ORIGINAL ARTICLE

STUDY OF SUICIDALITY AND SUICIDE BEHAVIOR AMONG INDIVIDUALS WITH LONG-STANDING DURATION OF SCHIZOPHRENIA IN INDIA: AN EXPLORATIVE STUDY

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Abstract

Objective: **Suicide is a common occurrence in schizophrenia and is seen in all phases of the illness. Early identification of patients who are more likely to attempt suicide may help in suicide prevention among patients with schizophrenia. The present study was aimed at determining the clinical differences and differences in demographic and risk factors in patients with schizophrenia that attempt suicide and those that do not.** ***Methods:*** **A total of 200 consecutive follow-up patients having schizophrenia were assessed clinically for variables related to suicide and suicidal behaviour in the outpatient department of a tertiary psychiatry centre. All patients were administered the Positive and Negative Symptom Scale (PANSS) for schizophrenia to assess clinical symptoms and severity while the Clinical Global Impression – Severity (CGI-S) scale was also used.** ***Results:*** **Out of the 200 patients studied, 38% (n = 76) patients had made one severe suicide attempt by excluding parasuicide or deliberate self-harm at least once, and 9.5% (n = 19) had attempted suicide more than three times. More patients with a suicide attempt showed good clinical outcome (CGI ≥ 3) (42.1% versus 33.0%, $\chi^2 = 1.040$, p = 0.301). The patients who attempted suicide were predominantly male, with a mean age of 34.2 years. Lesser number of them was single (32.89% vs. 43.5%, $\chi^2 = 1.814$, p = 0.178). Their duration of illness was shorter (9.6 years versus 11.4 years, t = 2.8841, p = 0.0043) and more patients with attempted suicide had higher scores on negative symptoms scales of PANSS (t=2.1122, p = 0.035) at the time of assessment.** ***Conclusions:*** **The findings in our research warrant the need studying suicide in schizophrenia in larger samples and to replicate our findings and also determine methods to reduce the incidence of suicide in schizophrenia via interventional programmes.** ***ASEAN Journal of Psychiatry, Vol. 17 (2): July – December 2016: XX XX.***

Keywords: Schizophrenia, Suicide, Suicide Attempt, Suicidal Behaviour, PANSS

Introduction

Suicide is a common problem seen among individuals with schizophrenia and occurs across all phases of the illness [1]. About 5-6% patients of schizophrenia die to due to suicide in his or her life time and more than half of them attempt suicide at least once during illness [2]. Indian studies reveal that about 35% patients of schizophrenia attempt suicide in a community sample [3]. Suicide in schizophrenia occurs across all ages and during all phases of the illness. About 3-5% suicides take place in the ultra-high risk phase, 8-11% in prodromal phase, 20-25 % in early phases, 25% during remitting and relapsing

phase and another 20-25% during the chronic residual phase [4]. High rate of suicide in schizophrenia is reportedly shifting towards the early phase of the illness from the chronic phase [5].

In a majority of first episode schizophrenia patients, suicide behaviour is the symptom for first contact with mental health services [6]. Early intervention programs for psychosis are the entry point for suicide prevention and initiatives of identification of suicide leads to earliest possible treatment for psychosis [7]. Interface of suicide behaviour and schizophrenia is complex, particularly due to high rates of comorbidity of substance abuse, mood disorder and personality disorder, pharmacotherapy, lengthy duration of hospital stay, multiple hospitalisations and treatment resistance [8]. Suicide in schizophrenia leads to poor clinical, functional and health-related outcomes [9]. High rates of stigma due to suicide and schizophrenia both lead to high rates of non-compliance, delay in accessing care and thereby increasing vulnerability of repeated suicide [10]. Suicidal ideations persist and about a quarter of the recovered patients also show significant suicidal ideation, which increases vulnerability for suicide [11]. High rates of suicidal ideation and attempts demand review for identification, short-term and long-term management. Development of suitable care plans for both the acute and maintenance phase of illness, be it in psychiatric hospitals or in communities [12].

Despite significant advancement in research regarding suicide in patients with schizophrenia, the incidence of suicide continues to increase [13]. There is an urgent need to explore the causes for high vulnerability of patients with schizophrenia for suicide. Suicide is a socio-cultural problem and therefore, clinical context of identification and management ought to be culturally determined though it remains undetermined where the risk for schizophrenia originates from nature of the illness, nature of treatment or psychosocial conditions [14]. We believe that assessment of suicide in schizophrenia is as important as that of positive, negative or cognitive symptoms and in fact, suicidal behaviour is a specific symptom domain of schizophrenia. It possibly determines psychopathology as well as course and outcome of the illness [15].

Among several methods to investigate suicide, retrospective data analysis is an important one. Data collected from research studies can provide valuable information because semi-structured or structured data collected for studies may have better organised clinically about phenomenology and psychopathology details [16]. In this study, we determine the pattern of suicidal behaviour in schizophrenia and the psychopathological and phenomenological risk factors among schizophrenic patients with history of attempted suicide.

Methods

The study was carried out a in a tertiary psychiatric hospital in Mumbai, India. The sample consisted of the first 200 patients with schizophrenia that met our inclusion and exclusion criteria and were attending the outpatient department. The study was conducted over a period of 6 months. The study was a retrospective chart review of suicidal behaviour in these patients along with certain other parameters assessed via a clinical interview. Inclusion criteria were the presence of information about suicidal behaviour (attempt or ideation) either via the patient or caregiver, a confirmed diagnosis of schizophrenia that met DSM-IVTR criteria [15]. Exclusion criteria were data with incomplete information as per current criteria. Chronic state of schizophrenia was considered as duration of treatment of minimum 5 years. Criteria for defining suicidal behaviour were only occasional ideas or no ideas of suicidality; persistent suicidal ideation with plans and presence of a suicide attempts in previous 6 months. Outcome criteria (primary and secondary) were the difference between percentages of patients who had attempted suicide in comparison to those who did not on clinical, psychopathological and phenomenological features. Secondary outcome criteria were the percentage of patients having suicidal ideation or history of attempted suicide within 2 years on outcome parameters in the cohort of schizophrenia. We included outcome parameters of observations

by Positive and Negative Symptom Scale (PANSS) [17] score and Clinical Global Impression – Severity (CGI-S) scale scores and Global Assessment of Functioning (GAF) [15, 18]. Data was statistically analysed using descriptive and parametric statistics where appropriate.

The study was carried out in the year 2002 to 2003. The non-Governmental hospital where the study was carried out had a panel of experts headed by a former Professor of Seth G S medical college and KEM hospital, Mumbai, which functioned as an institutional review board or ethics committee. This panel had scrutinised and discussed the study and approved it, which functioned as an ethics board during that time.

Results

Sample characteristics

We studied 200 subjects, diagnosed with schizophrenia. In this group 38% (n = 76) patients had made one severe suicide attempt (excluding parasuicide or deliberate self-harm) at least once and 9.5% (n = 19) had attempted suicide more than three times. 59.5% (n = 119) of the original cohort was male with a mean age of 34.2 yearsand70.5% (n = 141) were married. The mean duration of illness was 10.5 years and the commonest diagnosis was paranoid schizophrenia seen in 29.5% cases (n = 59). Detailed sample characteristics are given in Table 1.

Table 1. Socio-demographic profile of the patients with schizophrenia

Characteristics		
General Demographic Data		
Age (years)	36.5 (2.1)	Mean (SD)
Male	119 (59.5)	N (%)
Single/ Unmarried/ Separated	59 (29.5)	
Married	141 (70.5)	
Having Children	86 (43)	
Duration of Treatment	7.2 (2.5)	Mean (SD)
Duration of Illness	10.5 (3.2)	Mean (SD)
Age of Onset (years)	22.5 (19.2)	Mean (SD)
Family history of Severe mental Disorder	37 (19.5)	N (%)
Family history of suicide attempt	17 (8.5)	
Diagnosis		
Disorganized Schizophrenia	35 (17.5)	N (%)
Paranoid Schizophrenia	59 (29.5)	
Schizoaffective Disorder	43 (21.5)	
Undifferentiated Schizophrenia	34 (17)	
Residual Schizophrenia	26 (13)	
Suicidal Behavior		
Suicidal ideation	70 (39.5)	N (%)
Ideation with plans	43 (21.5)	
One Attempt	76 (38)	
Multiple Attempts	19 (9.5)	
Reason for admission		
Extrapyramidal Symptoms	10 (5)	N (%)
After Suicide attempt	55 (27.5)	
Suicidal crisis	84 (42)	
Violence and Abnormal behavior	36 (18)	
Alcohol Use	81 (40.5)	
Previous Hospitalizations		
One	79 (36.5)	

Two	61 (30.5)	N (%)
Three	44 (22)	
Education / Occupation		
Grade 12/College	12 (6)	N (%)
Semi-skilled	40 (20)	
University	39 (19.5)	
Semi-professional	29 (14.5)	
Professional	29 (14.5)	
Psychopathology		
Positive Symptoms Score>7	62 (31)	N (%)
Negative Symptoms Score >7	73 (36.5)	N (%)
Mean PANSS Total	56.8 (7.8)	Mean (SD)
Mean Positive symptom score	13.7 (2.3)	Mean (SD)
Mean Negative symptom score	13.9 (4.4)	Mean (SD)
Current-Depression/ Depressed mood	25 (12.5)	N (%)
Hallucinations present and active	42 (21)	
Alcoholism	92 (46)	
Family problems	94 (47)	
Outcome Measures		
CGI-S >2	73 (36.5)	N (%)
Independent living	48 (24)	
Employed	42 (21)	
GAF ≤80	163 (81.5)	

Severe suicide attempt for the study was defined as those suicide attempts which were potentially lethal and needed intensive unit care [19]. Deliberate self-harm or parasuicide was any intentional injuring of one's body without apparent suicidal intent [20].

Attempted suicide

In this study on patients with schizophrenia, 38% (n = 76) had attempted a serious suicide attempt at least once and 39.5% (n = 70) reported suicidal ideation while 21.5% (n = 43) reported suicidal ideations with a plan. More patients with suicide attempt had shown good clinical outcome (42.1% versus 33.0%, p < 0.001).The patients who attempted suicide were predominantly male, with a mean age of 34.2 years. Lesser number of them were single (32.89% vs. 43.5%), and majority of them had semi-professional and skilled qualifications (38.1% versus 10.4%, $\chi^2 = 12.238$, p=0.0005). Their duration of illness was shorter (9.6 years versus 11.4 years, t = 2.8841, p = 0.0043) and more patients with attempted suicide had persistent positive (39.4% versus 25.85%) and negative symptoms (44.7% versus 31.4%)at the time of assessment. Patients who did not attempt suicide had more subjects diagnosed with disorganised schizophrenia while other subgroups were seen in almost equal numbers (Table 2). These values in many cases as seen in table though not statistically significant were clinically relevant.

Table 2. Comparison between suicide attempters and non-attempters

Variable	Suicide attempt (n=76)	No Suicide attempt (n= 124)		p-value
Mean Age (years)	34.2 (6.9)	32.8 (7.1)	t = 1.3680	0.1729 NS
Single/unmarried/ separated	25 (32.89%)	54 (43.5%)	$\chi^2 = 1.814$	0.1780 NS
Married	34 (44.7%)	70 (56.45%)	$\chi^2 = 2.143$	0.1433 NS
Male	43(56.0%)	76 (60.8%)	$\chi^2 = 0.261$	0.6097 NS

Female	33 (44%)	58 (39.2%)	$\chi^2 = 0.1$	0.7520 NS
Duration of illness	9.6 ± 3.9 years	11.4 ± 4.5 years	t = 2.8841	0.0043*
Duration of Treatment (years)	7.6 ± 8.1 years	6.8± 8.6 years	t = 0.6527	0.5147 NS
	Diagnosis			
Disorganized	09(11.8%)	24 (19.3%)	$\chi^2 = 1.312$	0.6755 NS
Paranoid	22 (28.9%)	37 (29.8%)	$\chi^2 = 0.018$	0.8933 NS
Schizoaffective	15 (22.5%)	28 (22.5%)	$\chi^2 = 0.089$	0.7658 NS
Undifferentiated	12 (15.78%)	22 (17.7%)	$\chi^2 = 0.013$	0.9097 NS
Residual	12 (15.7%)	14 (11.2%)	$\chi^2 = 0.555$	0.4563 NS
	Other Parameters			
Age of Onset (Years)	20.2 (7.3)	24..9 (7.2)	t= 3.9769	0.0001*
Family History SMI	16 (21.0%)	21 (16.9%)	$\chi^2 = 0.292$	0.5890 NS
Suicidal ideation	41 (67.1%)	29(22.5 %)	$\chi^2 = 18.687$	0.0001*
Ideation with plans present	11 (14.4.0%)	32 (25.8%)	$\chi^2 = 2.755$	0.0096 NS
One Attempt	76 (100.0%)	-		
Multiple Attempts	19 (25.0%)	-		
EPS	8 (13.1%)	2		
Abnormal Behavior and Violence	23(30.2%)	13 (10.48%)	χ^2= 11.185	0.0008*
Suicidal crisis	24 (31.57%)	30 (24.1%)	$\chi^2 = 0.956$	0.3256 NS
Alcohol	31 (40.7%)	50 (40.3%)	$\chi^2 = 1.148$	0.2839 NS
Independent living	21 (27.6%)	27 (21.7%)	$\chi^2 = 0.823$	0.3644 NS
Employed	19 (25%)	23 (18.5%)	$\chi^2 = 0.826$	0.3636 NS
	Educational Levels			
Grade 12/College	3 (3.9%)	9 (7.2%)	$\chi^2 = 0.423$	0.5155 NS
Semi-skilled	20 (26.3%)	9(7.2%)	$\chi^2 = 12.310$	0.0005*
University	21 (26.5%)	18(14.5%)	$\chi^2 = 4.362$	0.0362*
Semi Professionals	25 (38.1%)	14 (11.2%)	$\chi^2 = 12.668$	0.0004*
Professional	20 (26.3)	9 (7.2%)	$\chi^2 = 12.310$	0.0005*

	PANSS Scores			
Positive Sympt > 7	30 (39.4%)	32 (25.8%)	$\chi^2 = 3.501$	0.0613 NS
Negative Sympt >7	34 (44.7%)	39 (31.4%)	$\chi^2 = 3.038$	0.0813 NS
PANSS Total	54.7 ± 19.8	49.5 ± 18.4	t= 1.8844	0.0610 NS
NS- mean	12.7 ± 6.7	15.1 ± 8.4	t= 2.1122	0.0359*
PS- mean	13.4 ± 4.9	14.0 ± 6.3	t=0.7089	0.4792 NS
CGIS >3	32 (42.1%)	41 (33.06%)	$\chi^2 = 1.040$	0.3078 NS
GAF ≤80	62 (81.57%)	101 (81.45%)	$\chi^2 = 0.001$	0.9820 NS
Current Depression / Depressed mood	22 (28.9%)	3 (2.41%)	$\chi^2 = 27.941$	0.0001*
Hallucination	19 (25.0%)	23.0 (18.54%)	$\chi^2 = 0.825$	0.3636 NS
Alcoholism	43(56.5%)	49 (39.5%)	$\chi^2 = 4.857$	0.0275*
Family history attempt of suicide	6 (7.89%)	11 (8.87%)	$\chi^2 = 0.058$	0.8101 NS
Past history of suicide	29 (38.1%)	19 (15.3%)	$\chi^2 = 12.248$	0.0005*
Having Children	28 (36.84%)	58 (46.77%)	$\chi^2 = 1.513$	0.2187 NS
Family problems	39 (51.31%)	55 (44.35%)	$\chi^2 = 0.658$	0.4171 NS

The patients who had attempted suicide did not significantly differ from those who did not attempt suicide on a number of important riskfactorse.g.independent living, employment, level of function, hallucinations, presence of depression comorbid alcoholism, age of onset of schizophrenia and family history of mental illness as well family history of suicide (Table 2).

Discussion

The main findings from the study show that a significant number of patients suffering from schizophrenia attempted suicide and also had suicidal ideation. It was also observed that those who attempt suicide differed significantly from non-attempters on a number of risk factors and psychopathology. In our study, 38% patients who attempted suicide at a mean age of 34 years and duration of illness of 9.6 years are not unusual. This is in keeping with other studies [21]. Patients in the study had a mean age of onset of illness at 22.5 years and progressed to severity within nine-year period and were at a mid-point during their illness. They were neither very chronic nor in an early phase. These patients were under treatment for more than 5 to 6 years. Suicide is generally higher among patients with history of hospitalisation and previous attempt [22]. Typically, patients of attempting suicide are male, in the age range of 35-45 years, with early onset of illness, single, with relatively higher-education [23].

Mostly, suicide attempts are associated with florid psychosis, more positive symptoms, awareness and insight into the illness, depression and hopelessness [11]. In consonance with such findings, our study shows that patients had severe psychopathology and similar scores for both positive and negative symptoms. In this study, we have examined patients with chronic schizophrenia, who had a history of suicide attempts. Age and gender distribution was almost the same as reported in other samples of attempted suicide [13]. There was no significant difference between the mean age

and gender of patients having a diagnosis of schizophrenia and overall population of attempted suicide. Studies suggest that maximum number of patients attempting suicide in schizophrenia have an age range of 35-45 years [8]. In our study, we find that mean age of all patients was 36.5 years. Thus we did not find any significant difference between age and gender of suicide in schizophrenia in comparison to an overall group of patients. Age and gender are a specific risk factor in patients who attempt suicide. More patients attempting suicide are male in reported literature [3]. We found that 59% patients who attempted suicide were male in our study. Relationship of age and gender amongst patients of schizophrenia who attempt suicide is not clearly known. Some of the reasons cited for the same are severity of psychopathology, poor response to treatment, and presence of positive/negative and depressive symptoms at the time of suicide attempts. There is no specific cause, which has been cited as to why suicide in schizophrenia is more common in middle age [24].

Among patients with schizophrenia in our study, fewer patients who attempted suicide were married. Duration of illness was less in those with a suicide attempt. Illness severity as measured by CGI was greater in those with a suicide attempt. There is a clear correlation between the duration of illness and suicide attempt in schizophrenia. Early course of schizophrenia has more florid symptoms, more chances of relapses, greater depressive symptoms and insight changes [5-6]. There is also a chance of lower compliance with medication, inability to cope and accept the illness and poor social support leading to suicide [12]. Clinically the two groups did not differ on total PANSS scores, and this indicates that symptom wise though the suicide group had more persistent symptoms, they did not differ clinically in severity. Suicide may have thus occurred due to a multiplicity of other factors as pointed out in the discussion earlier.

The limitations of the current study are that it is from a small sample in Mumbai, and the results cannot be generalized to samples all over the world or India. We have also not performed a regression analysis of factors that were relevant in Table 2. Suicide is a common occurrence in patients with schizophrenia. It is very essential that suicide profiles in patients with schizophrenia be studied from a clinical perspective to understand this problem better. A large number of factors are intertwined and involved in the causation of suicide. Further longitudinal studies among patients who attempt suicide in schizophrenia shall pave the way toward better understanding of suicide as a separate symptom domain in schizophrenia.

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