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Schizophrenia

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My Credentials

- Associate of Science Degree in Nursing from the University of South Dakota
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- Psychiatric-Mental Health Nurse Practitioner, Board Certified

Today's Lecture

- Schizophrenia is often misunderstood and stigmatized
- Due to it's rarity, many people (including clinical staff) may be unfamiliar with this disease
- This lecture will provide a brief overview of schizophrenia and include a review of case studies
- Goal is to help shed more light on this illness, better equip clinical staff to interact with those impacted by the disorder

Let Us Begin!

- Since schizophrenia can seem so difficult to understand, I would like to begin this lecture by quoting a patient with schizophrenia. The following slide illuminates what schizophrenia means to that person….

Quote from Someone with Schizophrenia

"What then does schizophrenia mean to me? It means fatigue and confusion, it means trying to separate every experience into the real and then unreal and not sometimes being aware of where the edges overlap. It means trying to think straight when there is a maze of experiences getting in the way […] and knowing that your ultimate destruction is never far away."

(Torrey, 2006, p. 1)

What is Schizophrenia?

- Etymology
  - Greek “Skhizein”… To Split
  - Greek “Phrēn” … Mind
- Schizophrenia is a brain disorder that affects how people think, feel, and perceive; with hallmark characteristics of hallucinations and delusions.

Image Citation: www.talkspace.com/blog/2017/08/what-is-schizophrenia/

Global Impact

"Schizophrenia is among the most disabling and economically catastrophic medical disorders, ranked by the World Health Organization as one of the top ten illnesses contributing to the burden of disease."

(Frankenburg, 2018)

Schizophrenia by the Numbers

- International prevalence of schizophrenia is 1%
- Incidence (# of new cases) is 1.5 per 10,000 people
- Usual age of onset is during adolescence
  - For men, modal onset is between 18-25 years of age
  - For women, modal onset is between 25-35 years of age
  - Childhood and late-life onset are possible, but rare

Schizophrenia by the Numbers

- Ratio of men to women is 1.4:1
- Higher suicide rate than general population
  - 5% of patients with schizophrenia will complete suicide
  - Of all completed suicides, about 10% are among people with schizophrenia

What Causes Schizophrenia?

- "Although the pathogenesis of the disorder is unknown, it is almost certain that schizophrenia represents a syndrome comprised of multiple diseases that present with similar signs and symptoms."

(Fischer & Buchanan, 2018)

Why Does This Happen?

What Causes Schizophrenia?

- Genetics
  - Tends to run in families
  - No single gene responsible
  - More likely that a combination of genes are involved
    - Having these genes doesn't necessarily mean schizophrenia will develop
- Neurotransmitters
  - Dopamine
  - Glutamate
  - GABA
  - Serotonin
  - Acetylcholine

Source(s): 5, 8, 18

What Causes Schizophrenia?

Further Neurotransmitter Information

- Dopamine
  - Hallucinations and delusions are the result of increased subcortical release of dopamine, which augments D2 receptor activation
  - Anhedonia, lack of motivation, and poverty of speech are the result of reduced D1 receptor activation in the prefrontal cortex
  - Alterations in D3 receptors might be involved in negative symptoms
- Glutamate and GABA
  - Glutamate and GABA regulate dopamine activity
- Serotonin
  - Dopamine neurons in the midbrain release serotonin
- Acetylcholine
  - GABA interacts with acetylcholine; constraining its excitatory contribution to cholinergic interneurons
  - Dopamine also interacts with acetylcholine

What Causes Schizophrenia?

- Brain Development
  - Abnormal cortex development
  - Cortical brain tissue reduces with development of psychosis

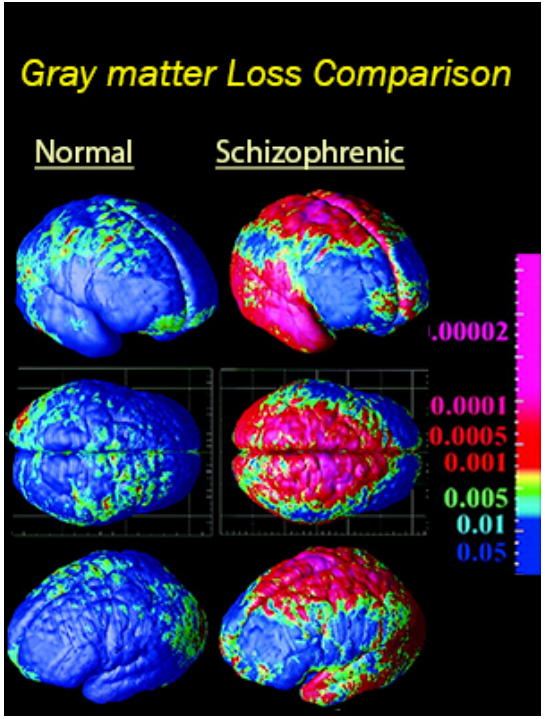

Image Citation: https://psychcentral.com/news/2014/09/16/new-study-traces-abnormal-brain-development-in-schizophrenia/74941.html

Source(s): 6, 18, 21

What Causes Schizophrenia?

- Environmental Factors
  - Smoking during pregnancy
  - Obstetrical complications can increase the risk of development of schizophrenia two-fold
    - Hemorrhage, Preterm Labor, Blood-Group Incompatibilities, Fetal Hypoxia, Maternal Infection
  - Inflammation
    - Some autoimmune disorders have been associated with schizophrenia
  - Cannabis Use

*These a just a few of potential environmental factors

What Does Schizophrenia Look Like?

Onset of Schizophrenia

Image Citation: https://pixabay.com/en/desperate-sad-depressed-feet-hands-2293377/

- Prodromal period
- Can be difficult to diagnosis in teens; symptoms may seem like common adolescent behavior
  - Change of Friends
  - Drop in Grades
  - Sleep Problems
  - Irritability

Onset of Schizophrenia

- Other early signs of schizophrenia include:
  - Isolating oneself (withdrawing from others)
  - Increase in unusual thoughts and suspicions
- TIP: Pay particular attention to these symptoms if the adolescent has a family history of psychosis!
  - "Schizophrenia occurs at roughly 10% of people who have a first degree relative with the disorder, such as a parent or sibling."

(National Alliance on Mental Illness [NAMI], n.d.)

General Overview of Diagnostic Criteria

- (+) 2 of the following symptoms
  - Delusions
  - Hallucinations
  - Disorganized Speech (Derailment, Incoherence)
  - Grossly disorganized or catatonic behavior
  - Negative Symptoms (i.e. diminished emotional expression)
- Level of functioning in work, interpersonal relations, or self-care is drastically decreased
- Signs of disturbance persist for at least 6 months (must include at least 1 month of symptoms; or less if successfully treated)

Image Citation: https://pixabay.com/en/mental-health-mental-illness-women-1420801/

CLARIFICATION: Positive vs. Negative Symptoms

- Negative Symptoms
  - Flat affect
  - Reduced feelings of pleasure
  - Difficulty beginning and sustaining activities
  - Reduced speaking
- Positive Symptoms
  - Hallucinations
  - Delusions
  - Thought disorders (unusual or dysfunctional ways of thinking)
  - Movement disorders (agitated body movements)

Disorganized Behavior

- When you think of schizophrenia, you often think of hallucinations and delusions
- However, disorganization (conceptual disorganization, bizarre behavior, poor attention, inappropriate affect, etc.) is very impairing
- Disorganization is MORE socially impairing than hallucinations and delusions
- Disorganization correlates with deficits in attention, reasoning, problem solving, processing speed, and IQ

What Can Be Done?

Treatment Options

Image Citation: https://pixabay.com/en/medical-appointment-doctor-563427/

- No cure
- **LIFELONG** treatment
- Treatment may include medications, therapy, and psychosocial support.

Medications

- Antipsychotics
  - First Generation vs. Second Generation
  - Particularly helpful for hallucinations and delusions
- Antidepressants
  - Adjunct treatment for symptoms of depression
- Anticonvulsants
  - Often used in psychiatry for mood
  - Can be adjunct to antipsychotic treatment; lessens severity of symptoms of schizophrenia

Source(s): 12, 13, 17, 19

First vs. Second Generation Antipsychotics

- First Generation, aka Typical Antipsychotics
  - Primarily treat positive symptoms (hallucinations, delusions)
  - High potency first generation antipsychotics have higher affinity for dopamine receptors; this can lead to greater side effects
- Second Generation, aka Atypical Antipsychotics
  - Generally have lower affinity for dopamine receptors; and also block serotonin receptors
  - May lower risk of side effects
  - Effective at treating both positive and negative symptoms of schizophrenia

Therapy

- Cognitive Behavioral Therapy
  - "(CBT) is an effective treatment for some people with affective disorders. With more serious conditions, including those with psychosis, additional cognitive therapy is added to basic CBT (CBTp). CBTp helps people develop coping strategies for persistent symptoms that do not respond to medicine." (NAMI, n.d.)
- Supportive Therapy
  - "Supportive psychotherapy is used to help a person process his experience and to support him in coping while living with schizophrenia. It is not designed to uncover childhood experiences or activate traumatic experiences, but is rather focused on the here and now" (NAMI, n.d.).
- Cognitive Enhancement Therapy
  - "Cognitive Enhancement Therapy (CET) works to promote cognitive functioning and confidence in one's cognitive ability. CET involves a combination of computer based brain training and group sessions. This is an active area of research in the field at this time" (NAMI, n.d.).

Psychosocial Treatments

- Psychosocial treatments help people compensate for barriers caused by their disorder.
- Assertive Community Treatment provides individualized services directly to people with mental illness; including helping with medication compliance and addressing issues proactively.
- Peer Support Groups help improve social skills.

Healthy Lifestyle is Crucial

- Manage Stress – Stress can trigger psychosis and worsen symptoms
- Sleep – Poor sleep weakens the immune system and exacerbates symptoms of mental illness
- Avoid Alcohol and Drugs – Substance abuse affects medications and worsen symptoms

Source(s): 16, 17

Clinical Pearl: Smoking & Schizophrenia

- People with mental illness use drugs to self-medicate or to relieve medication side effects. This drug use includes smoking cigarettes.
- Approximately 70%-80% of patients with schizophrenia smoke; some studies indicate higher numbers
- One theory is that nicotine is a type of self-medication; nicotine may improve negative symptoms of schizophrenia
- Nicotine administration enhances cognitive performance; may be seen as beneficial to patients suffering with cognitive symptoms of schizophrenia
- Some patients (17%) reported that smoking improved psychotic symptoms; however, in general, patients report they continue smoking due to addiction, to relax, or to calm down

Source(s): 14, 28

Healthy Lifestyle (Continued)

- Maintain Connections – A supportive family and group of friends can have a very positive impact

Source(s): 16, 17

Helping Someone with Schizophrenia

Image Citation: https://www.helpguide.org/articles/mental-disorders/helping-someone-with-schizophrenia.htm

- Educate yourself
- Reduce Stress
- Set realistic expectations
- Empower your loved one

(Smith, Robinson, & Segal, 2018)

Warning Signs of Relapse

- Insomnia
- Social Withdrawal
- Poor Hygiene
- Increasing Paranoia
- Hostility
- Confusing or Nonsensical Speech
- Strange Disappearances
- Hallucinations

Image Citation: https://pixabay.com/en/mental-health-cranium-head-human-3350779/

Related or Similar Disorders

Schizoaffective Disorder

- Same symptoms of schizophrenia (delusions, hallucinations, disorganized speech, grossly disorganized behavior, or negative symptoms)
- Also includes presence of manic or depressive syndrome that is **not** relative to the duration of psychotic features
  - Do not confuse with mood disorder with psychotic features

Schizophreniform Disorder

- Characterized by the same active phase symptoms of schizophrenia, but only lasts between 1 and 6 months
- No prodromal or residual phase features of social or occupational impairment

Source(s): 24

Other Similar Disorders

- Brief Psychotic Disorders: Lasts between 1 day and 1 month; patient returns to normal level of functioning
- Delusional Disorder
- Substance/Medication-Induced Psychotic Disorder

Other Similar Disorders (Continued)

- Psychotic Disorder Due to Another Medical Condition
  - Brain diseases, such as Parkinson's or Huntington's disease
  - Brain tumors or cysts
  - Dementia (including Alzheimer's)
  - HIV and other infections that affect the brain
  - Some prescription drug use; such as steroids and stimulants
  - Some types of epilepsy
  - Stroke
- Psychosis may also be present in some people with bipolar disorder, severe depression, or some personality disorders

Source(s): 15, 24

Prognosis for the Person with Schizophrenia

Prognosis

- Varies by patient, circumstances
- Generally poor prognosis
- Even with treatment, symptoms often persist
- 25% - 33% of patients are treatment resistant
- Significant percentage have lifelong disability
- Few patients can function independently between acute episodes

Case Study 1

From Case Files Psychiatry, Fifth Edition (Lange Case Files)

Case Study Scenario

- 15-year-old girl; she had argued with a friend at a party, left angry, and then attempted suicide
- Several-month history of irritability, worsening performance in school, poor sleep, anhedonia, anergia, and isolation

Case Study Scenario

- Hospitalization discharge indicates MDD; started Prozac
- Patient presents for follow up 2 weeks after her 3-day hospitalization
- She reports no problems, dismisses her attempt as childish, says hospital staff was lovely and helped solve all her problems; she wants to study psychiatry in the future

Case Study Scenario

- Parents report she is sleeping well, and appears to be in a good mood
- Parents are concerned
  - Patient is worried about whether cameras in the doctor's office were recording her
  - Patient believes she is being stalked by several boys at school

What is the most likely diagnosis?

Most Likely Diagnosis

- Schizoaffective Disorder
  - Psychotic symptoms consonant with the acute phase of schizophrenia
  - Psychotic symptoms are accompanied by prominent mood symptoms during part of the illness
  - At other points in the illness, psychotic symptoms are unopposed (no mood symptoms present)

Plan

- Does the patient need to be hospitalized?
  - No
- Best treatment
  - Antipsychotic agent should be tried initially
  - If it is ineffective alone, an antidepressant should also be administered

Considerations

- Patient's several-month history of depressive symptoms have remitted with fluoxetine
- However, there is evidence of a paranoid delusion
- Patient should be asked about manic symptoms; would change the schizoaffective disorder subtype from depressive type to bipolar type
  - affects pharmacological treatment choices
  - Bipolar type may need a mood stabilizer

Case Study 2

From a Case Report in the Journal L'Encéphale

Case Study Scenario

- Female child is 10-years-old; currently hospitalized for a relapse in psychotic symptoms
  - This is her second hospitalization for psychotic symptoms
- Current symptoms include hallucinations, delusions, grossly disorganized behavior, and thought disorder
- She has been taking haloperidol (1st generation/typical antipsychotic)
  - Provided partial remission for a few months; characterized by decrease in delusions, anxiety, and sleep difficulties

Source(s): 4, 10

Patient History

- Onset of symptoms at age 9: auditory hallucinations, visual hallucinations, delusions, grossly disorganized behavior (catatonic rigidity and bizarre postures), anhedonia, affective flattening, alogia
- IQ scores were 74 in verbal subtests; 53 in performance subtests
- Onset of symptoms occurred when mother was hospitalized for diabetes mellitus

Patient History

- Family history of mental illness
  - Mother: Major Depression and other mood disorders
  - Father and Aunt: Schizophrenia
- Developmental History: Prenatal maternal infection, obstetric complications. From age of 3.5; behavioral inhibitions, separation anxiety, difficulties in social adaptation, and language abnormalities (selective mutism)

Case Study Scenario

What is the most likely diagnosis?

Most Likely Diagnosis

- Childhood-onset schizophrenia
  - Rare; prevalence is about 50 times lower than adulthood
- Note the predisposing factors to schizophrenia
  - Father with schizophrenia (schizophrenia occurs at about 10% of people with first degree relative)
  - Prenatal Maternal Infection and Obstetrical complications
- Note the stressful life events correlating with exacerbations in positive symptoms

Source(s): 4, 8, 17

Initial Treatment Trials

- Typical antipsychotic, haloperidol was initially tried; but failed to adequate treatment
- During the course of her current hospitalization, amisulpride (atypical antipsychotic; used in Europe; not FDA approved in the United States) was trialed for several weeks; no significant clinical effect

Source(s): 3, 4, 10

Use of Clozapine

- Due to failure of two previous antipsychotic agents; patient was prescribed clozapine (2nd generation; atypical antipsychotic agent)
  - Clinical Pearl: Clozapine can cause a serious blood condition. Only available through restricted distribution program: Clozapine Risk Evaluation and Mitigation Strategies (REMS) Program
  - Used to treat symptoms of schizophrenia in patients who have not been helped by other medications

Source(s): 2, 4

Treatment Outcome

- Use of clozapine produced clinically significant reductions in hallucinations, reductions in disorganized behaviors, and improvement in cognitive and motor functioning
- Able to leave hospital and be placed in an educational institute
- Overall successful adaptation; still has some regular exacerbations in delusions in response to stressful life events

Discussion of Childhood-Onset Schizophrenia

- Patients with very early onset have impairments in premorbid language, motor development, and social development
- Studies suggest early developmental abnormalities are associated with poor outcomes in schizophrenia
- Poor outcomes usually reported in childhood-onset schizophrenia; need of long-term pharmacological and behavioral treatments

Thank You!

Contact Ashley.Jansen@Avera.org with questions.
See the following slides for sources.

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