD-10).

Tools used
Socio-demographic proforma This consists of patient details including age, gender, education, region, employment status, marital status, family type, socio economic status and religion.

Clinical proforma This includes i) suicide plan, intent, nature of discovery ii) help sought before attempt and agency iii) details of expected effects following attempt and awareness of legal complications.

The Presumptive Stressful Life Event scale (Singh, G, et al., 1981) The PSLE uses a time scale of one year and the scale items are further subdivided into desirable, undesirable and ambiguous items, and personal and impersonal items. Has a total 51 life events.

Mini International Neuropsychiatric Interview plus (MINI Plus), English Version 5.0.0. Mini International Neuropsychiatric Interview plus (MINI plus) is a short structured diagnostic interview, developed jointly by psychiatrists and clinicians for DSM III /IV and ICD 10 based psychiatric disorders.

Statistical analysis
Data entry was done in EXCEL and the Data was analyzed using Statistical Package for the Social Sciences- Version 10 (SPSS -10).

RESULTS
The total study sample is 116 subjects, who attempted suicide.

<table>
<thead>
<tr>
<th>Table 1: The Study Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial study sample</td>
</tr>
<tr>
<td>Subjects excluded</td>
</tr>
<tr>
<td>Final study sample</td>
</tr>
</tbody>
</table>

Out of the 116 subjects initially considered, 16 were excluded, thereby the final sample is 100 subjects.

<table>
<thead>
<tr>
<th>Table 2 Socio-demographic variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>15 - 25</td>
</tr>
<tr>
<td>26 - 35</td>
</tr>
<tr>
<td>36-45</td>
</tr>
<tr>
<td>&gt;46</td>
</tr>
</tbody>
</table>
Swaroopa Chary: study of attempted suicide in Khammam

Table No. 2 explains the role of socio-demographic variables in attempted suicide. High rate of suicide attempts is found in people having psychiatric morbidity and in those who are young, female, educated, hailing from rural background, employed, married, living in nuclear families, belonging to low socio-economic class and Hindu religion. Significantly (p<0.05) higher rate of employed persons who attempted suicide, have co-morbid psychiatric diagnoses.

Table 3: Desirable/undesirable life events in suicide attempters

<table>
<thead>
<tr>
<th>Desirable/Undesirable life events</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable life events reported</td>
<td>4</td>
<td>4.0</td>
</tr>
<tr>
<td>Undesirable life events reported</td>
<td>95</td>
<td>95.0</td>
</tr>
<tr>
<td>Ambiguous life events reported</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3 shows the role of desirable and undesirable events in the life of suicide attempters. Undesirable life events play a major role (95%) in suicide attempts.

Table 4: Personal/impersonal life events correlated with diagnosis-suicide attempt

<table>
<thead>
<tr>
<th>Personal/Impersonal life events</th>
<th>With no psychiatric diagnosis</th>
<th>With psychiatric diagnosis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>22(27.16%)</td>
<td>59(72.83%)</td>
<td>81(100%)</td>
</tr>
<tr>
<td>Impersonal</td>
<td>4(21.05%)</td>
<td>15(78.94%)</td>
<td>19(100%)</td>
</tr>
<tr>
<td>Total</td>
<td>26(26%)</td>
<td>74(74%)</td>
<td>100(100%)</td>
</tr>
</tbody>
</table>

p >0.05 (NS)

Table 4 shows the role of personal and Impersonal life events in suicide attempters. The role of impersonal life events is better correlated with the diagnosis and suicide attempt than personal life events; however the correlation is not clinically significant.

Table 5: Psychiatric diagnosis in the Study Sample

<table>
<thead>
<tr>
<th>Final Study Sample 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without psychiatric diagnosis</td>
</tr>
<tr>
<td>With psychiatric diagnosis</td>
</tr>
</tbody>
</table>

Out of 100 suicide attempters, 88 were found to be having psychiatric diagnosis and 12 persons did not have any psychiatric morbidity (Table 5).

Table 6: Relationship between psychiatric diagnosis and gender in suicide attempters

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>8(33.33%)</td>
<td>16(66.66%)</td>
<td>24(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Bipolar Affective Disorder</td>
<td>2(50%)</td>
<td>2(50%)</td>
<td>4(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Alcohol Dependence Syndrome</td>
<td>6(75%)</td>
<td>2(25%)</td>
<td>8(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>4(28.57%)</td>
<td>10(71.42%)</td>
<td>14(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Schizoaffective Disorder</td>
<td>0(0%)</td>
<td>2(100%)</td>
<td>2(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Other Psychosis</td>
<td>1(25%)</td>
<td>3(75%)</td>
<td>4(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>3(37.5%)</td>
<td>5(62.5%)</td>
<td>8(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Personality Disorder</td>
<td>9(37.5%)</td>
<td>15(62.5%)</td>
<td>24(100%)</td>
<td>&gt;0.05, NS</td>
</tr>
<tr>
<td>Total</td>
<td>33(37.5%)</td>
<td>55(62.5%)</td>
<td>88(100%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 6 shows the type of psychiatric diagnosis in the study sample in relation with the gender. Majority of the females have schizophrenia and depression and male suicide attempters predominately have alcohol dependence syndrome. Personality disorders and Anxiety disorders are equally seen in both genders. Schizoafffective Disorder is observed in only females. The correlation between gender and any type of psychiatric diagnosis was not clinically significant.

Table 7 Relationship between number of suicide attempts and psychiatric diagnosis

<table>
<thead>
<tr>
<th>Number of suicide attempts</th>
<th>without psychiatric Diagnosis</th>
<th>with psychiatric Diagnosis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>10(13.33%)</td>
<td>65(86.66%)</td>
<td>75(100%)</td>
</tr>
<tr>
<td>Repeated</td>
<td>2(8%)</td>
<td>23(92%)</td>
<td>25(100%)</td>
</tr>
<tr>
<td>Total</td>
<td>12(12 %)</td>
<td>88(88%)</td>
<td>100(100%)</td>
</tr>
</tbody>
</table>

P > 0.05, NS.

Table 7 shows that in the present study sample number of suicide attempts in people with psychiatric diagnosis (26.13%) are more than in people without psychiatric disorder (16.66%). This difference however was not statistically significant (p value >0.05).

DISCUSSION

16 subjects were initially considered for the study and 16 subjects had to be excluded as per exclusion criteria. The final study sample was 100. The most common reasons for exclusion were critically ill patients who were unable to cooperate and subjects who were not giving consent.

The age range was divided into 4 subgroups of 15-25yrs, 26-35yrs, 36-45yrs and 46 years and above. Higher rate of suicide attempters with psychiatric illness were found in younger age group (65.9%) compared to 46 years and above(4.54%). This difference was not statistically significant (p>0.05). This finding is similar to the observations of other researchers who found that suicide attempts more prevalent in higher education. [8,18,22] High proportions of suicide attempts with psychiatric illness among higher education may be due to more stress on students which may precipitate psychiatric illness and leads to suicide attempt. Most of the people suffering from psychiatric illness attempted suicide belonged to rural back ground (61.36%) compared to urban (38.63%). The difference was not statistically significant (p>0.05). This finding is similar to the observations of other researchers. [22,23] More number of suicide attempts with psychiatric illness in rural background from this region explains lack of awareness of mental disorders and its management, as consequence of mental illness these people were more prone to suicide attempt compared to urban.

Most of the subjects with psychiatric illness were from employed group (75%). Remaining is students (20%) and unemployed (2.27%). This difference is statistically significant (p<0.001). This finding is differing with many other studies where they found more suicide attempts in unemployed. [24] Most of the suicide attempters with psychiatric illness belonged to married (65.9%) followed by unmarried (25%) and lowest in separated/divorced (9.09%) group. This difference was not statistically significant (p>0.05). Narang et al found suicide attempts are more in the unmarried people while Lal and Sethi reported it to be more common in married persons. [21] This finding is similar to our observation. This may be due to high level of stress in married people because of marital conflicts, quarrel with the spouse, financial problems and extra marital affairs.

Most of the attempters with psychiatric illness were from nuclear families (89.72%) compared to joint families (10.22%). This difference was statistically not significant (p>0.05). Same thing was reported by Varadkar. [25] Break down of joint families is an important risk factor for suicide. [26] Nuclear family has increased number of suicide attempts, may due to lack of psychosocial support which is found in joint family. Majority of attempters with psychiatric illness were from the lower socioeconomic status (64.27%) followed by middle (35.22%). This difference was statistically not significant (p>0.05). Above observation is similar to the finding of other researchers. [22,24,27,28] Increased number of attempters in lower socioeconomic state with psychiatric illness may be because this group has more unemployment, financial problems and related stress. Majority of them belonged to Hindu religion (80.68%) when compared to others. However this difference was statistically not significant (p>0.05). This could be attributed to their existing majority in general population.

On comparison of subgroups about life events based on divisions by Singh as 'personal' and 'impersonal' and...
desirable', 'undesirable' and 'ambiguous', across the two groups of presence or absence of psychiatric illness, it was found that there was no significant difference in the proportion of subgroups of life events across the two groups (p > 0.05). [30] With respect to the stress experienced, Singh reported that the stress expressed with undesirable items (95%) is greater than on desirable events (4%), thereby emphasizing the role of undesirable events and the stress expressed with personal items (81%) more than impersonal (19%). [29] Thus, from this study it can be inferred that the suicide attempters definitely experience peaking of events in the early months before the attempt, the stress expressed with undesirable items considerable. Eighty eight people (88%) out of 100 are made by others in the past.

Evaluation of type of psychiatric diagnosis is done and is compared between the two genders. Finally most common diagnosis found is depression, personality disorders followed by schizophrenia, alcohol and anxiety disorders. Similar observations have been made by other investigators who found depression to be most commonly present in suicide attempters. [31] Risk of suicide higher in the early course of depressive illness. [32] Suicide attempts are more common in neurotic conditions than in psychotic conditions. [30, 33, 34] Other investigators have also made similar observations. [30, 33, 34] Most of the suicide attempters suffering with schizophrenia (18.18%) are females when compared to males (12.12%). Similar findings are observed in the study of Haris et al. [16]

In suicide attempters with alcohol dependence syndrome, majority were males. Similar observations have been made by others in the past. [10, 20, 28] Repeat suicide attempts are more in people having psychiatric diagnosis. This finding is reported by many other observers. [10, 35, 36, 37] This explains that psychiatric illness is one of the risk factors for repeated suicide attempts.

Limitations

- This was a hospital based study; hence may not be representative of general population.
- The subjects could not be followed up.
- On direct enquire, there could be chances of wrong information.

CONCLUSIONS

- Majority of the suicide attempters suffer from psychiatric illness.
- Suicide attempts are more among younger population, female gender, rural background, and married, belonging to nuclear family and from low socio economic class.
- Undesirable life events are most commonly reported 3 months prior to suicide attempt.
- Depression and personality disorders are the most common diagnoses.

Implications and future directions

Patients with psychiatric illnesses should be given utmost care. They should not be left alone, should be given periodic counseling and treatment as their suicide risk and intent is considerably high compared to the general population. Availability of pesticides mostly organ phosphorous compounds & household chemicals can also be restricted. The easy availability of these poisons makes them the most common poisons used for self poisoning. Those patients who have prior attempts should be particularly given due importance and treatment.

Mental health service should be made on integral part of community health programs. Further studies with bigger sample size and prospective follow up design may through light upon this.

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