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EVALUATION OF SUICIDAL RISK IN DEPRESSIVES AND SCHIZOPHRENICS : A 2-YEAR FOLLOW-UP STUDY

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A very high prevalence of psychiatric morbidity among the persons attempting or committing suicide has been observed by several investigators (Barraclough et al., 1974; Beck et al., 1990; Drake et al., 1985). In a study of attempted suicide Morgan et al. (1975) reported neurotic depression in 52%, personality disorder in 29%, functional psychosis in 12% and alcohol addiction in 10%. Silver et al. (1971) found 80% of the attempters having depressive features. Likewise, Barraclough(1974) found 93% of the suicide being mentally ill, depression accounting for 70%.

In a long term follow-up study of psychiatric patients, Winokur and Tsuang (1975) observed that 10% schizophrenics, 8.5% manics and 10%depressive had committed suicide. Dublin (1963) found an annual rate of 3.4 suicides per 1000 admitted psychiatric patients. According to Murphy (1971), depression and schizophrenia are frequently associated with suicidal behaviour.

Certain thought provoking studies on suicide have also been reported from this country (Venkoba Rao, 1965, 1971; Venkoba Rao and Chinnian, 1972; Sathyavathi, 1971; Bagadia *et al.*, 1976; Sethi et al., 1978; Gupta and Singh, 1981; Gupta *et al.*, 1983, 1987). Most of these studies suggest a high incidence of psychiatric problems in suicidal patients.

The studies reveal that psychiatric patients' risk of suicide is three to twelve times greater than that of the general population (Roy, 1986). However, the degree of risk varies according to sex, age, diagnosis, and in-or outpatient status (W.H.O., 1968; 1957a; Weissman, 1974; Shaw and Sims, 1984; Crammer, 1984; Fowler *et al.*, 1986; Hendin, 1985; Reynolds and Farberrow, 1976; Rich *et al.*, 1986).

Further, several long term follow-up studies suggest that about 10 percent of patients with history of suicide attempt eventually commit suicide (Tuckman and Youngman, 1963; Dorpat and Riplay, 1967). The studies reveal that during the first year itself of the suicidal attempt the risk of committing suicide is 1-2 percent which is almost 100 times as compared to the general population (Kreitman, 1977; Morgan *et al.*, 1975).

Negative expectation or hopelessness has been lately investigated and found to be one of the key psychological variables in the prediction of suicide. According to Beck *et al.* (1990), the critical role that hoplessness plays in suicide is the sequence of event that leads a depressed individual to commit suicide. The patient systematically misconstrues his experience in a negative way, anticipates dire outcomes for his problems and is ultimately drawn to the idea of suicide as the only way out for his "insoluble problems" (Beck, 1963; Beck and Greenberg,

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1971). Wetzel *et al.* (1980) reviewed studies addressing the relationship among depression, hopelessness, and suicidal ideation and concluded that the preponderant evidence supported the linkage of hopelessness and suicide intent. In a 10-year prospective follow- up study of 165 patients hospitalized with suicidal ideation, Beck *et al.* (1990) further substantiated the central role of hopelessness in cases of suicide.

Further in a 5-year follow-up study of NIMH, 21 to 954 depressed patients committed suicide and the salient feature of the depressive committing suicide were hopelessness and anhedonia, both indicating the severity of illness. Likewise, Dyer and Kreitman (1984) reviewed several studies in this area and concluded that while both depression and hopelessness were significantly related to suicidal intent, the relationship between depression and suicidal intent disappeared when hopelessness was controlled. It was therefore concluded that hopelessness is an important 'mising link' between depression and suicide.

Since very few studies relating to the psychosocial investigation of suicidal psychiatric patients are available in this country, the present study was undertaken with the objective of investigating suicidal risk and its relationship to personality pattern, suicidal intent and hopelessness in the two diagnostic groups, i.e. schizophrenia and depression.

AIMS OF THE STUDY

1. To find out contributory role of psychosocial and clinical variables in the suicidal patients of schizophrenia and depression.

2. To investigate the role of suicidal intent and hopelessness in the attempters.

3. To conduct a two-year follow-up of these patients and ascertain the factors associated with further suicidal attempt (i.e. repeaters versus non-repeaters)

MATERIAL AND METHOD

Sample of the present study was drawn from psychiatric O.P.D., Department of Psychiatry, K.G.'s Medical College, Lucknow. Annual attendence at the O.P.D. is nearly the thousand patients. Since two consultants of the department were involved as co-investigators in the project data collection was restricted to their O.P.D. week days. Each case was evaluated under the supervision of the concerned consultant. The sample included adult patients, both new as well as old.

INCLUSION CRITERIA

(1) Diagnostic criteria of schizophrenia and depression (DSM-III).

(2) History of suicidal attempt during the last five years.

(3) Availability of a reliable informant.

(4)Domicile of Lucknow or any one out of the six adjoining districts so that follow-up could be feasible.

TOOLS OF THE ENQUIRY

1. Case History Proforma

It includes brief account of psychiatric problems, h/o past illnesses, detailed personal

history, family adjustment and interaction and the relevant details of the suicidal attempts.

2. Premorbid Personality Assessment

Clinical personality assessment was done by the consultant according to the guidelines of DSM-III.

3. Suicidal Intent Questionnaire (Gupta *et al.*, 1983)

The questionnaire has been widely used in a number of studies conducted in the department. It consists of 10 statements in simple Hindi relating to suicidal intent. A cut off score of 5 is suggestive of presence of suicidal ideation. Higher score shows more intense suicidal preoccupation.

4. Hopelessness Scale (Beck *et al.*, 1985)

It is a self-rating scale consisting of 20 statements relating to outlook toward's one's future. Patient rates each statement as true or false. About half of the items keyed true and half false, with a total maximum score of 20. Studies reviewed earlier provide substantial evidence of the validity of the scale. A cut off score of 10 or more is reported to be reliable criteria to distinguish high risk suicidal patients.

FOLLOW-UP

Follow-up was done through home visit after a period of 24 months of the first evaluation. Attempt was made to assess the level of recovery, his/her overall adjustment and to find out whether there has been any subsequent suicidal attempt during the interim period. In addition, S.I.Q. and hopelessness Scale were also administered. All the relevant information was recorded on a structured proforma.

RESULTS

Table-1 : Frequency of suicidal attempt in two diagnostic groups

(a)	Number of schizophrenic patients screened during the period of study (8 months).	1560
	Number of cases with H/o suicidal attempt	74 (4.7%)
(b)	Number of depressives (major depression) screened during the period.	528
	Number of cases with H/o suicidal attempt	38 (7.2%)
	Number of cases presenting with H/o suicidal attempt	112
	No. of cases excluded from the study due to non-availability of informant or non-cooperative behaviour of the patient.	31
	Total number of cases in the sample	81

Table 2 shows ratio of male to female as 2:1. Analysis also reveals that there is a significant over-representation of depressives in the upper age group (31 and above). They also had relatively better educational level and economic strata ($p < 0.05$).

Table-2 : Socio-demographic characteristics of the sample

Variable	Schizophrenia (N = 56)	Depression (N = 25)
Sex		
Male	39	14
Female	37	11
$\chi^2 = 1.42$, d.f. = 1, N.S.		
Age		
upto 20	13	1
21-30	23	7
31-40	11	11
41 and above	9	6
$\chi^2 = 8.85$, d.f. = 3, $p < 0.05$		
Domicile		
Urban	30	17
Rural	26	8
$\chi^2 = 1.48$, d.f. = 1, N.S.		
Religion		
Hindu	41	16
Muslim	14	5
Sikh and Christian	1	1
$\chi^2 = 0.02$, d.f. = 1, N.S.		
Education		
Primary or less	21	5
Jr. High School	23	8
H.S./Intermediate	8	5
Graduate and above	4	7
$\chi^2 = 6.14$, d.f. = 2, $p < 0.05$		
Occupation		
Office Work	6	7
Business	3	3
Skilled/Semi-	18	2
Housewife	13	10
Unemployed	14	3
Student	2	1
$\chi^2 = 2.55$, d.f. = 2, N.S.		
Marital Status		
Married	37	17
Unmarried	16	5
Widow or Sep.	3	3
$\chi^2 = 0.66$, d.f. = 1, N.S.		
Socio-EconomicStatus		
Poor	29	11
Lower-Middle	21	11
Average	6	3
$\chi^2 = 4.81$, d.f. = 1, $p < 0.05$		

Table-3 : Method of suicidal attempt

	Schizophrenia (N=56)	Depression (N=25)
Drowning	29	11
Organophosphorous compound/drug overdose	11	7
Other method of self-injury	16	7

$\chi^2 = 0.75$, d.f. = 1, N.S.

Table-4 : Duration of suicidal attempt in the past

Duration at the time of assessment	Schizophrenia (N=56)	Depression (N=25)	Total N	%
1-6 months	27	7	34	42.0
7-12 months	10	3	13	16.1
13-24 months	13	5	18	22.2
More than 2 yrs.	6	10	16	19.7

$\chi^2 = 3.34$, d.f. = 1, N.S.

Table-5 : Period of illness and suicidal attempt

	Schizophrenia (N=56)	Depression (N=25)
Less than 1 year	22	6
1-3 years	13	3
3-5 years	4	6
More than 5 years	17	10

$\chi^2 = 1.82$, d.f. = 2, N.S.

Table-6 : Duration between onset of illness and suicidal attempt

	Schizophrenia (N=56)	Depression (N=25)
Less than 6 months	25	4
6-12 months	12	4
1-3 years	9	9
More than 3 years	10	8

$\chi^2 = 8.86$, d.f. = 3, $p < 0.05$

Table-7 : Analysis of family variables

	Schizophrenia (N=56)	Depression (N=25)	
Family H/o suicide			
Present	1	3	N.S.
Absent	55	22	
Family maladjustment			
Markedly present	30	8	
No definite evidence	26	17	N.S.
Childhood bereavement			
Present	7	3	
Absent	49	22	N.S.

Table-4 shows that more than 40% had made suicidal attempt rather recently i.e. less than 6 months at the time of their first assessment. Only twenty percent had duration of more than two years. The two groups did not differ significantly in terms of this variable.

Duration of illness was found to the more than 1 year in two-third of the studied sample (Table-5). Depressives and schizophrenics did not differ significantly in terms of duration of illness. However, a longer duration between onset of illness and suicidal attempt was observed in depressives ($p < 0.05$).

On the basis of overall information provided by the patient and informant, the extent of family maladjustment was rated as 0 (No maladjustment), 1 (Mild) and 2 (Moderate or Severe). In the above analysis mild family maladjustment was excluded. In the above table family maladjustment "markedly present" refers to the rating of 2, whereas 'no definite evidence' relates to the ratings of 0 and 1. Although two diagnostic groups did not differ significantly there is considerable evidence of disturbed family relatioship in the attempters. However, childhood bereavement and family h/o suicidal behaviour seem to be non-contributory variables.

Table-8 : Premorbid personality and related variables

	Schizophrenia (N = 56)	Depression (N = 25)	Total N	Total %
Personality pattern				
Schizoid	13	5	18	2.2
Borderline	6	3	9	11.1
Antisocial	6	-	6	7.4
Dependent, histrionic, paranoid	7	2	9	11.1
Average	24	15	39	48.2
$\chi^2 = 2.03$, d.f. = 1, N.S.				
H/o Drug abuse				
Present	16	3	19	23.5
Absent	40	22	62	76.5
$\chi^2 = 2.64$, d.f. = 1, N.S.				
Neurotic symptoms during childhood				
Present	22	11	34	42.2
Absent	33	14	47	58.0
$\chi^2 = 0.06$, d.f. = 1, N.S.				

Above table reveals personality disorder in 51.8%, neurotic symptoms during childhood in 42.0% and h/o drug dependence in 23.5% of the studied sample.

Table-9 : Scores of suicidal intent questionnaire (S.I.Q.) and hopelessness scale

	Schizophrenia (N = 56)	Depression (N = 25)
S.I.Q. Scores		
0-4	15	6
5-10	32	11
11-15	9	8
16-20	-	
$\chi^2 = 2.70$, d.f. = 2, N.S.		
Hopelessness Scores		
0-9	31	8
10-15	20	12
16-20	5	5
$\chi^2 = 3.77$, d.f. = 1, N.S.		

S.I.Q. scores was markedly high in majority of the patients which is also fairly substantiated by hpelessness scores (above cut off in more than 50% cases).

ANALYSIS OF FOLLOW-UP CASES (N = 62)

Out of 81 patients studied in the sample, a two-year follow-up through home visit could be possible in 62 (76.5%) cases. About one-fifth of the sample belonged to remote villages. A postal request was sent to all these patients but only a few responded.

Among schizophrenics, one patient committed suicide within 6 months of the initial assessment. Overall, one-sixth of the studied patients repeated their suicidal act during the period of follow-up.

Table-10 : Suicidal behaviour during the period of follow-up

	Schizophrenia (N = 41)	Depression (N = 21)
Number of completed suicide	1	-
Number of suicide attempters	6	4
Total	7 (17.1%)	4 (19.0%)

DATA ANALYSIS IN TERMS OF REPEATERS (MORE THAN ONE ATTEMPTS) AND NON-REPEATERS (ONLY ONE ATTEMPT SO FAR)

In view of the fact that certain patients in the studied sample had shown a tendency to repeat their suicidal behaviour whereas others didn't show this vulunerability, attempt has been made to analyse these two types of patients for certain relevant variables. For this purpose, all those patients who had attempted more than once whether during follow-up or earlier had been categorised as 'repeaters'. The number of repeaters in the studied sample was 26 and 36 respectively.

Table-11 : Frequency of suicidal attempts in the 'repeaters' group

No. of attempts	N
Two attempts	14
Three attempts	11
Four attempts	1
Total	26

Among repeaters there were 16 schizophrenics and 10 depressives. The observation suggest that normally 40-50 cases in both diagnostic groups tend to persist in their suicidal behaviour.

Table-12 : Interim duration between first and second attempt in the repeaters group (N = 26)

Duration	N	%
Less than 1 year	10	38.5
1-2 years	10	38.5
More than 2 years	6	23.0

The above table points out a subsequently high possibility of second suicidal attempt during the period of two years of their initial attempt. This observation is however more reliable to only those who are repeaters.

No significant difference was observed in the analysis of various socio-demographic variables, childhood bereavement, family maladjustment, drug addiction or neurotic symptoms during childhood in the two groups (i.e. repeaters versus non-repeaters).

Table-13 : Analysis of premorbid personality pattern

	Repeaters (N = 26)	Non-repeaters (N = 36)
Schizoid	9	9
Anti-social	4	-
Borderline	3	3
Dependent, histrionic	3	4
Average	7	20
$X2 = 5.03$, d.f. = 1, $p < 0.05$		

Clinical personality evaluation of the attempters was done at the time of their initial assessment (Table-8). Subsequent analysis of this variable shows that repeaters tend to have significant over-representation of various personality disorders as compared to non-repeaters (73% and 44% respectively).

Table-14 : Comparative analysis of scores of S.I.Q. and hopelessness scale

	Scores at Ist assesssment		Scores at Follow-up	
	Repeaters	Non-repeaters	Repeaters*	Non-repeaters
S.I.Q. Scores				
0-4	7	11	11	26
5-10	12	19	8	10
11-15	7	6	6	-
	$\chi^2 = 0.95$, d.f. = 1, N.S.		$\chi^2 = 4.90$, d.f. = 1, $p < 0.05$	
Hopelessness Scores				
0-9	7	26	12	28
10-15	14	9	7	8
16-20	5	1	6	-
	$\chi^2 = 12.44$, d.f. = 1, $p < 0.01$		$\chi^2 = 5.79$, d.f. = 1, $p < 0.05$	

Correlation coefficient between SIQ and Hopelessness Scores at 1st assessment : $r = 0.65$, $p < 0.01$

Correlation coefficient between SIQ and Hopelessness Scores at follow-up assessment : $r = 0.78$, $p < 0.01$

* Follow-up data relates to 25 patients as one committed suicide during interim period.

Table-14 reveals that while SIQ scores were significantly different in the two groups only at the time of follow-up assessment, scores of hopelessness scale significantly distinguished the two groups of initial as well as follow-up assessment (repeaters having higher scores as compared to the non-repeaters). Significant correlation coefficient further substantiates level of consistency in the scores of these two questionnaires.

DISCUSSION

Several improtant findings relating to the contributory role of psychological variables underline the need to investigate the intricate phenomena of suicidal behaviour. Inspite of limitation of small sample size, certain observations merit special attention such as higher frequency of suicidal attempt in case of major depression as compared to schizophrenia (7.2% and 4.7% respectively), personality disorder being present in nearly half of the attempters, substantial possibility of suicidal behaviour during the period of two years of their first attempt, and discriminative value of the scores of S.I.Q. and hopelessness scale in cases of suicidal attempt.

Although about 40% patients of the present study had made suicidal attempt more than a year ago, substantial evidence of suicidal ideation was obseved in three-fourth of the evaluated patients. S.I.Q. scores as well as hopelessness scores provide meaningful supporting data. The observation is further corraborated by the fact that out of 62 follow-up cases 10 had made another suicidal attempt during the period of follow-up and one committed suicide. Perhaps, a greater frequency of self-injurous behaviour may be evident if the sample is followed-up for a longer period.

There are several studies in the literature which tend to substantiate some of these obsevations. Beck and his associates (1985) conducted a follow-up study of 207 patients hospitalised because of suicidal ideation. Out of these, 14 patients committed suicide during the period of follow-up (5-10 years). Of a remarkable significance is the fact that a higher score (i.e. above cut off) on hopelesssness scale correctly identified 91% of the eventual suicides. The study demonstrate predictive value of the scores of this instrument. It also suggests that if we could focus on reducing a patient's hopelessness, we might be able to alleviate suicidal crisis in a large number of cases, especially in depressives. Furthermore, the patient's feeling of hopelessness is often related to certain environmental stresses, early psychological intervention and long-term psychotherapy may be highly effecctive. Psychotherapeutic observations of a large number of depressed suicidal patients (Beck, 1963) indicates that depressed patients often conceptualise their situation as untenable and tend to have a sticky idea of suicide being the only solution for their desperate situation. After intensive psychotherapy majority of these

patients are able to regard their hopelessness as cognitive distortion derived from their unrealistic premises or faulty pattern of interpreting the life situations.

According to Beck *et al.* (1990), hopelessness closely associated with severity of depression. However, some individuals seem to be chronically hopeless regardless of their beief depressed or not. These are the individuals who are more susceptible to suicidal behaviour. In these cases hopelessness may be a negative belief incorporating negative expectancies. The observation that some people might think of killing themselves because they have no hope that things would ever improve is strikingly pragmatic. Hopelessness should therefore be taken as important target symptom in the treatment of suicide attempters and as evidence from several studies cognitive therapy is reported to be remarkably effective in suicidal patients.

Comparative analysis of repeaters and non-repeaters in the present study also provides certain important observations. Personality disorder is found to be significantly associated with repeated suicidal attempt. Further, risk of suicidal act is greater during the first two years of the initial attempt. According to Morgan *et al.* (1976), rates of repeat attempt vary between 15 to 20 percent during the first year. Studies suggests that the repeaters are mainly of three type : (1) some patients repeat only once, (2) some repeat several times but only during a limited period of continuing problem, and (3) a very small number of patients who repeat quite frequently over a long period as a habitual response to stressful situation or events (Fyer *et al.*, 1988; Morgan *et al.*, 1979).

Another important observation of the present study relates to the presence of personality disorder in more than 50% patients. Inspite of limitation of clinical assessment of the premorbid personality the enquiry into this area was done by two experienced psychiatrists keeping in a view the diagnostic criteria of DSM-III. There are several other studies suggesting a high frequency of personality disorders in suicidal patients (Kreitman and Dyer; 1980; Morgan *et al.*, 1976). Among the personality disorders, schizoid, borderline and antisocial were more frequent. In this context it would also be important to analyse the psychosocial problem of the patients who indulge in deliberate self-harm in absence of any serious suicidal intent. It has been observed that these patient can be divided into two groups : (1) psychotic patients in which the episode of self injury is usually singular and often prompted by impulsivity or delusional thinking; (2) patients of severe personality disorder who repeatedly injure themselves often employing less lethal methods. In the latter self-injury is perhaps a method to relieve emotional pain by inflicting physical injury (Konicki and Schulz, 1989). Similarly, Morgan *et al.* (1976) in a comparative clinical analysis of repeaters (N = 56) and non-repeaters (N = 159) identified significant differentiating factors in the two groups, previous psychiatric treatment, h/o deliberate self-harm, criminal record, personality disorder, drug dependence and serious drink problems.

Certain reports also suggest the attempters with personality disorders reveal an episode of self-injury often preceded by a period of mounting psychic tension. Konicki and Schulz, (1989) view them as effectively liable, unstable, impulsive and also to some ex-

tent insensitive to pain. The overall clinical picture is akin to borderline personality disorder. Follow-up study of cases of borderline personality disorder point out that the rate of suicide appears to increase with length of follow-up: 4% during the first three years, 7.5% at 4-7 years, and 10% at 10-15 years (Stone *et al.*, 1987).

As regards contributory role of psychiatric illness in suicidal behaviour there are a number of observations in the present study as well as various other studies reviewed earlier which support the hypothesis that psychological abnormalities whether in association with personality problems or otherwise play a decisive role. The variation in the findings of various investigators seem to be largely resulting from nature and selection procedure of the sample or the method of enquiry. In the present study screening of nearly two thousand psychiatric patients attending psychiatric out- patient of a general hospital had shown that 7.2% depressives and 4.7% schizophrenics have a history of suicidal attempters. According to Roy (1989), about 95 percent of patients who commit or attempt suicide have a previous history of or are currently suffering from psychiatric illness. It is further, reported that depressive disorders account for three-fourth of the suicidal patients while schizophrenia accounts for 10-15% cases. Nearly one-fourth of the patients presenting with impulsive or violent act are reported to be at high risk of committing suicide.

According to Morgan (1980), suicide or deliberate self-harm involves a complex and heterogenous aetiology encompassing a wide range of motivation rating from deliberate and conscious manipulative behaviour at one extreme to psychotic depressive dispair at the other end. There is nothing denying fact that in certain cases suicidal attempt is strinkingly a manipulative behaviour, although very few patients may admit such kind of a motive. Stengel (1952) was the first to emphasise the ' appeal effect' of suicide attempt. These patients think that recourse to such kind of behaviour would be an effective alarm signal to mobilise help or signify distress to the key individuals. A substantial percentage of patients in the present study appear to belong to this category especially among the repeaters.

As regards the role of various socio-demographic variables, there is considerable variation in the findings of various investigators. Variations in the observation may also be to some extent on account of relatively small number of patients in most of the studies. However, it has been observed in the present study as well as in the several other reports from this country that the vast majority of attempters are in the range of 15-35 (Gupta and Singh, 1981; Ponnudurai *et al.*, 1986). The finding is less in conformity with the western reports which greatly emphasise the contributory role in mid-life crises in such suicide cases. In United States, for example, suicide continues to rise after the age of 40. The differences in the rate may be largely due to socio-cultural norms and values of overall social cohesiveness. This impression is furthe substantiated by the fact that the elderly constitute only 10% of the total U.S. population whereas they account for one-fourth of the total suicides. Recent reports from the western countries also show a consistently rising trend of suicide in younger age group, suicide being

the 3rd leading cause of death in the 15-24 years age group (W.H.O., 1975b).

In view of the observation that risk of suicide is 1-2 percent in suicide attempters during the first year afterward and the long term suicide risk may be in as many as 10% patients (Kreitman, 1977; Dorpat and Ripley, 1967), comprehensive assessment as well as effective management of these patients is a matter of crucial significance. In addition to the utilization of services of a psychiatrist, counselling and psychothereprutic help of an experienced clinical psychologist should be greatly effective in the management of suicidal patients. Professional help of psychiatric social worker should also be taken for long-term management. It is rather distressing to observe that majority of the attempters fail to receive proper psychological help in our country on account of limited psychiatric facilities and lack of psychological awareness into the etiology of suicidal behaviour or due to the medico-legal apprehensions associated with such cases. That is why, secondary prevention of suicide has yet to make a start in this country.

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