

Prevalence, nature and severity of psychiatric morbidity among suicide attempters

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Abstract

Background: The link between attempted suicide and psychiatric illnesses has been very inconsistent. The severity of depression has been noted an indicator of long term suicidal risk. Understanding the trends in suicidal behavior can aid in identifying potential targets for prevention of suicides. **Aim:** To study the prevalence, nature and severity of psychiatric morbidity among suicide attempters. **Material and Methods:** This cross sectional study included 75 consecutive referrals of attempted suicide. Assessment was done as early as possible during the hospital stay. Socio Demographic Profile, MINI Plus Version 5.0 and Beck's Depression Inventory were used for assessment. **Results:** The mean age of the study sample was 29.73±10.6. The majority of the suicide attempters were from the rural areas, males, single, with primary education. Manual laborers formed the highest group (24%). 69.5% of the subjects did not have family history of any psychiatric illness. Out of the 75 subjects, 73 (97.33%) had a psychiatric diagnosis. Principal among the psychiatric diagnosis were mood/affective disorders, accounting for 36% of the diagnoses. **Conclusion:** All patients presenting with a suicide attempt have to be thoroughly evaluated, especially for psychiatric morbidity, including substance abuse, personality disorders, life events and family and social networks. Management of patients of self harm should include careful screening for psychiatric symptoms.

Key Words: Psychiatric morbidity, Suicide attempters, Intentional self-harm, Prevalence of Psychiatric disorders.

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INTRODUCTION

Each Suicide is a personal tragedy which not only takes the life of the individual, but also affects the lives of families, friends and the society at large. Among the patients who attempted suicide, the suicide rate in the subsequent 12 months was reported to be about a 100 times greater than in the general population.¹ The link between attempted suicide and psychiatric illnesses has been very inconsistent. Though some Indian studies

reported 9% to 10.4% cases of attempted suicide to be having psychiatric illnesses, the authors themselves say that the standard psychiatric nomenclature at that time (1970) was ill suited for classifying those that attempted suicide.^{2,3} A family history of suicide has been found to be significantly associated with suicide in psychiatric patients, and is found to increase the risk of attempts in patients with a wide variety of diagnoses including unipolar and bipolar affective disorders, schizophrenia, depressive neurosis and personality disorders.⁴ The severity of depression as an indicator of long term suicidal risk has been pointed out by several authors.^{5,6} Hence, assessment of the depressed mood assumes great significance in suicide prevention. Prior suicide attempts are among the strongest risk factors for completed suicide. For an individual who has engaged in self harm, especially multiple attempts, the risk of dying by suicide is significantly higher than for the general population, especially during the first 12 months following self harm.^{7,8} Understanding the trends in self harm can aid in identifying potential targets for prevention, therefore, this

study was undertaken to study the prevalence, nature and severity of psychiatric morbidity among suicide attempters.

MATERIAL AND METHODS

This cross sectional study of 75 consecutive referrals of attempted suicide was conducted at Kasturba Medical College Hospital and Wenlock District Hospital, Mangalore. Both the Wenlock District Hospital and the Kasturba Medical College Hospital have a 100% admission rule for all cases of self-harm. This is to ensure thorough observation for physical complications, and also for psycho-social evaluation and counseling, which occurs concurrently during the period of admission.

Definitions

For the purpose of the study, the definition of self-harm was adopted from Hawton, 2003, in order to minimize bias, and ensure maximum coverage.

- *Self-poisoning* is defined as the intentional self-administration of more than the prescribed dose of any drug, whether or not there is evidence that the act was intended to result in death.
- *Self-injury* is defined as any injury which has been deliberately self-inflicted.

Inclusion Criteria

- a. All patients who presented with a suicidal attempt/Intentional Self harm to the Casualty and emergency services of Wenlock District Hospital and Kasturba Medical College Hospital, Mangalore.
- b. Males and females aged 15 years and above.

Exclusion Criteria

- a. Patients who refused to give consent
- b. Age less than 15 years

Assessment was done as early as possible during the hospital stay. Patients who were physically unstable or were disoriented immediately after the attempt were approached again once their physical status and cognitive deficits improved. After patient voluntarily consented on the Informed Consent Form, further study related assessments were conducted. Illiterate patients consented by their thumb impressions, and an impartial witness signed to indicate the validity of the Informed Consent process. Self-rated scales to these patients were read out, and the patient's choice, as indicated by the patient, was marked, preferably by the impartial witness. For every patient, effort was made to interview a key informant / relative, at least over telephone.

Instruments Used

1. Socio Demographic Profile, which included past Psychiatric consultations, past suicide attempts was used.

2. MINI Plus Version 5.0, July 1, 2006 was used to confirm the Psychiatric diagnosis, and to thoroughly evaluate for Psychiatric comorbidities, without any bias. This gave diagnoses comparable to both ICD -10 and DSM-IV. Since, Depression preceding the suicide attempt was the object of the study, rather than depression at the time of interview, the instrument to be used was to have been a self-rated one. Hence, Beck's Depression Inventory was used.
3. Beck's Depression Inventory, a 21 item self-report inventory, was used. Each item consists of four alternative statements that represent gradations of a given symptom rated in severity from 0 to 3. The total summated scores can range from 0 to 63. This instrument was either self-administered, or read aloud to illiterate patients. Score of 0–9 indicates that a person is not depressed, 10–18 indicates mild-moderate depression, 19–29 indicates moderate-severe depression and 30–63 indicates severe depression. Higher total scores indicate more severe depressive symptoms.

Statistical Methods: Sampling method was a non-random sampling (Convenient sampling). The data was analyzed using the Statistical Package for the Social Sciences, version 16 (SPSS 16.0) for windows. (SPSS, Inc).

RESULTS

A total of 75 attempters met the eligibility criteria for inclusion into this study. The youngest study subject was 16 years old; the oldest was 65 years old (Table 1). The mean age of the study sample was 29.73 ± 10.6 . The age group with the highest attempts was 15-25 years (42.7%) with age group 25-35 years following closely behind, with 33.3%. A closer look at the different age group, showed a very highly significant difference between the 15-35 yr group and other groups ($p < 0.001$). Out of the 75 suicide attempters, 41 (54.7%) were males and 34 (43.5%) were females. However, this difference did not reach statistical significance (Table 1). The majority of the suicide attempters were from the rural areas, which was statistically highly significant, ($\chi^2 = 11.52, p = 0.0032$). 17.3% from the urban and 33.3% from the semi urban also attempted self-harm. Majority of the subjects had either primary (36%) or high school (22.7%) education. 16% were illiterate, 17.3% had college education, 6.7% were graduates and there was a lone post graduate. With regard to the occupation, manual laborers formed the highest group (24%). This group was closely followed at 22.7% by housewives and

agriculturists/farmers. Only 10.7% were unemployed. Students comprised another 10.7% salaried class and professionals together accounted for 9.3%. Regarding marital status, 50.7% were single and unmarried; divorced /widowed accounted for 2.7%. Another 2.7% were living separately, though not legally divorced.44% was currently married and living with spouse.

Table 1: Characteristics of the studied population (n=75)

Patient characteristics	No. of patients	Percentage
Age groups (yrs)		
<35	57	76.0%
35-45	11	14.7%
45-55	05	6.7%
>55	02	2.7%
Sex		
Male	41	54.7%
Female	34	45.3%
Domicile		
Urban	13	17.3%
Semiurban	37	49.3%
Rural	25	33.3%
Occupation		
Students	08	10.7%
Housewives	17	22.7%
Agriculturists	17	22.7%
Manual labourers	18	24.0%
Salaried	06	8.0%
Professional	01	1.3%
Unemployed	08	10.7%
Marital status		
Unmarried	38	50.7%
Married	33	44%
Divorced/ Separated	2	2.7%
Widowed	2	2.7%

90.7% of the suicide attempters were living with family and friends. 8% were living alone and a single person (1.3%) was living in a hostel away from home. 69.3% had no history of substance use. 21.3% met criteria for alcohol harmful use/dependence. 9.3% were using alcohol occasionally. In addition to alcohol dependence, 3 subjects also met criteria for dependence for Cannabis and Benzodiazepines. One of them also had heroin dependence. One subject had a family history of suicide (1.3%), two persons (2.6%) had a history of attempted suicide in the family. 22.7% of the attempters had a family history of Alcohol Dependence syndrome. One person (1.3%) each had a family history of Depression, Schizophrenia, Anti Social (Dissocial) Personality Disorder. 69.5% of the subjects did not have family history of any psychiatric illness (Table 2).

Table 2: Family history of studied population

Family history	No. of subjects	Percentage
Nil	52	69.5%
Alcohol Dependence Syndrome	17	22.7%
Antisocial Personality Disorder	01	1.3%
Depression	01	1.3%
Intentional Self Harm	02	2.6%
Schizophrenia	01	1.3%
Suicide (Completed)	01	1.3%

Past history of intentional self-harm was absent in 76% of the present sample. 18.7% had attempted once. Two persons, 2.7% had attempted twice and one each (1.3% each) had attempted thrice and four times respectively. None had attempted more than that number. Out of the 75 subjects, 73 (97.33%) had a psychiatric diagnosis. Principal among the psychiatric diagnosis were mood/affective disorders, accounting for 36% of the diagnoses. Table 3 shows the detailed break-up of the psychiatric diagnoses, and it indicates that among the mood disorders, dysthymia was the highest with 17.3% followed by moderate depression accounting for 10.7%. The group of adjustment disorders and acute stress reaction accounted for 26.7% as a single diagnosis. More than one diagnosis was noted in 44% of the subjects, with main second diagnosis being either alcohol dependence or a mood disorder or personality disorder. Five subjects had a double depression (dysthymia with depressive episode). Four persons had schizophrenia, one had schizoaffective disorder and together they accounted for 6.6% of the total diagnoses. The group of anxiety disorders accounted for 9.2% of the diagnoses. There was a lone case of mild mental retardation with co morbid alcohol dependence, as well as a lady with organic mood disorder- mania with seizure disorder, both of whom attempted impulsively. Among significant physical illnesses, one had bronchial asthma, one had epilepsy, one had a CNS tumor which was operated, one had orthopedic problems and two had gynecological problems.

Table 3: Distribution of current psychiatric diagnosis

Psychiatric diagnosis	Frequency	Percentage
No Psych Diagnosis	02	2.7
Mood Disorders	27	36
Schizophrenia	04	5.3
Schizo affective	01	1.3
Adjustment disorders	20	26.7
Alcohol Dependence Syn	07	9.3
Personality Disorders	05	6.7
Interpersonal Problems	01	1.3
Mental Retardation	01	1.3
Anxiety disorder	03	3.9
Organic mood disorder	01	1.3
Acute psychosis	01	1.3
Post schizophrenic depression	01	1.3
Somatiform disorder	01	1.3
Total	75	100

With regard to the methods employed for the intentional self-harm, an overwhelming 61.3 % used poisoning as a method. These were mainly agricultural chemicals and pesticides, though rare instances of bath room cleaner, and laboratory acid were also used 18.67% used a tablet overdose as a mode of suicidal attempt. Four persons each (5.33%) used either hanging or drowning for their attempt, 4% used burns, one person used self-cutting, and one person, a case of schizoaffective disorder, had kept his head on the railway track in front of an oncoming train. He was rescued by passersby. 76% did not have a

previous history of self-harm, 18.7% had attempted once earlier, 2 persons (2.7%) had attempted twice earlier, while one each attempted thrice and four times earlier. When the current psychiatric diagnosis was compared to the method of ISH (table 4), it revealed that poisoning with agricultural chemicals, pesticides, etc., was the most favored mode of attempt, across the different psychiatric diagnoses. Also, it revealed a very highly significant difference that patients with dysthymia and adjustment disorder would use poisoning as a method of ISH ($p=0.001$).

Table 4: Method of Intentional Self Harm Used across different Psychiatric diagnoses

Current psychiatric diagnosis	Method of Intentional Self Harm used							Total (Number)
	Poisoning	Hanging	Overdose	Drowning	Cutting	Burns	Others	
Nil Psych Diagnosis	1	0	1	0	0	0	0	2
Mood Disorders	21	0	4	1	0	1	0	27
Schizophrenia	2	0	0	2	0	0	0	4
Schizo affective	0	0	0	0	0	0	1	1
Adjustment disorder	14	1	4	0	0	1	0	20
Alcohol Dep Syn	3	2	0	0	1	1	0	7
Personality Dis	1	0	3	0	1	0	0	5
Interpersonal Prob	0	1	0	0	0	0	0	1
Mental Retardation	1	0	0	0	0	0	0	1
Anxiety disorder	1	0	2	0	0	0	0	3
Organic mood disorder	0	0	0	1	0	0	0	1
Acute psychosis	0	0	0	0	1	0	0	1
Post schizo depression	1	0	0	0	0	0	0	1
Somatoform disorder	1	0	0	0	0	0	0	1
Total	46	4	14	4	3	3	1	75

N=No of people (Total n=75)

DISCUSSION

Suicidal behavior has large number of underlying causes, which are complex and interact with one another. Psychiatric disorders play a major role in suicidal behavior. Identifying these causes and their role in suicidal behavior is central in preventing suicide. In our study, the age group with the highest attempts was 15-25 years (42.7%). In Venkoba Rao's study, 88% of the attempters ranged in the age group of 10 to 30 years.²Jain *et al.*, and Sethi *et al.*, had around 80% in the age of 15-30 years.^{9,10} Our study is closely in line with these earlier findings. Although most of the studies from western countries have observed preponderance of female to male attempters, certain other western studies are in favour of male predominance. Jain and colleagues found 58.9% males and 41.1% females in his sample.⁹Sethi *et al.*, found a male to female ratio of 3:2.¹⁰Nandi noted a reversal of trend from female to male preponderance among suicide attempters in India.¹¹Our own study shows a male preponderance, though the difference was not statistically significant. Venkoba Rao noted 20% illiterates and 80%

illiterates.² Findings from our current study show similar results, with 16% being illiterate, and the rest being literate. Agriculture is the predominant occupation in India, and the higher representation of the rural population and the farmers, is a valid representation of the general population sample of India. Sato *et al.*, also found a dominance of agriculturists in his sample.¹²Our own study noted a predominance of manual labourers, agriculturists and housewives. Unemployment was also noted to be a high risk. However, a point of interest is that many of the manual labourers were involved in agriculture related activity. Sethi *et al.*, found a higher prevalence in service (clerical) class, which he attributed to the financial insecurities and anxieties related to the difference between the reality and expectations on the occupational and financial front.¹⁰ Though our sample shows a majority of agriculturists and manual labourers, the schism between reality and expectations seems valid here also. National Crime Records Bureau reports poisoning as the commonest method of suicide, followed by hanging and burning.¹³ Our own study results indicate

a predominant method of poisoning, which was used by 61.3%. This is in accordance with most Indian studies, where poisoning, especially with agricultural chemicals is the predominant method. This mostly reflects the easy availability of the poisons, usually pesticides, etc., in an agricultural society. 18.7% used a tablet overdose. The tablets which were used for overdose also included tablets which were easily accessed – like Paracetamol, Cetrizine. One patient used Quetiapine which was prescribed to her mother for psychosis. Many used Benzodiazepines which unfortunately are available without a prescription, inspite of legal restriction about the sale and use of Benzodiazepines. Sethi *et al.*, found that more than one third took a tablet overdose, 30% poisoned themselves, while the remainder used other means.¹⁰ The tablet overdose may be a factor of the predominantly urban sample in the study. Use and sale of Benzodiazepines with valid prescription or after expiry of the prescription should be strictly restricted and strict punishment/strictures should be enforced against erring pharmacists. Jain *et al.*, found 9% with previous history of ISH;⁹ other Indian studies had found that 4-8% had past history of ISH. In our own study, we noted that 24% had a past history of self-harm. As a prior suicide attempt is one of the strongest pointers towards future suicide, this is an area which requires more attention. In our study, alcohol dependence was the predominant family history, accounting for 22.7%. Bagadia *et al.*, also found alcohol addiction more frequently in the family of the attempted suicides.¹⁴ The use of clinical psychiatric evaluation, combined with MINI Plus was very advantageous. We were able to screen for all diagnoses, and co-morbidities were thoroughly checked. Perhaps this is the reason for the high rate of 97.3% of psychiatric diagnoses amongst our sample. This is in conformity with studies like Barraclough, who had reported around 93% psychiatric morbidity among suicide attempters.¹⁵ Another off-shoot of this result is the focus on Adjustment disorders and Acute Stress Reactions as very important diagnoses to be considered in suicide research. Sethi, Gupta and Singh also observed that suicidal attempt as a matter of impulse was “of course” having some definite precipitant such as domestic dispute, financial stress, rejection in love.¹⁰ Perhaps all these would be better re-classified as Adjustment disorders. As several studies have found inter personal problems to be major stressors among suicide attempters, we need to emphasize more on the same. Sathyavathi K calls each suicide attempt, whatever the motivation, a ‘gamble with death’ and every opportunity to prevent another attempt must be seized.¹⁶

CONCLUSION

All patients presenting with a suicidal attempt have to be thoroughly evaluated, especially for psychiatric morbidity, including substance abuse, personality disorders, family history, past history of attempts of self-harm and family and social networks. Adjustment disorders were found to be major diagnoses, and need to be evaluated in detail. Management of patients of self-harm should include careful screening for psychiatric symptoms. This also has implications for staff training.

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