Causes of Schizophrenia

Psychology 311
Abnormal Psychology

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Causes of Schizophrenia

- Actual cause is not known
- Appears to be an interaction between vulnerabilities and environmental stress

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Many Different Hypotheses

- Genetics
- Prenatal Factors
- Dopamine Hypothesis
- Schizophrenic Spectrum Hypothesis
- Diathesis Stress Model

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Genetic Contributions

- The closer the relative, the higher the probability for schizophrenic
  - Highly probable schizophrenia is genetic
- Is probably not caused by one gene
  - Would show in all monozygotic twin studies.
  - Is probably caused by the combination of several genes.
- Not totally sure which ones
  - Has been identified with genes on Chromosome 22 and Chromosome 6.

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Prenatal Factors Hypothesis

- Individuals exposed to a Flu virus in second trimester had higher rates of schizophrenia than a control group not exposed.
- High stress shown in widowed Finnish women
  - When Russia invaded Finland in 1959, women had higher schizophrenia rates
- Birth complications correlated with schizophrenia
  - Suggests brain damage

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Neurodevelopmental Model

- Contends some abnormality may occur in prenatal neurological development
- Example
  - Second semester
  - Cells migrate from original position to distant locations where they establish connections
  - Schizophrenics' brains are different than "Normals"
    - More cells were in deeper layers of the cortex than the surface
    - Indicates neurons did not migrate as far as they should have
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Prenatal Development Abnormalities

• Reflected in
  • Minor physical anomalies
    • M alformed ears
    • Unusual spacing of tear ducts
    • Arched Palate of the mouth
  • Neuromotor anomalies
    • Many unusual expressions
    • May hold hands in unusual manner

Dopamine Hypothesis

• Contends:
  • Positive symptoms occur due to increased levels of Dopamine.
  • Get increased stimulation of Dopaminergic synapses
  • Excessive receptor activation is correlated with hallucinations

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Support for Hypothesis

• Drugs that increase dopamine levels (Amphetamine, Cocaine) can produce positive symptoms of schizophrenia

• Drugs that block DA receptors also reverse schizophrenia
  • Can reduce positive symptoms in 80% of patients

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Schizophrenic Spectrum Disorder Hypothesis

• Contends schizophrenic patients often have relatives that are eccentric or have bizarre behaviors
  • May be a genetic inheritance
  • Combination of
    • emotional responses
    • cognitive behavior
    • some personality disorders

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Example – Schizotypal Personality Disorder

• Seems closest genetically to schizophrenia
• Behaviors are milder forms of schizophrenia
  • Odd speech patterns
  • Social dysfunction
  • Aloofness
  • Odd communication
  • Suspiciousness

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Families

• Paranoid personality disorder
• Schizoid personality disorder
• Others
• All appear in families with schizophrenia
• Gene on chromosome 8 is linked to the spectrum of disorders and schizophrenia
Family Studies are Useful

- Allows you to look for schizophrenia or other disorders
- Make a family tree of disorders
  - Can get an idea of the full spectrum of disorders

Associative Mating

- Tendency to choose a mate that is genetically similar than would be expected by chance
- Result
  - Children from these marriages may end up with “double doses” of bad genes

Gottesman (1991)

- Conducted five studies of associative mating
- Risk for children increases 46% vs. 17% with only one parent affected

Twin Studies

- Allow you to control for hereditary factors
- MZ twins
  - Higher concordance rates for schizophrenia
  - Problem only 50% have it
    - Conclusion – Heredity is not enough alone

Examine When Twin Becomes Schizophrenic

- Some studies - 5 years old
- More studies – 13 years old
- Most common age 14 - 16

Adoption Studies

- Is another way to study hereditary factors
- Child is not raised by biological parents
  - Show more schizophrenia
Environmental Factors

- Contends
  - You can have a genetic or biological predisposition
  - Problem, what causes the disorder to express itself

Diathesis Stress Model (Zurbin, 1983)

- Contends the disorder is an interaction of genetic and environmental factors
- Is not a permanent disorder but a permanent vulnerability

Community Factors

- More than 50 studies in US and Europe
  - People with lower SES are diagnosed more frequently with schizophrenia than people in middle or upper SES
  - Why?
    - Two theories
    - Social Selection Theory
    - Increased Stress Theory

Social Selection

- Contends people who cannot make it in “normal” society gradually become lower in SES due to poor coping skills
- May occur across generations
  - Result – A whole class of people become lower SES
  - Model points to flaws in the individual

Increased Stress

- Contends there are flaws in society itself
- Focuses on the amount of stress experienced in different environments
- Conflicting sides
  - Maybe the environment drew in lower functioning individuals than producing lower functioning individuals

Conclusions

- Many models
- Lots of different ideas
- Some evidence form each
  - Not solid for an particular model
  - Each have problems.