Schizophrenia

A Biological Perspective

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DEFINITION: A severe mental health condition that affects thoughts, behaviors, and feelings.
Historical Roots

Ancient Times
In ancient civilization such as Egypt, Greece, and Rome, descriptions of individuals exhibiting symptoms that could be interpreted as psychotic or having a mental disorder.

Middle Ages and Renaissance
Middle Ages: Many mental illnesses were attributed to supernatural causes.
Renaissance: A shift in understanding mental illness, an effort to classify these abnormal behaviors.

18th and 19th Centuries
Enlightenment Era, brought a more scientific approach to understanding human behavior and mental health disorders.
Philippe Pinel Advocating for humane treatment
Development of psychology gained momentum

Early 20th Century
Significant advancements in research
Emil Kraepelin making influential contributions
Eugene Bleuler founding the name

20th Century & Beyond
Development of antipsychotic medications which treated it
Research expanding
Diagnosing Schizophrenia: The DSM-5 Criteria

• Widely used guide for mental health professionals for a diagnosis
• Schizophrenia diagnosis is based on specific criteria outlined in the DSM-5, including the presence of certain symptoms over a defined period.
Biology of Schizophrenia

- Genetic factors: Overview of genetic predisposition
- Neurochemical imbalances
- Dopamine hypothesis: 0:39-1:59
- Neurotransmitters: Glutamate and serotonin
Symptoms

- Positive: Thinking/behavior
- Negative: Emotional expression or speech
- Cognitive: Impact thinking processes
Neurobiology of Symptoms
Impact on Brain Structure
Common structural changes:
- Enlarged cerebral ventricles
- Gray matter changes increase/decrease
- Smaller hippocampus
- Abnormal thalamus changes

Neuroimaging studies
- Play a crucial role in our understanding of schizophrenia by providing insights into the structural, functional, and biochemical aspects of the brain.
Influence of Genetics

- Research has shown schizophrenia has a strong genetic component.
- Scientists have identified specific genes associated with an increased risk of schizophrenia.
- Recent research indicates that schizophrenia is a polygenic disorder influenced by hundreds or possibly thousands of genes.
- In addition to common genetic variants, rare copy number variants and gene-disrupting variants have been identified, but they have a smaller role in explaining the overall genetic heritability of schizophrenia.
- Overall, the evidence suggests that both common and rare genetic factors contribute to schizophrenia.
Environmental Factors/Triggers

- The Impact of Stress: Triggers onset, worsens symptoms
- Prenatal and Perinatal: Maternal stress, malnutrition during pregnancy
- Birth Complications
- Childhood Adversities: Early trauma or abuse, parental loss or separation
- Substance Abuse: Especially cannabis
- Social Factors: Social isolation, sociocultural factors
- Family Dynamics/Environment
Advances in Research

- Emerging technologies and their contributions
- Genome studies
- Cutting-edge technologies, such as advanced imaging and sequencing techniques, are enabling researchers to explore the brain's intricacies in unprecedented detail
- Continuously Advancing
Treatment Approaches

- **Antipsychotic Medications**: They play a central role in managing symptoms.
- **Psychotherapy**: Counseling and therapy help individuals cope with their challenges enduring schizophrenia.
- **Hospitalization & Community Support**: Importance of support in fostering recovery and social integration.

**New Therapeutic Approaches**: Most notable

- **Cognitive Remediation Therapy (CRT)**: Enhances cognitive skills, potential to improve daily functioning.
- **VR Therapy**: Being explored as a tool for exposure therapy and social skills training. Provides a controlled environment to practice real world interactions.
Personal & Social Impact

Challenges Faced by Individuals
Cognitive Impairments
Quality of Life
Social Impact
Stigma & Misconceptions
Isolation & Social Withdrawal
RESOURCES

- https://www.drkapilsharma.in/blog/schizophrenia-symptoms-causes-and-treatments/
- https://slidetodoc.com/the-science-of-schizophrenia-dr-stephen-m-stahl/
- https://youtu.be/WT8Sk4cFkHs
- https://www.researchgate.net/figure/Identification-of-Tissue-Density-changes_fig3_309193591
- https://www.healthline.com/health/schizophrenia/suicide-in-schizophrenia#suicide-risk
- https://go-gale-com.ez2.maricopa.edu/ps/i.do?p=AONE&u=mcc_smtm&id=GALE%7CA242373083&v=2.1&it=r&sid=summon&aty=ip