



**Prevalence and Risk Factors Associated with Suicidal Ideation  
Among Schizophrenic Patients- A Conceptual Perspective**

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**Abstract**

Schizophrenia is a chronic illness caused by interrelated biological, developmental and environmental factors. Among the numerous challenges faced by individuals with schizophrenia, presence of suicidal ideation is a matter of significant concern due to high prevalence. This paper aims to explore the theoretical aspects underlying the suicidal ideation in individuals diagnosed with schizophrenia. The paper first provides an overview of the complex interplay between schizophrenia and suicidal ideation. Furthermore, it delves into the impact of various socio-demographic, clinical and psycho-social risk factors, such as age, gender, marital status, types of symptoms, and level of insight on suicidal ideation in schizophrenia. In addition, the paper discusses prominent theoretical framework and mechanisms underlying suicidal ideation in schizophrenia. The findings contribute to the existing body of knowledge as well as inform the development of targeted interventions and prevention measures for individuals with schizophrenia having suicidal ideation which is crucial for enhancing clinical interventions and ultimately reducing the devastating impact of suicide in schizophrenia.



## Introduction

Schizophrenia is a detrimental and chronic illness having positive symptoms like delusions, hallucinations and negative symptoms of avolition, social withdrawal and apathy which can be caused on by an array of interrelated variables such as biological, developmental and environmental variables (Millan et al., 2016). Professor Blueler coined the term “Schizophrenia” at German Psychiatric Association meeting in Berlin on April 24, 1908. According to Blueler, one of the significant triats is the splitting of various psychic function followed by the personality of an individual getting erratic as the illness progresses (Ashok et al., 2012). As per World Health Organization (2022), one in 300 people or 24 million people globally suffer from Schizophrenia (SCZ) disorder. It typically starts in youth or the early stages of adulthood and lasts the entirety of the patient’s life. The life expectancy of those who have Schizophrenia is 10-20 years less than that of the general population. One of the recognized key aspects of Schizophrenia is cognitive deficit. These deficiencies begin to exist at the onset of the illness and persist in advancing years. Schizophrenia exhibits cognitive and social dysfunction as published by numerous studies in past 20 years (Kurtz et al., 2018). The wide spectrum of cognitive deficits in Schizophrenia is a distinct area of the illness which is related closely to functional outcome. Attention, perception, memory and problem-solving are such deficiencies that are linked to inadequate psychosocial functioning (Wats, 2015). Cognitive impairment is related closely to high suicide rate as reported by several studies. In fact, cognitive impairment has been identified in patients with history of suicidal attempts as well as in cases with patients having current suicidal ideation. These deficits lead to inaccurate judgment of one’s living conditions by impairing their decision making and problem-solving abilities which raises their risk for suicidal ideation preceding suicide (Pu et al., 2017; Verma et al., 2016). Suicidal ideation is the term for the thoughts related to the ideas of suicide. Suicidal ideation is undoubtedly a risk factor for suicide attempt, although about 70% of the people with suicidal ideation would not go on for suicidal attempt by Borders (2020). Suicidal ideation is a general term for a variety of thoughts, desire and obsessions with death or suicide. Suicidal ideation is not defined in a way that is consistently acknowledged worldwide. Presence of suicidal ideation is of “waxing and waning manner” and as a result has noticeably changing characteristics and intensity overtime. Understanding



that suicidal ideation as a diverse phenomenon is crucial for healthcare professionals as even while reporting suicidal ideations, most patients have control over their suicidal ideation and do not try to attempt suicide Harmer et al. (2020). Liu, Bettis and Burke (2020) present that suicidal ideation can be passive as well as active, depending on its degree. Additionally, the National Action Alliance for Suicide Prevention has expressed the beliefs that passive ideation may actually be comparable to active ideation in its association with detrimental mental health outcomes, including suicidal behavior, in a recent report commissioned by the National Institute of Mental Health.

In Schizophrenia one of the main factors of early mortality is suicide. Up to 60% of individuals with Schizophrenia attempt suicide and 4% to 13% are those individuals that actually succeed in taking their own lives (Verma et al., 2016). Given that suicidal ideation is one of the risk factors for suicidality in schizophrenia and the basis for prevention of suicide in schizophrenia, supports the notion that patients with schizophrenia have higher risk of suicidal ideation than general population; the study suggested that approximately 15% of patients with schizophrenia had recently experienced suicidal ideation (Fang et al., 2019). Bornheimer (2016) findings showed that the association between depressive symptoms and suicidal ideation varies depending on positive symptoms of schizophrenia, with suicidal ideation being more common among adult patients of schizophrenia with higher levels of hallucinations and delusions as measured on Positive and Negative Syndrome Scale. Fleischhacker et al. (2014) held that With a 5.65 of lifetime risk of suicidality, people with schizophrenia (40-79%) have experienced suicidal thoughts at least once during their course of the condition.

Amidst significant advances in the treatment choices for Schizophrenia over the past several decades, the statistics of suicide, suicidal ideation have not significantly decreased. One needs to understand the theoretical perspective of suicidal ideation in Schizophrenia, in order to prevent suicidal behavior among patients with Schizophrenia.



## Prevalence and risk factors of suicidal ideation in Schizophrenia

### Prevalence

Schizophrenia is strongly related to suicidal ideation and attempt. Individuals with Schizophrenia are at 13 times more greater risk of suicide as compared to general population (Too et al., 2019). According to recent studies, prevalence rates for suicidal ideation in Schizophrenia are reported to be 40-50% (Bornheimer & Nguyen, 2016; Taylor et al., 2015; Haining et al., 2021). In addition, the retrospective study of suicide risk among people with Schizophrenia found that 20-50% had suicidal ideas about killing themselves (Haining et al., 2021; Ayalew et al., 2021). The rate of prevalence of suicidal ideation was found to be 10-20% in Schizophrenia in recent cross-sectional studies (Abraham & Jayakrishnaveni, 2020; Husain et al., 2021; Yin et al., 2023). The prevalence rates indicates the need for in-depth understanding of risk factors for suicidal ideation in Schizophrenia to have a more conceptualized model decreasing suicide risk in individuals with Schizophrenia.

### Demo-graphic risk factors

Demographic factors play a very important role in understanding the individual related aspect that makes him more vulnerable or can contribute towards suicidal ideation in Schizophrenia involving age at onset of illness, gender, marital status, family type and employment. In a study, it was found that Marital status and educational status were significantly associated with the presence of suicidal ideation with  $P = 0.015$  and  $0.001$  respectively. Even individuals with Schizophrenia living in nuclear family setup showed suicidal ideation (Ayalew et al., 2021; Popovic et al., 2014). The risk of suicidality increases 1.1% annually, and age of commencement of illness is the only independent risk factor that has been identified in all investigations (Castelein et al., 2015; Austad et al., 2015; Mitter et al., 2013). The level of education showed substantial correlation with suicidal ideation in another study. In comparison to people with formal education, the ones with secondary and tertiary education were 5.8 and 9.3 times respectively, more likely to have suicidal ideation. It explains contribution of higher education towards suicidal ideation in Schizophrenia because higher level of education leads to strong sense of loss brought on by illness which directly raises risk of suicidal ideation (Chong et al., 2020; Popovic et al., 2014; Dong et al., 2019). (Cassidy et



al., 2018; Anderson et al., 2018; Zaheer et al., 2020) reported increased suicidal ideation in males as compared to females, especially more in the initial years of diagnosis. Females are at higher risk of suicidal ideation if they are diagnosed with Schizophrenia at later age especially 35-45 years of age though there are some studies suggests different patterns on account of gender difference.

### **Clinical and psycho-social risk factors**

There are certain aspects of schizophrenia disorder that makes one more prone to increased risk of suicidal ideation. One out many such factors is the type of symptoms in Schizophrenia: positive and negative symptoms. The positive symptoms of Schizophrenia are highly correlated with suicidal ideation along with the severity of positive symptoms including strong delusion and hallucinations, hallucinations specifically those that are commanding in nature (Husain et al., 2021; Klejby et al., 2015). Studies also reported symptoms of depression in Schizophrenia to be associated with suicidal ideation, even in the residual phase. It is believed that patients face adversities in their daily life when they gets discharged from the hospital and which leads them to feelings of helplessness and dejection directing towards suicidal ideation (Husain et al., 2021; TARRIER et al., 2013). The level of insight one has towards his illness also increases the risk of higher suicidal ideation in Schizophrenia because of lack of awareness related to the consequences of behavior during illness as it will result in poor prognosis and non-compliance with treatment (Husain et al., 2021; Verma et al., 2016). The other risk factor suggestive of being associated with high suicidal ideation and behavior is untreated Schizophrenia and its duration (Penttila et al., 2014; Shrivastava et al., 2016).

Along with clinical characteristics, psycho-social factors are also important as one has to live in the society. Therefore, understanding the relation of social and psychological factors that increases the suicidal ideation in Schizophrenia is necessary. Isolation and poor family support are suggestive of one of the risk factors for increased suicidal ideation (Husain et al., 2021; Zhornitsky et al., 2012) along with the poor social relationship that is obvious in individuals with Schizophrenia that poses greater difficulty in adjusting in normal life and without any help it could become overbearing for the individual increasing suicidal ideation (Zhornitsky et al., 2012; Hswen et al., 2018).



## **Mechanisms underlying association between Suicidal Ideation and Schizophrenia**

### **Neuro-biological mechanisms**

Numerous biological makers are evaluated in the past that are associated with suicidal ideation in Schizophrenia and it involves biochemical and brain abnormalities. When levels of Thyroid-stimulating hormone (TSH) are high it increases the suicidal ideation and behavior. It has been noted in research that during initial phase of illness its levels are high that also supports studies of associating suicidal ideation in earlier phase of illness to be higher (Shrivastava et al., 2016). The survival and growth of neurons is regulated by Brain derived neurotropic factor (BNDF). It has inverse relation with suicidal ideation as suicidal ideation is higher in Schizophrenia when BNDF levels are low (Notaras et al., 2015; Shrivastava et al., 2016). The most prominent finding in the neurobiological area is the presence of cortical thinning and reduced gray matter volume in individuals with current suicidal ideation in Schizophrenia (Besther et al., 2016; Girgis, 2020).

### **Psychosocial mechanisms**

Major public and mental health concern is to understand psychosocial aspects that contribute to suicidal ideation in Schizophrenia. One important theory in regard to psychosocial mechanisms are as follows:

**Interpersonal theory of suicide** – Interpersonal theory of suicide was given by Thomas Joiner in 2005 (Joiner, 2005), which implies that when people believe that they are burden to others, don't feel a sense of belongingness and have no meaningful ties with family, friends they experience suicidal ideation more than individuals with good personal and social relations leading to suicidal behavior.

**Sociological model of suicide-** Four types of suicide was given by Emile Durkheim characterized differently by the degree in which people were integrated into and were subject to societal moral restraints.

- **Egoistic suicide: Low integration into society-** People who feel as though life is pointless internalize this feeling into themselves. The low levels of social integration thus lead to suicidal ideation and behavior.



- **Altruistic suicide: High integration into society-** The suicide may be seen as a sacrifice made for the benefit of the community. An individual who commits such type of suicide is the one whose sense of self is secondary to group or community.
- **Anomic suicide: Low regulation by society-** Someone resorts to suicide as a way to deal with a predicament that they cannot handle. As a result of fast societal change, the pre-existing standards cannot govern the behavior of individual is described as “anomie” by Durkheim. The person has to handle change all by himself without any societal support.
- **Fatalistic suicide: High regulation by society-** The person believes that there is no point of living because his life is and will be very limited by societal circumstances.

## Cognitive mechanisms

A known cognitive feature in suicidal ideation and behavior in Schizophrenia is working memory as well as inverse relationship with cognitive inhibition (Kelip et al., 2013; Richard et al., 2013; Richard et al., 2014). Working memory is essential for cognitive flexibility and is an important factor for social interactions. Poor social skills can lead to difficulty in day-to-day life, school, and job, which directly links to high suicidal ideation (Coope et al., 2015). Executive functions are linked to issues with goal-directed behavior, and plays an important role in acting upon suicidal ideations in Schizophrenia (Verma et al., 2016).

## Intervention and prevention strategies related to suicidal ideation among schizophrenia

### Pharmacological methods

When Schizophrenia is diagnosed and treated at its inception, the chance of recovery is the highest. Schizophrenia can be managed effectively with proper management techniques and due care. The hallucinations and delusions can be treated effectively with most antipsychotic that blocks dopamine receptors, while others can deal with negative symptoms as well. The common antipsychotic drugs used are clozapine and chlorpromazine. Chlorpromazine adherence is more than that of clozapine. As compared to another antipsychotic known as risperidone, clozapine's has more retention rate in patients. For reducing negative symptoms of Schizophrenia, clozapine is much superior to risperidone. It was suggested that to reduce suicidal ideation in Schizophrenia with chronic illness, administration of clozapine is very



useful. There is a three-fold reduction of suicidal behavior with clozapine (Hennen & Baldessarini, 2005; Ganguly et al., 2018). Use of antidepressant like fluoxetine and antipsychotic like clozapine are few approaches to reduce suicidal behavior. Suicidal ideation and behavior can be reduced by taking both antidepressant and antipsychotic together, and reasonable pharmacological management is crucial for lowering suicidal risk (DeSousa et al., 2020).

### **Psychotherapeutic methods**

The most commonly used therapies for dealing suicidal ideation and behavior in Schizophrenia are Cognitive Behavior Therapy and Dialectical Behavior Therapy.

#### **Cognitive Behavior Therapy (CBT)-**

CBT helps to become one aware of the relationship of their thoughts and emotions, and how it impacts their behavior. The ability to recognize and deal with problematic thought patterns and behavior can be understood through CBT. Along with CBT, Cognitive Therapy for Suicide Prevention (CT-SP) can be used in reducing suicidal behavior in Schizophrenia. Certain strategies used in CT-SP are activity monitoring and scheduling, cognitive restructuring, problem solving abilities and coping cards (Brown et al., 2005; Meltzer et al., 2003).

#### **Dialectical Behavior Therapy (DBT)-**

DBT is known to be an evidence based therapy for helping in decreasing the life-threatening behavior such as suicide. The four basic constructs of DBT are mindfulness, distress tolerance, emotional regulation and interpersonal effectiveness. DBT helps enhance coping mechanisms related to distressing thought patterns in individuals with schizophrenia and regulating as well as managing their emotions that can reduce the risk of suicidal behavior (Lawlor et al., 2022).

### **Psycho-social methods**

#### **Family involvement-**

Strengthening support system through involvement of caregivers, family members is necessary as it will lead to better interpersonal relations and increases individuals help





seeking behavior serving as protective factors for suicidal ideation and behavior.

### **Coping skills training-**

It is a useful technique for enhancing navigation through everyday stressors and challenges by working on communication skills, conflict resolution, problem solving and help seeking behavior in collaboration with factors that lead one towards suicidal ideation.

### **Continuity of care-**

It is important to keep in mind additional services after acute treatment or discharge from hospital such as helping them rehabilitate in society. As it will increase treatment adherence, motivation for therapy, prevention from relapse of symptoms which in turn will prevent suicidal ideation as well as behavior.

### **Conclusion**

This research paper on the conceptual aspects of suicidal ideation in schizophrenia highlights the complex nature of this phenomenon with context of the disorder. It emphasizes on the significant impact of symptoms such as hallucinations and delusions on the emergence and persistence of suicidal ideation. It also underscores the role of psychological and psychosocial factors in increasing the risk of suicidal ideation among individual with schizophrenia. By consolidating theoretical insights, it informs about the development of targeted interventions and preventive measures that are tailored to address specific needs of individuals with schizophrenia who are at risk of suicidal ideation.



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