

Evaluation of Suicide Risk in Chronic Schizophrenic Hospitalized Patients

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Abstract

Schizophrenic patients have a high risk for suicide. Research indicates that suicide is the cause of death in 5–13% of schizophrenic patients. Many factors are known to be involved in the suicidal process, some of which are different from those in the general population. The aim of the study was to evaluate the suicidal intent in schizophrenic hospitalized patients. In this descriptive cross sectional study, the numbers of patients who participated and continued all the psychometrics were 94 patients, 58 males and 36 females. Psychiatric sheet of General Secretariat of Mental Health, Structured interview using Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM V) and Arabic version of Beck Scale for Suicide Ideation (BSS) were done for all patients. According to BBS, 44.7% of the studied patients had no suicide ideation, 34.0% had passive suicide ideation, 11.7% had active suicide ideation and 9.6% had both passive and active suicidal ideation at the time of study. It was concluded that suicidal risk is high among schizophrenic patients. Marital status, onset and duration of schizophrenia, history of undergoing ECT, depressed mood and sense of hopelessness were found to have a strong association with suicide ideation.

Keywords: Schizophrenia, Suicide, Hospitalization, Risk evaluation

1. Introduction

Suicide can be defined as a fatal act of self-harm initiated with the intention of ending one's own life. Despite of often seen as impulsive, it may be associated with long period of suicidal behavior including suicidal ideation or self-harm behavior [1].

About 800 000 people every year take their own life and there are many more people who attempt suicide. Every suicide is a disaster which affects families, communities and entire countries and has long-lasting effects on the people left behind. Suicide may occur anytime during lifespan and it was found to be the second leading cause of death among 15–29-year-olds globally in 2015 [2].

Every year, about 0.5% to 1.4% of people die by suicide, about 12 per 100,000 persons [3].

Views on suicide have been affected by many existential issues like religion, honor, and the meaning of life [4].

Various factors affect the suicide risk include mental disorders, drug misuse, psychological states, cultural, family and social circumstances, and genetics [5].

Schizophrenia is a chronic and severe mental disorder that affects how an individual thinks, feels, and behaves. Patients with schizophrenia seem like they have lost touch with the real world [6].

Schizophrenia nearly affects 1% of the population worldwide during a lifetime. The onset of the disorder occurs relatively early in life, often in the later teens or early adulthood, and most cases have long-lasting unpleasant effects. Schizophrenia is a clinical syndrome diagnosed on the basis of symptom profiles, and is characterized by a group of symptoms of psychosis, such as abnormalities in the perception or expression of reality, as well as negative symptoms, such as flat affect and avolition. Deficits in cognition are also present in most of cases, and symptoms must have persisted for at

least 6 consecutive months, however schizophrenia cannot be diagnosed if symptoms are better explained by an organic cause or drug abuse [7].

There is no one specific factor identified by research; it is thought that an interaction between genes and environmental factors may be the cause of schizophrenia. Schizophrenic patients are 2-2.5 times more likely to die early than the general population [8].

Suicide risk is relatively higher in schizophrenia in comparison to general population especially in younger age groups. It was reported that a reduction in the suicide rate among schizophrenic patients occurs over time similar to that in the general population, although a recent meta-analysis suggests that the mortality gap between the general population and patients with schizophrenia has increased in the last few decades [9].

Risk factors with a robust association with later suicide included being young, male, and with a high level of education. Illness-related risk factors were important predictors, with number of prior suicide attempts, depressive symptoms, active hallucinations and delusions, and therefore the presence of insight all having a robust evidential basis. A case history of suicide, and comorbid substance misuse were also positively related to later suicide. The only consistent protective factor for suicide was delivery of and adherence to effective treatment. Prevention of suicide in schizophrenia will believe identifying those individuals in danger, and treating comorbid depression and substance misuse, also as providing best available treatment for psychotic symptoms [10].

2. Materials and methods

The present study is a descriptive cross sectional study, which is carried out in the inpatient adult psychiatric wards of Al-Maamoura Mental Health Hospital in Alexandria, Egypt. The present study took

place from the beginning of March till the end of August 2018. The number of patients who participated in the research and completed all the psychometrics were 94 patients, patients of both sex were included with ages between 18 and 60 years old, without systemic disease or comorbid mental disorder and patients with average intelligence detected clinically.

All cases were subjected to the psychiatric sheet of General Secretariat of Mental Health, Fifth Edition (DSM V) criteria for diagnosis of schizophrenia and SCID I, a general physical and neurological examination and mental state examination. The Arabic version of Beck Scale for Suicide Ideation (BSS) [11] which contains 21 statements each assessing various

aspects of suicidal ideation was also performed. In the BSS subjects were divided into patients with no suicidal ideation, with passive ideation, with active ideation and with both active and passive suicidal ideation.

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Qualitative data were described using number and percent. Quantitative data were described using range (minimum and maximum), mean, standard deviation and median. Significance of the obtained results was judged at the 5% level.

3. Results

Table (1) Socio-demographic data of the studied schizophrenic patients (n = 113).

	No	%
Sex		
Male	58	61.7
Female	36	38.3
Age (Years)		
<30	40	42.6
30-50	48	51.1
>50	6	6.4
Occupation		
Handicraft	8	8.5
Unemployed	62	66.0
Student	6	6.4
Miscellaneous	11	11.7
Clerk	7	7.4
Smoking		
Non smoker	35	37.2
Smoker	59	62.8
Residence		
Urban	50	53.2
Rural	44	46.8
Education		
Illiterate	22	23.4
Primary	22	23.4
Preparatory	17	18.1
Secondary	21	22.3
University	12	12.8

Table (2) Beck scale for suicide ideation (BSS) in the studied schizophrenic patients (n = 94).

Suicide ideation		
No ideas	42	44.7
Passive	32	34.0
Active	11	11.7
Active and passive	9	9.6

Table (3) Relation between BSS and socio-demographic data of the studied schizophrenic patients (n= 94).

	BSS								χ^2	MC p
	No idea		Passive (n = 32)		Active (n = 11)		Both (n = 9)			
	No.	%	No.	%	No.	%	No.	%		
Sex										
Male	26	61.9	20	62.5	7	63.6	5	55.6	0.312	0.977
Female	16	38.1	12	37.5	4	36.4	4	44.4		
Age										
Less than 30	18	42.9	10	31.3	7	63.6	5	55.6	5.216	0.484
30-50	22	52.4	18	56.3	4	36.4	4	44.4		
More than 50	2	4.8	4	12.5	0	0.0	0	0.0		
Marital status										
Single	20	47.6	21	56.6	7	63.6	6	66.7	15.911*	0.029*
Married	19	45.2	6	18.8	3	27.3	0	0.0		
Divorced	2	4.8	5	15.6	1	9.1	2	22.2		
Widow	1	2.4	0	0.0	0	0.0	1	11.1		
Occupation										
Handicraft	7	16.7	1	3.1	0	0.0	0	0.0	15.275	0.115
Unemployed	20	47.6	25	78.1	10	90.9	7	77.8		
Student	2	4.8	2	6.3	1	9.1	1	11.1		
Miscellaneous	8	19.0	3	9.4	0	0.0	0	0.0		
Paper workout	5	11.9	1	3.1	0	0.0	1	11.1		
Residence										
Urban	23	54.8	14	43.855	7	63.6	6	66.7	2.282	0.502
Rural	19	45.2	18	6.3	4	36.4	3	33.3		
Education										
Illiterate	8	19.0	7	21.9	3	27.3	4	44.4	8.726	0.734
Primary	8	19.0	8	25.0	3	27.3	3	33.3		
Preparatory	9	21.4	6	18.8	2	18.2	0	0.0		
Secondary	11	26.2	8	25.0	2	18.2	0	0.0		
University	6	14.3	3	9.4	1	9.1	2	22.2		

 χ^2 : Chi square test

McC: Monte Carlo

p: p value for association between beck scale and different parameters

*: Statistically significant at $p \leq 0.05$ **Table (4)** Relation between BSS and clinical data of schizophrenia in the studied patients (n= 94).

	BSS								χ^2	MC p
	No idea (n = 42)		Passive (n = 32)		Active (n = 11)		Both (n = 9)			
	No.	%	No.	%	No.	%	No.	%		
Onset										
Chronic	42	100.0	31	96.9	11	100.0	7	77.8	7.176*	0.017*
First episode	0	0.0	1	3.1	0	0.0	2	22.2		
Duration (years)										
Less than 1	0	0.0	1	3.1	0	0.0	2	22.2	13.573*	0.015*
1 to 10	26	61.9	15	46.9	10	90.9	5	55.6		
More than 10	16	38.1	16	50.0	1	9.1	2	22.2		
Duration of admission (Months)										
Less than 1	22	52.4	9	28.1	4	36.4	5	55.6	6.446	0.344

Table (4) Continue

1-3	17	40.5	19	59.4	5	45.5	3	33.3		
More than 3	3	7.1	4	12.5	2	18.2	1	11.1		
No. of admissions										
Once	9	21.4	6	18.8	2	18.2	3	33.3	8.843	0.163
2-4	20	47.6	13	40.6	9	81.8	4	44.4		
More than 4	13	31.0	13	40.6	0	0.0	2	22.2		
Family history										
No	33	78.6	19	59.4	6	54.5	6	66.7	4.384	0.218
Yes	9	21.4	13	40.6	5	45.5	3	33.3		
Medications										
Typical antipsychotic	5	11.9	5	15.6	1	9.1	1	11.1	2.744	0.875
Atypical antipsychotic	23	54.8	20	62.5	7	63.6	7	77.8		
Both	14	33.3	7	21.9	3	27.3	1	11.1		
ECT									8.149*	0.042*
No	31	73.8	15	46.9	4	36.4	5	55.6		
Yes	11	26.2	17	53.1	7	63.6	4	44.4		
Visits										
No	9	21.4	6	18.8	3	27.3	1	11.1	0.895	0.885
Yes	33	78.6	26	81.3	8	72.7	8	88.9		
Smoking									4.534	0.208
Non smoker	11	26.2	14	43.8	5	45.5	5	55.6		
Smoker	31	73.8	18	56.3	6	54.5	4	44.4		

 χ^2 : Chi square test

C: Monte Carlo p: p value for association between beck scale and different parameters

*: Statistically significant at $p \leq 0.05$

Table (5) Relation between BSS and suicide data in the studied schizophrenic patients (n= 94).

Method	BSS								χ^2	MC p
	No idea (n = 42)		Passive (n = 32)		Active (n = 11)		Both (n = 9)			
	No.	%	No.	%	No.	%	No.	%		
No specific plan	42	100.0	31	96.9	1	9.1	0	0.0	73.570*	<0.001*
Hanging	0	0.0	0	0.0	1	9.1	2	22.2	9.312*	0.004*
Self-poisoning	0	0.0	0	0.0	7	63.6	4	44.4	36.501*	<0.001*
Drowning	0	0.0	0	0.0	1	9.1	0	0.0	5.184	0.207
Gunshot	0	0.0	0	0.0	1	9.1	0	0.0	5.184	0.215
Falling from height	0	0.0	1	3.1	0	0.0	1	11.1	4.286	0.110
Cut wrist	0	0.0	0	0.0	0	0.0	2	22.2	8.445*	0.006*
Place										
No suicidal act	42	100.0	31	96.9	1	9.1	0	0.0	73.570*	<0.001*
Inside hospital	0	0.0	0	0.0	0	0.0	3	33.3	12.413*	<0.001*
Outside	0	0.0	1	3.1	10	90.9	6	66.7	56.753*	<0.001*
Trigger										
No specific trigger	41	97.6	1	3.1	0	0.0	0	0.0	101.274*	<0.001*
Depressed mood	0	0.0	18	56.3	5	45.5	0	0.0	39.988*	<0.001*
Hopelessness	1	2.4	2	6.3	3	27.3	5	55.6	17.999*	<0.001*
Financial problems	0	0.0	5	15.6	1	9.1	0	0.0	7.497*	0.033*
Loneliness	0	0.0	4	12.5	0	0.0	1	11.1	6.464*	0.047*
Social problems	0	0.0	2	6.3	2	18.2	3	33.3	12.064*	0.001*

Table (5) Continue

Hospital admission due to suicidal behavior											
No need	42	100.0	31	96.9	9	81.8	4	44.4	21.142*	<0.001*	
Admitted	0	0.0	1	3.1	2	18.2	5	55.6			

χ^2 : Chi square test
 MC: Monte Carlo
 p: p value for association between beck scale and different parameters
 *: Statistically significant at $p \leq 0.05$.

4. Discussion

Compared with the general population, schizophrenia patients have an 8.5-fold greater risk of suicide [12]. Between 40% and 50% of people with schizophrenia report suicidal ideation at some point in their lives, 20–50% have a history of suicide attempts [13] and 4–13% eventually commit suicide [14]. However, [15] reported an overall prevalence estimate for completed suicide of 4.9%, which illustrates the differing ways of expressing this suicide rate.

Ninety four patients were admitted to Al-Maamoura hospital for mental health during the time of the study from the first of March 2018 to the end of August 2018 and have met all the inclusion criteria needed to participate in the study.

According to K.Abel et al., [16] differences between males and females in schizophrenia reflect differences in both neurodevelopmental processes and social effects on disease risk and course. Male: female incidence approximates 1.4:1. Yet, [17] reported that schizophrenia is equally prevalent between males and females. In the current study, the male: female ratio approximates 1.6:1. This difference may be due to the cultural and social nature of our society which does not prefer female hospitalization.

The mean age of illness is from 19 to 36 years [18]. This is consistent with the present study according where 40 patients were less than 30 years and 48 were between 30 and 50 years.

According to M.Owen et al., [19] about 85% of schizophrenic patients are unemployed, which is more than the percentage of unemployed patients in the present study (66%). This may be because patients in the Egyptian society may have some peripheral jobs in their relatives' places of work or clerk jobs which allow minimal attendance and work.

Schizophrenia and smoking have shown a stupendous connection in previous studies worldwide. Cigarettes use is especially high in patients with schizophrenia, with estimates ranging from 80 to 90% being regular smokers [20]. Yet, in table (1) the percentage of smokers among the studied schizophrenic patients is 62.8%. This may be because most of female patients were non smokers as the culture and especially rural does not accept a smoker woman.

Most of patients in the present study came from urban areas more than rural areas (53.2% and 46.8% respectively). This comes in agreement with [21] where the schizophrenia percentage was higher in urban relative to rural areas. But this result is in controversy with [22] who reported that the risk of any psychotic disorder is higher for those born in rural areas. This may be because many of the studied schizophrenic patients were not living all their lives in the same area they reported in the interview. A lot of families leave their homes in the rural areas and live in suburbs of big cities. Another cause of this result is the lack of available medical services in rural areas in comparison to urban areas.

When it comes to education, in the studied schizophrenic patients 23.4% of them were illiterate, 23.4% went to primary school, 18.1% went to preparatory school, 22.3% went to secondary school and 12.8% went to university. These results were close to [23] who reported that schizophrenic patients are usually associated with decreased level of education. This can be attributed to impaired cognitive functions in schizophrenic patients either due to medications or the disease itself, also the early onset of schizophrenia leads to impaired scholastic achievement.

In the present study, 44.7% of patients had no suicidal ideation, 34% had passive suicidal ideation, 11.7% had active suicidal ideation and 9.6% had both passive and active suicidal ideation. So, the total percent of patients with suicidal ideation is 54.3%.

This result is consistent with [24] who reported that 51.2% of subjects had suicidal ideation.

In contrast to the present study [25] reported that 31.66% of the studied schizophrenic patients had suicidal ideation. Another two recent studies done by [26] and [27] revealed that 21.5% and 24.0% respectively of the studied schizophrenic patients had suicidal ideation.

The increased percentage of suicide ideations among the studied schizophrenic patients in the present study may be due to the socio-economic problems which affect patient's own life and the support of his relatives who are also under pressure and cannot satisfy most of the patients' needs which make the patients more

hopeless and frustrated, so a considerable percentage of patients wish to end their lives.

Around a third of the studied patients (34%) were passively thinking about the end of their lives as they had death wishes but had no intent to commit suicide, 11.7% of patients were thinking about ending their own lives actively by committing suicide and 9.6% of them were wishing the end of their lives to come by any mean either actively or passively.

When Beck scale for suicide ideation (BSS) was applied on the studied cases, there was no statistically significant relation between suicidal behavior and sex, age, occupation, residence, level of education, duration of admission, number of admissions, received medications, family history of schizophrenia, receiving visits from relatives and smoking.

On the other side, there was a statistically significant relation between suicidal behavior and marital status, onset, duration of schizophrenia and history of undergoing ECT.

This is consistent with [28] who reported that gender, education, current marital status, age of onset and duration of illness were not associated with risk of suicide and [29] who reported that neither gender nor age had significant relation with suicidal behavior in schizophrenic patients.

[24] had an agreement with these results as they reported that gender, duration of illness, type and dose of prescribed antipsychotics, smoking and family history of schizophrenia were not associated with suicidal ideation.

A.Sankaranarayanan et al., [30] had a different observation regarding smoking, cigarettes use is particularly common in schizophrenic patients, and it was noted that smoking cessation reduces depression and suicidal behavior in psychotic patients.

Another result was given by I.Berardelli et al., [31], they concluded that patients with schizophrenia who are at a higher risk to die by suicide are those who are young, male, Caucasian, single, with fair premorbid function, post-psychotic depression. Furthermore, hopelessness, social isolation, hospital admission, deteriorating health with a high level of premorbid functioning, recent loss or rejection, limited psychological support, and social stress are considered significant risk factors in patients with schizophrenia who die by suicide.

In a recent study, R.Cassidy et al., [32] reported that being male, history of attempted suicide, worthlessness, hopelessness, being not adherent to treatment are important risk factors of suicide in patients with schizophrenia.

Some observations suggested that the adverse effects of antipsychotics may contribute to suicidal behavior in patients with schizophrenia were reported [33]. It has been assumed that antipsychotics-induced akathisia,

akinesia, tardive dyskinesia and depressing effects of antipsychotics may increase suicide risk. For example, it has been noted that there was a significant association among akathisia and suicidality in first-episode psychosis.

In the present study, the most common triggers for suicidal ideas were depressed mood and hopelessness. This comes in agreement with [34] who reported symptoms of depression and hopelessness independently predict suicide behavior.

Recently, L.Sher et al., [33] observed that coexistent depression is a significant risk factor for suicidality in patients with schizophrenia and [31] reported that depressive features, including demoralization and hopelessness, are common in schizophrenia and are often interlaced with psychotic symptoms, becoming an important mediator of disability and suicidal behavior.

Methods of suicide in the studied patients

The methods used by our participants were several. Methods with easy access were preferred by most of patients including used-insecticide or medication overdose, followed by drowning and hanging. Substances ingested included mosquito sprays, toilet cleaners or prescribed psychotropic drugs overdose, or over the counter drugs at home. They tried to hang themselves with a piece of cloth or a rope, or jumped in the Mediterranean Sea.

Similar methods were reported by [35] where poison, drugs, hanging and trauma were most common. The most common method in [36] was by intoxication with drugs. Contrarily Ischii reported different methods such as jumping from heights or before trains [37].

5. Conclusions

Suicide risk in hospitalized patients with schizophrenia is high. Accordingly various risk factors were found to have a strong relation with suicidal behavior, namely marital status, onset and duration of schizophrenia, history of undergoing ECT, depressed mood and sense of hopelessness.

Prevention of suicide in schizophrenia would thus depend on identifying patients with the risk factors observed and actively treating depressed mood, dealing with sense of hopelessness.

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