

Original Research Article

RESEARCH ON RISK FACTORS LINKED TO SUICIDE ATTEMPTS IN PATIENTS WITH SCHIZOPHRENIA RECEIVING CARE AT A TERTIARY HOSPITAL

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ABSTRACT

Background: Schizophrenia is a long-lasting and debilitating mental health disorder that affects individuals globally. Recent studies by the World Health Organization (WHO) indicate that over 21 million individuals around the world are living with Schizophrenia.^[1] **Objectives:** 1. To determine the frequency of attempts of suicide in schizophrenia. 2. To study and compare the various risk factors of suicide attempts in patients with schizophrenia. 3. To compare differences in the clinical and socio-demographic profile with and without suicide attempts in patients with schizophrenia. 4. To evaluate the relationship of severity, type and duration of schizophrenic illness among patients with and without suicide attempts.

Materials and Methods: Study Design: Hospital-based descriptive cross-sectional study. **Study area:** The study was conducted in the Department of Psychiatry, in a tertiary care teaching hospital. **Study Period:** 1 year. **Study population:** Participants were male and female patients diagnosed with Schizophrenia who came to the Psychiatry Department. **Sample size:** The study consisted of a total of 100 subjects. (27 attempted and 73 not attempted). **Sampling Technique:** convenience sampling method.

Results: The mean score on the SAPS (positive symptoms scale) was 17.33 (SD - 7.68) for non-attempters, compared to 21.93 (SD - 9.20) for those with suicide attempts. The difference was statistically significant ($P = 0.01$) in the test.

Conclusion: Suicide remains a significant risk for individuals with schizophrenia, particularly during the acute phases of the illness. Key risk factors include younger age, female gender, low income, alcohol use, and unemployment. Early identification, aggressive intervention, and sustained care beyond clinical recovery are crucial in mitigating this risk. Effective strategies involve treating depressive symptoms, improving treatment adherence, and maintaining vigilance, especially after significant losses.

Keywords: Schizophrenia, Suicide, Calgary depression scale for Schizophrenia (CDSS).

INTRODUCTION

Schizophrenia is a long-lasting and debilitating mental health disorder that affects individuals globally. Recent studies by the World Health Organization (WHO) indicate that over 21 million individuals around the world are living with Schizophrenia.^[1] The Global Burden of Disease Study highlights that Schizophrenia contributes

significantly to disability, representing 1.1% of total disability-adjusted life years (DALYs) and 2.8% of years lived with disability (YLD).^[2] According to the WHO, Schizophrenia ranks as the eighth leading cause of DALYs globally for those aged 15 to 44 years among 135 different diseases or health conditions.^[2] It is estimated that the lifetime prevalence of Schizophrenia is approximately 1%,

with typical onset occurring in late adolescence or early adulthood.

Suicide has emerged as a significant public health issue globally. The World Health Organization states that approximately 1 million individuals die by suicide each year, while 20 times that number attempts it.^[3] Suicidal ideation involves considering actions aimed at ending one's own life. Among the various causes of suicide, schizophrenia ranks as the second most prevalent disorder contributing to this issue, following depressive disorders.^[4] Schizophrenia primarily reduces the life expectancy of those affected by around 10 years, with suicide being the leading cause of early death in individuals with this condition. Suicide represents the most tragic possible outcome of schizophrenia.

Suicide not only brings a definitive end for individuals but also leaves a profound and enduring effect on families, fellow patients, and healthcare professionals.^[5] Beyond depression, the likelihood of suicide is notably higher in individuals with schizophrenia than in all other mental health disorders.^[6] It has been estimated that the suicide rate among those with schizophrenia is roughly 20 to 50 times higher than that of the general population.^[7] Research indicates that between 20% and 40% of individuals with schizophrenia will attempt suicide. The rate of completed suicides among those with schizophrenia varies from approximately 9% to 12.9%.^[8] About 1% to 2% of patients who have tried to take their own lives are reported to complete suicide within a year of their first attempt, with an additional 1% potentially succeeding each following year.^[9]

The strongest associations with later suicide in individuals with schizophrenia were found to be young age, male gender, and a higher educational level. Factors related to the illness, such as depressive symptoms, a previous history of suicide attempts, ongoing hallucinations,^[10] delusions, the presence of insight, and co-existing issues like chronic physical illness, a family history of suicide, as well as concurrent alcohol and drug abuse, were strongly linked to later suicide attempts. Some observations indicate that the side effects of antipsychotic medications could play a role in increasing suicidality among individuals with schizophrenia. It has been proposed that side effects like akathisia, akinesia, tardive dyskinesia, and the depressive impact of antipsychotic medications may primarily heighten the risk of suicide attempts and are associated with persistent, non-regressive symptomatology, most frequently occurring in individuals under 30 years of age.

The long-term nature of the illness, inability to engage in social activities, and feelings of isolation—despite not being abandoned—are traits commonly seen in those who die by suicide. Suicide attempts among individuals with schizophrenia are serious and often need medical intervention; those who have made multiple attempts exhibit a much stronger intent to end their lives and tend to use more lethal

methods.^[11] While risk factors for suicide, such as prior attempts, are noted, they often provide limited insight into predicting eventual suicide, and conventional risk assessment tools are deemed ineffective.^[12]

There are limited studies conducted in India concerning this topic. This study aims to assess the prevalence of recent suicidal thoughts among individuals with schizophrenia and to identify the socio-demographic and clinical factors that are primarily linked with such thoughts. Examining the risk factors and psychological dimensions of suicide attempts among schizophrenia patients will help illuminate strategies for decreasing global mortality rates.

Objectives

1. To determine the frequency of attempts of suicide in schizophrenia
2. To study and compare the various risk factors of suicide attempts in patients with schizophrenia
3. To compare differences in the clinical and socio-demographic profile with and without suicide attempts in patients with schizophrenia
4. To evaluate the relationship of severity, type and duration of schizophrenic illness among patients with and without suicide attempts.

MATERIALS AND METHODS

Study Design: Hospital-based descriptive cross-sectional study.

Study area: The study was conducted in the Department of Psychiatry, in a tertiary care teaching hospital.

Study Period: 1 year.

Study population: Participants were male and female patients diagnosed with Schizophrenia who came to the Psychiatry Department.

Sample size: The study consisted of a total of 100 subjects. (27 attempted and 73 not attempted)

Sampling Technique: convenience sampling method.

Inclusion Criteria

- a) Patients diagnosed with schizophrenia based on the ICD-10 diagnosis criteria.
- b) Patients on medication for schizophrenia illness within a year of onset of symptoms.
- c) Patients who have been on regular medication since diagnosis.
- d) The age of the patient at the onset of illness should have been more than 16 years

Exclusion criteria:

- a) Patients with alcohol and other substance use disorders.
- b) Patients with organic conditions.
- c) Patients who are not cooperative for interview.
- d) Patients with mental retardation.
- e) Patients with any history of neurological disorders.

Ethical consideration: Institutional Ethical committee permission was taken before the commencement of the study.

Study tools and Data collection procedure

- Semi-structured proforma
- ICD-10 clinical description and diagnostic guidelines
- Calgary depression scale for Schizophrenia (CDSS)
- Scale for assessment of negative symptoms (SANS)
- Scale for assessment of positive symptoms(SAPS)
- Becks Suicide intent scale

DESCRIPTION OF THE INSTRUMENTS

a) Semi-structured Proforma, which includes the socio-demographic data, family history, duration of illness, and details of suicide attempts if they are present.

b) Clinical interview for diagnosis of schizophrenia according to ICD-10 criteria.

ICD-10 is the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD), which is a medical classification listed by the World Health Organization (WHO). It contains codes for diseases, signs and symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or diseases.

c) Calgary Depression Rating Scale for Schizophrenia (CDSS)

This is designed and published by Donald Addington, Jean Addington, and FleanorMaticka- Tyndale. It was designed for the assessment of depression in Schizophrenia and mainly to address the issue of overlap 28 between depression and negative symptoms. CDSS has demonstrated superiority relative to other depression rating scales. CDSS is a 9-item structured interview scale in which each item has a 4-point measure. The last item depends on the observation of the entire interview. It has excellent psychometric properties, internal consistency, reliability, sensitivity, specificity, and convergent validity.

D) Scales for the Assessment of Positive Symptoms (SAPS) and Scale for the Assessment of Negative Symptoms (SANS) have been used since 1983 by the University of Iowa Press, these scales are used for evaluating positive and negative symptoms in patients suffering from schizophrenia they were used widely in many studies and tested well for reliability

and validity of the scale. Items in both scales are scored between 0 (none) and 5 (Severe)

SAPS constitute 35 category items, which are divided into five domains, which include

- Hallucinations
- Delusions
- Bizarre behavior
- Positive formal thought disorder
- Inappropriate affect

SANS mainly contains 24 items, which are divided based on the following five domains

- Affective flattening or blunting
- Alogia
- Avolition –apathy
- Anhedonia-asociality
- Attention

e) **Beck's Suicide Intent scale:** It was used to evaluate the intent to attempt suicide .it was developed by Beck et al. in 1975, this is a scale that mainly evaluates the main objective circumstances related to suicide There are eight items in the objective questionnaire and 7 items in the self-report questionnaire, where each item is scored between 0 and 2 with a total scoring ranging from 0 to 30.

Patients who fulfil the ICD-10 criteria to diagnose schizophrenia are examined in the Department of Psychiatry. Informed consents were obtained for the participation of patients who satisfied the inclusion & exclusion criteria were taken into the study. Subjects were explained about the purpose of the study, and informed consent was obtained from all the participants. Patients were administered semi-structured proforma, a Scale for Assessment of Positive Symptoms (SAPS), a Scale for the assessment of Negative Symptoms, The Calgary Depression Rating Scale for Schizophrenia (CDSS) and a suicide intent scale for patients with a history of attempted suicide.

Statistical Analysis

For statistical calculations, data is spread in an Excel sheet descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean $\pm$ SD (Min-Max), and results on categorical measurements are presented in Number (%). Significance is assessed at a 5% level of significance. The Chi-square/Fisher Exact test has been used to find the significance of study parameters on a categorical scale between two or more groups. A p-value < 0.05 was considered statistically significant. The Statistical software, namely SPSS 21.0, was used for the analysis of the data.

RESULTS

Table 1: Frequency of Suicide Attempts in The Study Population

Suicide Attempt	Frequency	Percentage
Yes	27	27%
No	73	73%
Total	100	100

In the study population, 27 % had attempted suicide, while 73% did not have a history of any suicide attempt.

Table 2: Age-wise comparison of suicide attempters and non-attempters

Age in years	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
< 21	0	0	3	4.1	3
21 - 30	13	48.2	34	46.6	47
31 – 40	11	40.7	22	30.1	33
41 - 50	3	11.1	11	15.1	14
51 - 60	0	0	3	4.1	3
Total	27	100	73	100	100

Chi- Square = 3.12 P value = 0.54 (Not significant)

Of the study population who attempted suicide, none were below 21 years, 48% were between the ages of 21 and 30 years, 40.7% were between 31 and 40 years, 11.1% were between 41 and 50 years, and no one was between 51 and 60 years. Among the schizophrenia patients who didn't attempt suicide, 4.1% were below 21 years, 46.6% were between 21 and 30 years, 30.1% were between 31 and 40 years of age, 15% were between 41 and 50 years, and 4.1% were between 51 to 60 years of age. This difference was not as significant.

Among the group of suicide attempters, 77.8% were male patients, and 22.2% were female patients. In the non-attempters group, 69.9% were males, while 30.1% were females, these differences were not statistically significant.

Among the suicide attempters' group, 11.1% were illiterate, 25.9% were educated up to primary, 22.2% up to secondary, 7.4% up to high school, 22.2% up to higher secondary, and 11.1% were graduates. In the group of attempters, 11% were illiterates, 17.8% were educated up to primary level, 28.8% up to secondary level, 15.1% up to high school, 20.5% up to higher secondary, and 6.8% were graduates. The difference was not statistically significant.

In the group that attempted suicide, 14.8% were housewives, 11.1% were in skilled jobs, 44.4% were in unskilled jobs, and 29.6% were unemployed. In

the non-attempters group, 16.4% were housewives, 1.4% were in skilled jobs, 45.2% were in unskilled jobs, and 37% were unemployed. The difference was not statistically significant.

Out of the group that attempted suicide, 74.1% were from the lower socio-economic group, 22.2% were from the middle socio-economic group, and 3.7% belonged to the higher socio-economic group. In the non-attempters group, 82.2% were from the lower socio-economic group, 16.4% were from the middle socio-economic group, and 1.4% belonged to the higher socio-economic group. The above relation was not statistically significant.

Among the groups that attempted suicide, 40.7% were married, 44.4% were unmarried, 3.7% were separated, and 11.1% were divorced. Among the non-attempters group, 35.6% were married, 56.2% were unmarried, 6.8% were separated, and 1.4% were divorced. The difference was not statistically significant.

In the study population who attempted suicide, 74.1% belonged to a joint family, while 25.9% belonged to a nuclear family. Among those who did not attempt suicide, 72.6% belonged to a joint family, while 27.4% belonged to a nuclear family. The difference was statistically not significant.

Table 3: Comparison of suicide attempters and non-attempters by family history of mental illness and suicide

Family History	Suicide attempt				Total	Chi value	P value
	Yes		No				
	n	%	n	%			
None	7	25.9	41	56.2	48	7.22	0.007*
Mental illness	8	29.6	21	28.8	29	0.01	0.93
Suicide	7	25.9	4	5.5	11	8.42	0.003*
Both	5	18.8	7	9.6	12	1.49	0.22
Total	27	100	73	100	100	-	-

* P value < 0.05 Significant

Out of the study population who attempted suicide, 25.9% had no mental illness or suicide in the family, 29.6% had a family history of mental illness, 25.9% had a family history of suicide, and 18.8% had a family history of both mental illness and suicide. Among the non-attempters group, 56.2% had no family history of mental illness or suicide, 28.8% had a family history of mental illness, 5.5% had a family history of suicide, and 9.6% had a family history of both mental illness and suicide. History of suicide in the family was significantly more prevalent in those

who attempted suicide compared to those who did not (p = 0.003). The non-attempters group had significantly less number of family members with either mental illness or suicide (p=0.007).

In the study group of those who attempted suicide, 70.4% were undifferentiated type, 18.5% were paranoid type, 7.4% were hebephrenic type, and 3.7% were catatonic type. Among the non-attempters group, 56.2% were undifferentiated type, 30.1% were paranoid type, 8.2% were hebephrenic type,

and 5.5 % were catatonic type. The difference was statistically not significant.

Table 4: Comparative study of suicide attempters and non-attempters by saps (scale for the assessment of positive symptoms) scores

SCALE	Suicide Attempts				P value
	Yes (n – 27)		No (n – 73)		
	Mean	S.D.	Mean	S.D.	
SAPS SCORE	21.93	9.20	17.33	7.68	0.01

The mean score on the SAPS (positive symptoms scale) was 21.93 (SD - 9.20) for those with suicide

attempts. The difference was statistically significant (P = 0.01) in the test.

Table 5: Comparative study of suicide attempters and non-attempters by sans (scale for the assessment of negative symptoms) scores

Symptoms/ scores					
SCALE	Suicide Attempts				P value
	Yes (n – 27)		No (n – 73)		
	Mean	S.D.	Mean	S.D.	
SANS SCORE	15.52	6.77	15.23	7.61	0.86

The mean SANS (negative symptoms scale) score was 15.23 (SD - 7.61) for non-attempters, compared to 15.52 (SD - 6.77) for those with attempts. This difference (P = 0.86) in the test.

Table 6: Comparison of suicide attempters and non-attempters by CDSS (Calgary depression scale for schizophrenia) scores

SCALE	Suicide Attempts				P value
	Yes (n = 27)		No (n = 73)		
	Mean	S.D.	Mean	S.D.	
CDSS SCORE	4.667	2.602	3.320	2.266	0.01

The mean score on the CDSS (Depression scale) was 3.320 (SD - 2.266) for non-attempters, while it was 4.667 (SD - 2.602) for attempters. This difference was statistically significant (P = 0.01) in the test.

Among those who attempted suicide, 51.85 % attempted suicide during the first year of their illness, 14.82 % during their second year, 3.7 % during their third year, 11.11 % during their fourth year, 3.7 % during their fifth year, and 14.82 % after five years into their illness.

Among total suicide attempters, 40.74 % reasoned their suicide attempt to delusions, 29.63 % secondary

to depressive features, 14.81 % as an impulsive act, 7.41 % due to hallucinations, and 7.41 % attributed to insight.

In our study, out of the 27 individuals who attempted suicide, hanging was the most common method adopted by 44.4 % of people. Drug overdose was the second common method. 25.9 % of suicide attempters followed this method. 11.1 % attempted suicide by drowning. Two individuals each (7.4 %) by OPC poisoning and self-immolation, while 1 person (3.7 %) attempted suicide by trying to catch a live electrical wire.

Table 7: Suicide intent among those who attempted

Suicide Intent	Frequency	Percentage
Low	10	37.1
Medium	9	33.3
High	8	29.6
Total	27	100

On assessing the severity of suicide attempts (suicide intent scale), 37.1 % were found to have less intent, 33.3 % were found to have medium intent, and 29.6 % had high intent.

Among the people who attempted suicide, 37% had communicated their intent before the act, while 63 % did not communicate.

Table 8: Distribution of those who attempted suicide by the need for hospitalisation for the attempt

Hospitalization	Frequency	Percentage
No	5	18.5
Yes	22	81.5
Total	27	100

Out of those who attempted suicide, 81.5 % were hospitalised for their suicidal attempt, while 18.5 % were not treated by admission to a hospital.

DISCUSSION

In the present study population, a certain percentage had made a suicide attempt, while 73% did not report any history of such attempts. Research indicates that individuals with schizophrenia carry a high risk of suicidal behaviour throughout their lives. In the subset of individuals who attempted suicide, none were younger than 21 years, 48.2% were aged 21 to 30 years, 40.7% were between 31 and 40 years, 11.1% were between 41 and 50 years, and none were between 51 and 60 years. Among those patients who did not attempt suicide, 4.1% were 21 years old, 46.6% were between 21 and 30 years, 30.1% were aged 31 to 40 years, 15.1% were between 41 and 50 years, and 4.1% were between 51 and 60 years. The difference between these groups was not statistically significant. In the group of individuals who attempted suicide, 77.8% were male, and 22.2% were female. Conversely, in the group of non-attempters, 69.9% were male, and 30.1% were female; these differences were also not statistically significant.

The role of demographic variables in suicidal behaviour has given contrasting results across various studies. Young males suffering from schizophrenia have been stated to be at risk. Tsuang,^[13] reported a lesser suicide risk in females suffering from schizophrenia. While studies by Ting-Pong Ho¹⁴ and Vanessa Raymont reported a higher risk for young adults. In our study, we could not establish age and gender to be associated with suicidal attempts in schizophrenia.^[15]

We were not able to find any association between educational status and suicide attempts in our study. Most of the individuals in our study population were having education towards the lower side. Although unemployment has been stated in literature and in some studies (Kaplan and Vanessa,^[16]) to be a risk factor for suicide attempts in schizophrenia, it could not be replicated in this study. The results of this study were similar to the ones by Louis Appleby and Harkavy,^[17] which found the role of unemployment to be overplayed. Higher socio-economic status is stated to be a risk factor for suicide. In the higher status group, falling ill in social status due to illness is said to contribute towards suicide attempts. Suicide is also said to be more prevalent in the lower socio-economic class (Kaplan).^[16]

According to the study by Radomsky et al,^[18] being single, separated or divorced did not confer a higher risk for suicide attempts in patients with psychosis. However, the result is in contrast to the literature, which mainly states that the majority of schizophrenic suicides are committed by unmarried. A common underlying genetic factor may explain the association of suicidal behaviour with aggression. In our study, a significantly higher number of individuals who had a family history of suicide had more suicidal attempts compared to those who did not. The results of the study were similar to previous studies, which found genetic and familial factors that

are contributing to suicide risk. The finding was also consistent with adaption studies reporting genetic risk for suicide (Roy and Segal).^[19]

The mean score with SAPS (positive symptom scale) was 17.33 (SD-7.68) for non-attempters, compared to 21.93 (SD-9.20) for those with suicide attempts. The difference was statistically significant ($p=0.01$) in the t-test. Prominent delusions and suspiciousness (Fenton et al,^[20]) and persistent hallucinations (Brier & Astachan,^[21]) have been reported to have a mainly elevated risk of suicide in schizophrenia. A study by Kaplan and Harrow,^[22] also found that positive symptoms correlated with suicidal behaviour in schizophrenia were related to the severity of the illness (Minkoff et al,^[23]), particularly the positive symptom. The mean SANS (negative symptoms scale) score was 15.23 (SD-7.61) for non-attempters, compared to 15.52 (SD-6.77) for those with attempt. This difference was not statistically significant ($p=0.86$) in the test.

Most of the studies have not established an association between suicidal behaviour and negative symptoms (Dhavale et al,^[24]) similar to our study, while Fenton et al.²⁰ found that suicidal behaviour in schizophrenia had significantly lower negative symptoms, such as diminished drive, blunted affect, and social & emotional withdrawal, counter the emergence of suicidality in patients with schizophrenia and that deficit syndrome defines a group at relatively lower risk for suicide. In our study, both groups were suffering to a similar extent from negative symptoms.

The mean score on (The depression scale) was 3.320 (SD – 2.266) for non-attempters, while it was 4.667 (SD -2.602) for attempters. This difference was statistically significant ($P=0.01$) in the test. Numerous studies (Bartels, Radomsky, Roy, and Steinberg) and literature have found depression symptoms to be strongly related to higher suicidal behaviour in schizophrenia.^[25] Chian-Jue Kuo et al,^[26] had found the depressive features, even in residual phases of schizophrenic illness, to be related to higher suicidal intensity. All these studies emphasised that feelings of hopelessness were one of the major factors related to suicidal attempts in schizophrenia. Most of the studies reported that concomitant depressive symptoms elevate the risk of suicidal behaviour in schizophrenia. The results of our study also established a similar correlation. There was a strong and significant relationship between the presence of depressive features and suicide attempts. The finding of delusions to be the most common cause of suicidal attempts in our study is similar to the reports by Fenton et al,^[20] who found two positive symptoms, suspiciousness and delusion, to be more severe in schizophrenic suicides. Dhavale et al,^[24] in their study on suicide attempts in schizophrenia, also found that delusions were the most common cause. More than forty per cent of those who attempted suicide attributed their delusions to be the reason which drove them to the attempt.

In our study, out of the,^[27] individuals who attempted suicide, hanging was the most common method adopted by 44.4 % of people. Drug overdose was the second common method. 25.9 % of suicide attempters followed this method. 11.1 % attempted suicide by drowning. Two individuals each (7.4 %) by OPC poisoning and self-immolation, while 1 person (3.7%) attempted suicide by trying to catch a live electrical wire.

Among the people who attempted suicide, 37 % had communicated their intent before the act, while 63 % did not. From our study, more than eighty per cent of those who attempted suicide were hospitalised for their attempt, and nearly one out of every third person suffering from schizophrenia communicated their attempt. This should make us look into the fact that verbal warnings given by individuals suffering from schizophrenia should not be ignored and need to be addressed and intervened to avoid a calamitous outcome, and most of the attempts are serious, requiring admission.

CONCLUSION

Suicide remains a significant risk for individuals with schizophrenia, particularly during the acute phases of the illness. Key risk factors include younger age, female gender, low income, alcohol use, and unemployment. Early identification, aggressive intervention, and sustained care beyond clinical recovery are crucial in mitigating this risk. Effective strategies involve treating depressive symptoms, improving treatment adherence, and maintaining vigilance, especially after significant losses. Public education, healthcare staff awareness, and accessible mental health facilities are essential for early identification and prevention. Further research, including psychological autopsies and biological studies, alongside exploring the role of atypical antipsychotics, is needed to better understand and prevent suicidal behaviour in schizophrenia. Addressing these challenges is vital to reducing suicide rates in this vulnerable population.

REFERENCES

1. Silva RD, Albuquerque SG, Muniz AD, Pedro Filho PR, Ribeiro S, Pinheiro PR, Albuquerque VH. Reducing the schizophrenia stigma: A new approach based on augmented reality. *Computational intelligence and neuroscience*. 2017;2017.
2. Rössler W, Salize HJ, van Os J, Riecher-Rössler A. Size of the burden of schizophrenia and psychotic disorders. *European Neuropsychopharmacology*. 2005 Aug 1;15(4):399-409.
3. Sadock B. dan Ruiz P. Kaplan and Sadock's Comprehensive Textbook of Psychiatry.
4. Vasan DS, Kumar SK, Reddy KR. Study of Factors Affecting Suicidal Ideation in Persons with Schizophrenia.
5. Allebeck P. Schizophrenia: a life-shortening disease. *Schizophrenia bulletin*. 1989 Jan 1;15(1):81-9.
6. Asnis GM, Friedman TA, Sanderson WC, Kaplan ML, Van Praag HM, Harkavy- Friedman JM. Suicidal behaviours in adult psychiatric outpatients: I. Description and prevalence. *The American journal of psychiatry*. 1993 Jan.
7. Black DW. Mortality in schizophrenia—the Iowa Record-Linkage Study: a comparison with general population mortality. *Psychosomatics*. 1988 Jan 1;29(1):55-60.
8. Tsuang MT, Woolson RF, Fleming JA. Premature deaths in schizophrenia and affective disorders: an analysis of survival curves and variables affecting the shortened survival. *Archives of general psychiatry*. 1980 Sep 1;37(9):979-83.
9. Raymont V. Suicide in schizophrenia—how can research influence training and clinical practice? *Psychiatric Bulletin*. 2001 Feb;25(2):46-50.
10. Hor K, Taylor M. Suicide and schizophrenia: a systematic review of rates and risk factors. *Journal of Psychopharmacology*. 2010 Nov;24(4_suppl):81-90.
11. Radomsky ED, Haas GL, Mann JJ, Sweeney JA. Suicidal behaviour in patients with schizophrenia and other psychotic disorders. *American journal of psychiatry*. 1999 Oct 1;156(10):1590-5.
12. Heila H, Isometsa ET, Henriksson MM, Heikkinen ME, Marttunen MJ, Lonnqvist JK. Suicide and schizophrenia: a nationwide psychological autopsy study on age- and sex-specific clinical characteristics of 92 suicide victims with schizophrenia. *American Journal of Psychiatry*. 1997 Sep 9;154(9):1235-42.
13. Tsuang MT, Woolson RF, Fleming JA. Premature deaths in schizophrenia and affective disorders: an analysis of survival curves and variables affecting the shortened survival. *Archives of general psychiatry*. 1980 Sep 1;37(9):979-83.
14. Kan CK, Ho TP, Dong JY, Dunn EL. Risk factors for suicide in the immediate post-discharge period. *Social Psychiatry and Psychiatric Epidemiology*. 2007 Mar;42(3):208-14.
15. Raymont V. Suicide in schizophrenia—how can research influence training and clinical practice? *Psychiatric Bulletin*. 2001 Feb;25(2):46-50.
16. Kaplan and Sadock's Synopsis of Psychiatry Behavioral Sciences/Clinical Psychiatry. Emergency Psychiatric Medicine, Suicide (34.2). 9th Ed. 2003. Lippincott Williams and Wilkins.
17. Harkavy-Friedman JM, Restifo K, Malaspina D, Kaufmann CA, Amador XF, Yale SA, Gorman JM. Suicidal behaviour in schizophrenia: characteristics of individuals who had and had not attempted suicide. *American Journal of Psychiatry*. 1999 Aug 1;156(8):1276-8.
18. Radomsky ED, Haas GL, Mann JJ, Sweeney JA. Suicidal behaviour in patients with schizophrenia and other psychotic disorders. *American journal of psychiatry*. 1999 Oct 1;156(10):1590-5.
19. Roy A, Segal NL, Centerwall BS, Robinette CD. Suicide in twins. *Archives of general psychiatry*. 1991 Jan 1;48(1):29-32.
20. Fenton WS, McGlashan TH. Natural history of schizophrenia subtypes: I. Longitudinal study of paranoid, hebephrenic, and undifferentiated schizophrenia. *Archives of General Psychiatry*. 1991 Nov 1;48(11):969-77.
21. Brier A, Astachan BM. Characterization of schizophrenic patients who commit suicide. *Am J Psychiatry* 1984; 141:206-209.
22. Kovacs M, Garrison B. Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalised with suicidal ideation. *American Journal of Psychiatry*. 1985 May 5;142(5):559-63.
23. Drake RE, Cotton PG. Depression, hopelessness and suicide in chronic schizophrenia. *The British Journal of Psychiatry*. 1986 May;148(5):554-9.
24. Roy A, Segal NL, Centerwall BS, Robinette CD. Suicide in twins. *Archives of general psychiatry*. 1991 Jan 1;48(1):29-32.
25. Bartels SJ, Drake RE, McHugo GJ. Alcohol abuse, depression, and suicidal behaviour in schizophrenia. *The American journal of psychiatry*. 1992 Mar.
26. Kuo CJ, Tsai SY, Lo CH, Wang YP, Chen CC. Risk factors for completed suicide in schizophrenia. *Journal of Clinical Psychiatry*. 2005 May 15;66(5):579- 85.