

Hundred Cases of Suicide Attempters Admitted in a Medical Intensive Care Unit: Study of Psychosocial Factors in Relation to Age and Sex

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ABSTRACT

Hundred consecutive suicide attempters admitted in the medical intensive care unit (MICU) of Christian Medical College, Vellore during the period December 1991 to December 1992 were evaluated in detail with respect to psychosociodemographic variables. Instruments used included a specially designed socio-demographic proforma, Gurmeet Singh's presumptive stressful life event scale (PSLE) and DSM-III R diagnostic criteria. Young males constituted major part of the sample. Organophosphorous poisoning was the commonest mode of suicide attempt. More than 90% had psychiatric diagnoses. Adjustment disorder was the commonest psychiatric diagnosis followed by major depression and alcohol abuse/dependence. Many of the risk factors reported earlier was found to be operating in older age group only. Among males the commonest mode of attempt was organophosphorous poisoning where as in females it was drug over dose and native poisons. The implication of these findings are discussed in the context of prevention and further management strategies.

Key words: Suicide, attempted suicide, medical intensive care unit

INTRODUCTION

Suicide and deliberate self harm are major issues in health care all over the world accounting for 0.4%-0.9% of all deaths (1). It is a significant problem in India with a reported rate of 6.8 per

1,00,000 population (2). Thus it is an important medical emergency having major psychiatric implications. The magnitude of this problem with different facets involving medical, psychiatric, social, religious and other considerations, demands a systematic investigation into

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the nature of such behaviour. In India, there have been thought provoking studies in the area of suicide (3,4,5,6). Since suicide attempts are primarily managed as a medical emergency, an awareness of the psychiatric aspects of this behaviour will definitely help in the prevention and further management of this health hazard. Present investigation has studied some of the psychosocial aspects of individuals who attempted suicide.

MATERIAL AND METHODS

One hundred consecutive suicide attempters admitted to the medical intensive care unit (MICU) of the Christian Medical College, Vellore between December 1991 and December 1992 were studied. Detailed interview was conducted with patients and their relatives within the first few days of admission. Patients whose physical condition prevented the evaluation were interviewed later as and when their condition improved. In the majority, one or both parents, spouse, or siblings were also available for the assessment. The psychosociodemographic characteristics were documented in a specially designed proforma.

We classified the intensity of suicide attempt into mild, moderate and severe based on the nature of attempt, quantity of substance consumed, suicide intent, and the availability immediate rescue. Psychiatric diagnosis was made based on DSM-III R Criteria (7). The Presumptive Stressful Life Event Scale formulated by Gurmeet Singh (8) designed specifically for Indian population was employed to evaluate the life events that occurred within 1 year prior to the suicide attempt.

Statistical significance was assessed using Chi-square test with Yate's correction (wherever necessary), Fisher's Exact test, Kruskal Wallis test, one way ANOVA Mann Whitney test. All 'p' values are two tailed 'p' values. Statistical analysis was performed by using SPSS for windows statistical software package.

RESULTS

Majority (71%) of the suicide attempters were less than 20 years age group and were males (65%); 59% were married; 57% were educated; 47% were employed and 60% were from rural background. About half (46%) the patients were from lower socio-economic status and 54% were from nuclear families. The clinical characteristics of suicide attempters shows that 43% had family history of psychiatric morbidity with alcoholism suicide and depression as the common problems. Physical ailments were reported by 42% of patients. Of these, abdominal pain without any demonstrable cause and epilepsy were the most common. Past psychiatric morbidity was present in 41% of the patients. Of these, depression and alcoholism were the most frequent diagnoses. Organophosphorous compounds were consumed by 53% of the patients and 47% consumed native poisons/took drug over dose. The intensity of suicide attempts was judged to be mild in 19%, moderate in 49% and severe in 32% of the patients. Majority of suicide attempters (93%) in the present study had a current psychiatric diagnosis. In these patients, adjustment disorder was the most frequent followed by major depression and alcohol abuse/dependence. Eleven patients died during the first week after admission. These details are shown in Table 1.

Table 1 : Demographic details of 100 cases of suicide attempters admitted in a medical intensive care unit

Variable	Frequency (%)
Age (Years)	
<20	24
21-30	47
31-40	11
>40	18
Sex	
Male	65
Female	35
Marital status	
Married	59
Single/separated	41
Residence	
Rural	60
Urban	40
Family history	
Alcoholism	24
Suicide	14
Depression	13
Others	4
Physical ailments	
Abdominal pain	16
Epilepsy	8
Tuberculosis	4
Diabetes	4
Others	18
Past psychiatric morbidity	
Depression	16
Alcohol abuse	13
Schizophrenia	3
Others	12
Past suicide attempts	24
Education	
Metric	57
Above Metric	43

Table 1 contd....

Table 1 contd....

Variable	Frequency (%)
Occupation	
Unemployed	53
Employed	47
Socioeconomic status	
Low	46
Middle	35
High	19
Family type	
Nuclear	54
Joint	46
Type of attempt	
Organophosphorous	53
Other methods*	47
Intensity of attempt	
Mild	19
Moderate	49
Severe	22
Current Psychiatric Diagnosis	
Adjustment disorder	33
Major depression	32
Alcohol abuse/dependence	10
Others	23
Outcome	
Alive	90
Dead	10

*Includes drug overdosage and consumption of native poisons

Analysis of psychosocial variables (family history and past history of psychiatric morbidity, past suicide attempt, physical ailments, mode of attempt, intensity of attempt, major psychiatric illness, stressful life events and outcome) in different age groups showed significant association of past and family history of psychiatry morbidity, major psychiatric illnesses, severity of suicide attempt and life event score in older age group (Table 2).

Table 2 : *Analysis of age versus psychosocial variables*

Variable	Age (years)				Significance
	<20 (n=24)	21-30 (n=47)	31-40 (n=11)	>40 (n=18)	
Family history					
Present	7	17	3	16	$p = 0.00022$ $\chi^2 = 19.34$
Absent	17	30	8	2	
Past psychiatric morbidity					
Present	6	15	6	16	$p = 0.00008$ $\chi^2 = 21.59$
Absent	18	32	5	2	
Past suicide attempts					
Present	5	11	2	6	$p = 0.07518$ $\chi^2 = 2.41$
Absent	19	36	9	12	
Physical ailments					
Present	8	17	8	9	$p = 0.105$ $\chi^2 = 6.13$
Absent	16	30	3	9	
Major psychiatric illness					
Present	6	19	4	18	$p = 0.00001$ $\chi^2 = 26.28$
Absent	18	28	7	00	
Type of attempt					
Organophosphorous	13	28	4	11	$p = 0.5342$ $\chi^2 = 2.19$
Other methods*	11	19	7	7	
Intensity of suicide attempt					
Mild	10	8	1	00	$p = 0.0006$ $\chi^2 = 23.7528$
Moderate	12	26	5	6	
Severe	2	13	5	12	
Outcome					
Alive	22	44	9	15	$p = 0.48177$ $\chi^2 = 2.46$
Dead	2	3	2	3	
Life event score					
(Mean rank)	13.5	49.4	66.2	90.1	$p = 0.0000$ $\chi^2 = 74.6069$

Comparison of life event score was done using Kruskal-Wallis' one way ANOVA test.

* Other methods include drug over dosage and consumption of native poison.

Analysis of psychosocial variables in different genders showed significantly high rate of family history of psychiatric morbidity and physical ailments in females. In males, the common mode of suicide attempt was organophosphorous poisoning while in females it was drug over dose and native poisons (Table 3).

DISCUSSION

The investigation of trends in suicide attempts over the years has revealed considerable variations in age, sex and associated factors. Recent studies have reported two peaks, one in late adolescence and the other in elderly (9,10). Present study showed that this behaviour is most

Table 3 : Analysis of sex versus psychosocial variables

Variable	Male (n=65)	Female (n=35)	Significance
Family history			
Present	20	23	p = 0.0016
Absent	45	12	$\chi^2 = 9.95$
Past psychiatric morbidity			
Present	31	12	p = 0.1964
Absent	34	23	$\chi^2 = 1.67$
Past suicide attempts			
Present	15	9	p = 0.1700
Absent	50	15	$\chi^2 = 1.85$
Physical ailments			
Present	19	23	p = 0.0004
Absent	46	12	$\chi^2 = 12.43$
Major Psychiatric illness			
Present	29	18	p = 0.5150
Absent	36	17	$\chi^2 = 0.42$
Type of attempt			
Organophosphorous	43	10	p = 0.0239
Other methods*	22	15	$\chi^2 = 5.10$
Intensity of suicide attempt			
Mild	11	8	p = 0.7611
Moderate	33	16	$\chi^2 = 0.5458$
Severe	21	11	
Outcome			
Alive	60	30	p = 0.3134
Dead	5	5	
Life event score (Mean rank)	50.19	50.07	p = 0.8850 $\chi^2 = 1787.5$

Comparison of outcome is done using Fisher's Exact Probability test.

Comparison of mean life event score is done using Mann-Whitney U test.

* Other methods include drug over dosage and consumption of native poison.

frequent in younger individuals especially males. Similar findings have been reported by Western workers, where the rate for men have been found to be two or three times higher than those for women (11). Studies from India too have found males to commit suicide more often than females (4,12,13). Present study also shows that suicidal behaviour is slightly more in married though the opposite has been reported in literature. Shukla *et al* (14) have put forward several reasons for suicide being more common among the married in India. Here marriage is a social obligation and is performed by elders irrespective of the individuals preparedness for it. Further marriage is believed to be part of the treatment for mental illness and the mentally ill are more likely to get married, that too sooner than the mentally healthy. Hence there could be several adjustment problems among the married mentally ill persons in India. Divorce being socially frowned upon, suicide provides the only escape. In the West on the other hand, marriage is believed to be a measure of emotional stability and married people have lower rate of mental illness (11). Factors like poor socio-economic status, nuclear family type and unemployment which were more prevalent in this study have been repeatedly cited as significant risk factors predicting suicide (14). An interesting finding was that there was a definite difference in the clinical profile of younger and older suicide attempters. Most of the risk factors reported previously i.e., presence of physical illnesses, family and past history of illnesses like alcoholism, suicide and depression were found to be

high in elderly suicide attempters. Their intensity of suicide attempt was also serious and had significantly high stressful life events. The cumulative effect of multiple risk factors may be the reason for serious attempts in elderly people. Rich *et al* (15) have reported significant differences in the characteristics between young and old (30 years and over) suicide victims. Young suicide victims had more antisocial personality and legal problems, where as, old suicide victims had more mood disorders, brain disorders and unemployment. More work is needed in this area to substantiate our findings.

Majority of suicide attempters in the present study had a current psychiatric diagnosis. Studies from India and abroad have consistently reported a high incidence of psychiatric illness in suicide attempters with a reasonable estimate of depression accounting for 75%, alcoholism 15% and miscellaneous psychiatric conditions 8% (16,17). Adjustment disorder denotes a poor coping ability of susceptible individuals to adverse circumstances and they would adopt suicide attempt as a resort to solve the problem or to escape from the difficult situation. Generally patients with this diagnosis would consult physicians primarily and there is a tendency to over look the risk of suicide. Awareness of suicide risk in any patient presenting with physical or psychological problems should alert the clinician to get an expert opinion from a psychiatrist. Studies done in the area of Consultation-Liaison psychiatry have shown significant reduction in the number of repeated suicide

attempts in the vulnerable group with appropriate management (18). A minor proportion in our sample had physical problems. The risk of suicide has been found to be high in individuals who are physically ill. It has been reported that chronic physical illnesses such as cirrhosis, diabetes and hypertension are precipitating factors for suicide, even granting that it will be difficult to predict suicide prior to the attempt (19).

Organophosphorous poisoning was the most frequent method employed for attempting suicide in our study. This has been repeatedly confirmed by many studies reported from India (20). In fact, the problem of attempting suicide using agricultural chemicals has attracted a great deal of attention over the past decades. In Sri Lanka, a country with one of the largest suicide rate (29/1,00,000) in 1980 poisoning by agricultural chemicals were the most frequent method used (21). From a 1985 survey conducted in Jordan, 50.6% of all used agricultural chemicals, the highest total of any category (22). A recent survey reported from Japan also found consuming organophosphorous compounds was the commonest mode of attempting suicide (23). An interesting observation in this study was that among males the common mode of attempt was organophosphorous poisoning where as, in females, it was drug over dose and native poisons. Factors like feasibility, accessibility and rapidity of action could be behind the choice of the method for committing suicide. Fashions change for suicide and relative popularity of different methods have changed over

time (13). It is felt that the availability of a method is important when suicidal act is impulsive in nature. In India, agricultural workers are mainly males and have an easy accessibility to these compounds. Higher frequency of medicine over dose in females could be due to the high incidence of physical ailments in females which may lead to the easy availability of drugs. Keeping these points in mind Ganapathi and Venkoba Rao (12) and Nandi et al (20) have pleaded for restriction in the sale of organophosphorous compounds which are used as agricultural insecticides and are rather freely available.

The present findings suggest that there are considerable differences in the profile of individuals who attempted suicide. Many of the risk factors reported previously were found to be operating in older age group only. The higher occurrence of attempted suicide in younger individuals would demand more research in this area in order that prevention strategies can be worked out. The higher prevalence of psychiatric disorders in suicide attempters necessitates greater awareness of suicidal risk and early intervention as a preventive strategy. Periodic short term training on psychiatric disorders and crisis management for primary care physicians can effectively reduce this preventable health hazard. The increasing problem of organophosphorous poisoning and drug overdose demands strict legal scrutiny in the provision of these compounds which may in turn limit the availability of common means of attempting suicide.

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