



A Review of Schizophrenia

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ABSTRACT

Schizophrenia is a chronic psychiatric disorder. "Eugen Bleuler" first used the phrase "Schizophrenia" in 1908. It mainly affects the person's ability to think clearly and control emotions. Schizophrenia affects 1% of adults worldwide. Men are more likely to be diagnosed and have an earlier onset than women. The exact cause of Schizophrenia is unknown, and it may be due to genetics, the imbalance between the neurotransmitters, stress, pregnancy, or birth-related factors. Signs and symptoms usually involve positive and negative symptoms. Positive symptoms include hallucinations, delusions, and disorganized speech. Negative symptoms include a lack of ability, interest in everyday activities, and social withdrawal. According to ICD-10, the diagnosis of Schizophrenia, a person must show at least two of the following symptoms for a month such as delusions, hallucinations, disorganized speech, and hyperactive behaviour. Schizophrenia is usually treated with antipsychotics for the symptoms of an acute schizophrenic episode. Other therapies include cognitive behavioural therapy, psychoeducation, and family therapy.



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INTRODUCTION

Schizophrenia is a long-term psychiatric condition with various symptoms, including cognitive, affective, and negative symptoms that cause abnormalities in the brain. Men are more prone to get Schizophrenia than women, which is a frequent psychotic condition. Initially, in 1896 Emil Kraepelin referred to Schizophrenia as dementia praecox, which is Latin for "madness," and in

1908, Eugen Bleuler (1857–1939) first used the term "schizophrenia." Schizophrenia patients tend to withdraw from society, act irrationally out of fear or confusion, and are more prone to attempt suicide, especially during psychotic episodes and the first six months of therapy [1].

Definition

Schizophrenia is a persistent mental illness that primarily affects a person's capacity to think clearly and emotions, feelings, and conduct. Continuous or relapsing psychotic episodes are what give it its name.

Epidemiology

1. Twenty-two million individuals worldwide are thought to be affected by Schizophrenia, according to the World Health Organization (WHO) in 2000.
2. The true worth of those who have this condition is difficult to assess [2].

3. Incidence and prevalence
4. The prevalence ranges between 0.5% and 2%.
5. Teenage or manhood is the typical onset of symptoms [3].

Who is impacted?

1. Schizophrenia affects 1.5% of the population and is most prevalent in those between 25 and 45.
2. The average lifespan of those who have this form of Schizophrenia is 10–12 years.
3. Schizophrenia is more likely to affect people in Western Europe.
4. According to several experts, Schizophrenia is accompanied by hostility, depression, and hyperactivity.
5. Moreover, they cooperate with other psychotic illnesses. [4]

Types

Paranoid Schizophrenia

1. Delusions or recurrent auditory hallucinations characterize it and are frequently observed in most patients with Schizophrenia and other psychotic diseases.
2. Other signs of paranoid Schizophrenia include disorganized speech, a face without emotion, a state of confusion, or unusual behaviour like smiling, laughing, or talking to oneself.
3. Speech and emotional impairment are every day in this form of Schizophrenia.
4. Anger and anxiety are common in those with the paranoid type. [5]

Catatonic Schizophrenia

1. This illness results in bizarre physical movements, behaviours, and social withdrawal.
2. Furthermore, bipolar disorder and mood disorder, this sort of Schizophrenia.
3. It is an uncommon kind of Schizophrenia that only occasionally affects people.
4. A person with a catatonic type may be rigid, repetitive, and immobile. They may also make odd postural and grimacing motions on their own.

Disorganized Schizophrenia

1. It is also known as hebephrenic Schizophrenia and is most frequently observed in people between 15 and 25.
2. Its defining characteristics are disorganized speech, strange conduct, and ideas accompanied by momentary hallucinations and delusions.
3. Some symptoms of Schizophrenia include a lack of facial expression, a low voice tone, difficulty interacting with people, memory lapses, and mood swings.

Undifferentiated Schizophrenia

1. This type of Schizophrenia is reserved for those who do not fit any of the three categories listed above.
2. Severe delusions, hallucinations, and disorganized speech mark it.
3. A person with this type of Schizophrenia will also experience paranoid and catatonic Schizophrenia.

Residual Schizophrenia

1. Residual Schizophrenia is characterized by undesirable symptoms such as apathy, poor memory, loss of attention, and poor hygiene.
2. The person with this type of Schizophrenia has a history of psychotic episodes but is not now suffering hallucinations or delusions.
3. Symptoms include weariness, lack of emotion, speaking less, and lack of motivation.

Aetiology

No one knows the cause of Schizophrenia. It may be due to the following:

1. Genetic factors
2. Chemical imbalances
3. Physiological factors
4. Environmental factors

Genetic factors

1. Schizophrenia frequently runs in families, according to genetic causes.

2. There isn't a single gene that causes Schizophrenia.
3. If both patients have been diagnosed with Schizophrenia, there is a 50% probability that the patient will also develop Schizophrenia.
4. 40-60% chance if an identical twin has been given a schizophrenia diagnosis.

Chemical imbalances

An imbalance in the levels of two neurotransmitters may contribute to Schizophrenia. They are as follows:

1. Dopamine
 2. Serotonin
1. The symptoms of Schizophrenia are caused by abnormal dopamine levels in the mesolimbic and prefrontal regions.
 2. Schizophrenia's adverse symptoms are caused by low dopamine activity in the prefrontal brain region.
 3. Reduced levels of serotonin may cause depression and memory loss. Excessive dopamine activity in the mesolimbic area is what produces the symptoms of Schizophrenia.

Physiological factors

The main physiological factors of Schizophrenia such as:

1. Emotional
2. Sexual abuse
3. Losing job
4. End of relationship
5. Losing someone important to us

Environmental factors

Environmental factors such as:

1. Pregnancy and birth complications
2. Childhood trauma
3. Social isolation
4. Substance abuse

Pregnancy and birth complications

Those who develop Schizophrenia are more likely to have birth or prenatal difficulties like

1. Low birth weight
2. Asphyxia
3. Early delivery

Childhood trauma

Childhood trauma is a severe form of stress that contributes to the development of Schizophrenia and is linked to memory loss, difficulty acquiring verbal language, and concentration deficits. Depressive and positive symptoms are primarily brought on by childhood trauma.

Social isolation

Most of the research has found that a person's risk of getting Schizophrenia, depression, and anxiety rises when socially isolated.

Substance abuse

In vulnerable patients, certain drugs like cocaine, LSD, amphetamines, and cannabis can cause schizophrenia symptoms to appear.

Risk Factors

1. Social isolation
2. Age
3. Sex
4. Neonatal hypoxia
5. Using drugs such as cannabis, LSD
6. Exposure to infections
7. Birth complications
8. Malnutrition
9. Family history
10. Childhood trauma Figure 1.



Figure 1: Pathophysiology of Schizophrenia

Dopaminergic Activity

Dysfunction in dopaminergic activity in the mesocortical and mesolimbic pathways leads to

Table 1: Positive, Negative & Cognitive Symptoms of Schizophrenia

Positive symptoms	Negative symptoms	Cognitive Symptoms
Hallucinations	Alogia	Disorganized thinking
Delusions	Social withdrawal	Poor concentration
Thought disorders	Anhedonia	Poor memory
Movement disorders	A motivation	Difficulty in expressing ideas
combativeness	apathy	Difficulty in integrating thoughts and feelings

Table 2: First-line and second-line medications

S.NO	DRUG NAME	DOSE	FREQ AGENCY	MECHANISM OF ACTION	SIDE EFFECTS
1.	Chlorpromazine	200-800mg	OD	Blocks postsynaptic mesolimbic dopaminergic receptors.	Blurred vision
2.	Loxapine	10-50mg	BD	blocks postsynaptic mesolimbic D1 and D2 receptors.	Agitation and ECG changes
3.	Haloperidol	0.5-2mg	BD	Blocks postsynaptic dopaminergic D2 receptors	Dystonia, parkinsonism
4.	Clozapine	12.5mg	OD/BD	Antagonism of D2 and 5HT-2A receptors	Drowsiness, convulsions
5.	Risperidone	2-3 mg	BD/OD	5HT-2 and D2 receptor antagonist	EPS, hyperprolactinemia
6.	olanzapine	5-10 mg	OD	Antagonism of 5HT-2A and C, D1 receptors	Weight gain
7.	Quetiapine	25 -50 mg	BD	Antagonism of D2 and 5HT-2	Agitation, xerostomia
8.	Amisulpride	400-800 mg	OD	Blocks dopamine receptors in the limbic system.	Insomnia and weight gain
9.	Aripiprazole	10-15 mg	OD	Agonist of D2 and 5HT-1A receptors and antagonist of 5HT-2A receptors.	Akathisia, headache

1. An increase in dopaminergic activity in the mesolimbic path leads to positive symptoms.
2. Decreased dopaminergic activity in mesocortical ways leads to negative and cognitive symptoms.
2. Delusion of Grandeur: People may believe they have more power and talent.
3. Delusion of Love: The person may believe they are in love with them.

Anatomical Abnormalities

Most of the studies show that schizophrenia patients may have the following:-

1. Decreased whole brain volume.
2. Increased ventricular volume Table 1.

Positive symptoms

Positive symptoms mainly affect behaviour or thoughts.

1. Hallucinations
2. Delusions
3. Disorganized speech
4. Difficulty in concentration

Hallucinations

Hallucination is a misbelief of objects involving senses such as sight, sound, smell, taste, and touch. [6]

Different types of hallucinations include below.

1. Auditory: A most common type of hallucination. Although people may think they hear voices, music, or nature sounds, these sounds are unnatural.
2. Visual Hallucinations: They will see objects, people, or lights that are not real.
3. Tactile Hallucinations: They experience a sense of touch or movement on their skin.
4. Olfactory Hallucinations: A person smells something that is not real.
5. Gustatory Hallucinations: This type of hallucination cause unpleasant tastes.

Delusions

Delusions are beliefs that are not true.

Types of Delusions

1. Delusion of Persecution: The individual may think they are a target of an individual or group of individuals.

Negative Symptoms

1. Alogia (inability to speak)
2. Violation (lack of motivation)
3. Asociality (reduced social interaction)
4. Anhedonia (inability to experience pleasure)
5. Flat affect
6. Extreme isolation. [6]

Cognitive Symptoms

1. Memory issues
2. Impaired sensory perception

Complications

1. Anxiety disorders
2. Obsessive-compulsive disorder
3. Depression
4. Social isolation
5. Aggressive behaviour
6. Financial problems
7. History of medical problems
8. Suicidal attempts [20]

Diagnosis

The DSM-V states that Schizophrenia must exhibit at least two of five symptoms to be diagnosed.

1. Delusions
2. Disorganized speech
3. Hallucinations
4. Unusual movements
5. Negative symptoms

Other Tests

Test and Screenings

1. Complete blood picture

2. Imaging studies such as MRI & CT scans.

Physiological Evolutions

A psychiatrist will observe the event, assess the patient's mental state, and enquire about their mood, thoughts, hallucinations, and drug use. [7]

Treatment

Non-Pharmacological Treatment

1. Cognitive behavioural therapy
2. Psychoeducation
3. Family therapy
4. Social skills training [8]Table 2.

CONCLUSION

Our research leads us to conclude that etiological variables, primarily present in the 30- to 45-year-old age range, are the leading causes of Schizophrenia. Newer antipsychotics can treat this, as listed above.

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Conflict of interest

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