
PSY1102

Introduction to Applied Psychology

Class 17

Psychological disorders (continued)

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Agenda for today

1. Schizophrenia
 - a. Types of schizophrenia
 - b. Symptoms of schizophrenia
 - c. Onset and development of schizophrenia
 - d. Understanding schizophrenia
 - e. Schizophrenia: summary
2. Personality disorders
 - a. Antisocial personality disorder
 - b. Understanding antisocial personality disorder
3. Rates of psychological disorders

1. Schizophrenia

What patterns of thinking, perceiving, feeling, and behaving characterise schizophrenia?

- As noted in the textbook, “if depression is the common cold of psychological disorders, schizophrenia is the cancer.”
- The overall incidence of schizophrenia is about 1%, and currently about 24 million people live with it.

1a. Types of schizophrenia

Schizophrenia is not a unitary phenomenon. As listed in Table 14.3, there are 5 subtypes of schizophrenia.

- Paranoid. Preoccupation with delusions or hallucinations, often with themes of persecution or grandiosity.
- Disorganised. Disorganised speech or behaviour, in flat or inappropriate emotion (affect).
- Catatonic. Immobility (or excessive, purposeless movement), extreme negativism, and/or parrot-like repeating of another's speech or movements.
- Undifferentiated. Many and varied symptoms.
- Residual. Withdrawal, after hallucinations and delusions have disappeared.

1a. Types of schizophrenia (continued)

- A patient with positive symptoms may experience hallucinations, may talk in a disordered manner (perhaps with delusions), and may exhibit inappropriate emotions.
- Patients with negative symptoms lack affect (emotion) in their voices, lack expressiveness in their faces, and have mute or rigid bodies.
- Schizophrenia is a cluster of disorders whose symptoms vary, and so the various symptoms could have different causes.

1b. Symptoms of schizophrenia

- Three of the key symptoms of schizophrenia, which we'll consider in turn, include:
 - Disorganised thinking
 - Disturbed perceptions
 - Inappropriate emotions and actions

1b. Symptoms: disorganised thinking

- The thinking – or at least the resulting speech pattern – of someone with schizophrenia is fragmented, exhibiting speech fragments connected in time but disconnected logically.
 - “Word salad” may occur, even within a sentence.
- The individual may also exhibit delusions, also known as false beliefs.
- People with paranoid tendencies are especially likely to exhibit delusions of persecution.
- Disorganised thought may come from a problem with selective attention. Selective attention is a perceptual ability to attend to one stimulus while filtering out others, and this capability can be absent in people with schizophrenia.
- Many other cognitive impairments exist with schizophrenia.

1b. Symptoms: disturbed perceptions

What is meant by disturbed perceptions?

- One definition of a hallucination is “sensory experiences without sensory stimulation”. Hallucinations can occur in vision, hearing, taste, or smell.
- In schizophrenia, most hallucinations are auditory, where a disembodied voice is insulting or gives orders.
- Hallucinations not associated with schizophrenia can arise from:
 - Sensory deprivation
 - Drugs
 - Religious meditation
 - Extreme physical conditions (e.g., near-starvation)

www.youtube.com/watch?v=dipFMJckZOM

1b. Symptoms: inappropriate emotions and actions

- The emotions exhibited by someone with schizophrenia may be inappropriate for the situation, such as
 - Laughing at someone's death
 - Unwarranted anger
 - Being out of step with others, such as crying when they laugh
- Alternatively, one might have flat affect or flat emotions.
- Behaviour itself may be inappropriate, including senseless, compulsive actions, such as rocking.
- Finally, catatonia is motionlessness that can last for hours before agitation sets in.
- All of these symptoms make it difficult for people with schizophrenia to hold a job or typical social relationship. With support, some can live a normal life, but not all.

1c. Onset and development of schizophrenia

- Age. Schizophrenia most often arrives as young people are maturing into adulthood.
- Gender. Schizophrenia affects males more than females, arrives at a younger age, and is more severe than in males.
- Other “predictors”. Data from Swedish and Danish males suggest that thin young men who were not breast-fed are more vulnerable than others.
- Suddenness of onset. Sometimes schizophrenia can appear quickly, but in other cases it develops gradually.
- Prognosis. When schizophrenia is slow-developing, with negative symptoms, recovery is doubtful. By contrast, a healthy person who develops acute or reactive schizophrenia (i.e., quickly) typically has positive symptoms and is more likely to respond to drug treatment.

1d. Understanding schizophrenia

What causes schizophrenia?

- Brain abnormalities
 - Dopamine over-activity
 - Abnormal brain activity and anatomy
 - Maternal virus during mid-pregnancy
- Genetic factors
- Psychological factors

1d.1 Brain abnormalities

- Are imbalances in brain biochemistry a cause of schizophrenia?
- We know, for example, that hallucinogens such as LSD cause hallucinations (hence their category) and perceptual distortions.

1d.2 Dopamine over-activity

- At autopsy, the brains of people with schizophrenia have been found to contain as much as a six-fold excess of receptors for dopamine.
- This abundance suggests that there may be excess amounts of dopamine (a neurotransmitter) in the brain, causing signals to be intensified, resulting in hallucinations and paranoia.
- If so, then administration of drugs that block dopamine receptors should reduce symptoms of schizophrenia, and they do so.
- By contrast, drugs that increase dopamine levels (e.g., cocaine and amphetamines) can increase schizophrenia-like symptoms such as over-reaction to irrelevant stimuli.
- Lower levels of glutamate, another neurotransmitter, are also associated with symptoms of schizophrenia.

1d.3 Abnormal brain activity in schizophrenia

- Scans of some people with chronic schizophrenia show abnormal activity in several areas of the brain, such as low activity in the frontal lobes.
- Another tool, the electroencephalogram (EEG), shows a decrease in synchronous neural activity in the frontal lobes. Although the impact of this link is less clear, it could indicate a reduced level of coordinated neural activity.
- PET scans during hallucinations indicate a high activity level in the thalamus, the “relay station” for sensory input on its way to the cerebrum. Also, increased activity has been noted in the amygdala (a limbic structure associated with fear).

1d.3 Abnormal brain anatomy in schizophrenia

- The brain contains ventricles filled with cerebrospinal fluid.
- In schizophrenia, fluid-filled areas of the brain are enlarged, with a corresponding shrinkage of cerebral tissue. Moreover, this result has been found in people who had not yet developed schizophrenia but who would do so – in other words, this variable may have predictive value.
- Areas of reduced size in schizophrenia include the cerebral cortex and the thalamus. Thus, schizophrenia is not linked to one cerebral structure, but several.
- Low birth weight and oxygen deprivation during delivery are risk factors for schizophrenia, and famine during pregnancy may increase the likelihood of schizophrenia for the fetus.

1d.4 Maternal virus during mid-pregnancy

- The textbook identifies several studies that suggest a viral mechanism for schizophrenia. The risk is increased ...
 - For the child if a flu epidemic occurs during the middle 3 months (trimester) of pregnancy;
 - For people born in densely populated areas;
 - For those born in the winter and spring months (5-8% increase);
 - For people born to mothers who had the flu, but only during the second trimester; the risk is doubled to 2%.
- Moreover, the specific months of risk are reversed for the Southern hemisphere.
- Also, blood from women who have a child with schizophrenia contains virus-related antibody levels that are higher than normal.

1d.5 Genetic factors

- Although there seems to be a link between a virus and the second trimester of pregnancy, the vast majority of women who catch the flu during the second trimester have children who do not have schizophrenia.
 - There may be a genetic disposition among some people.
- Also, the likelihood of having schizophrenia increases greatly if one has a close relative with schizophrenia.
 - 10% if a parent or sibling has schizophrenia;
 - Nearly 50% if an identical twin has it, even if reared apart.
- Identical twins sharing a placenta have a 60% chance of having schizophrenia if one does, but only 10% if they have separate placentas. Is the mechanism shared genes, or shared germs?

1d.5 Genetic factors (continued)

- A child adopted by someone who develops schizophrenia rarely develop schizophrenia.
 - The risk is greater if a biological parent has schizophrenia.
- The search for genes related to schizophrenia has focused on genes related to dopamine and other neurotransmitters as well as those for myelin, a fatty substance which coats axons and is involved in neural transmission.
- The search for genetic keys to schizophrenia raises a host of ethical issues, also.

1d.6 Psychological factors

- In the “old days”, mothers who withheld affection were seen as a potential cause of schizophrenia. This notion has long been discredited.
- However, factors cited in the textbook as warning signs include:
 - A mother with severe, long-lasting schizophrenia
 - Birth complications
 - Separation from parents
 - Short attention span and poor muscle coordination
 - Disruptive or withdrawn behaviour
 - Emotional unpredictability
 - Poor peer relations and solo play
- How many of these factors are within the normal range?

1e. Schizophrenia: summary

- Evidence about the origins of schizophrenia include:
 - Genetic factors (e.g., twin studies)
 - Viral link (second trimester of pregnancy)
 - Heightened dopamine levels
 - Larger lacunae (pools) in the brain, and smaller cortex and thalamus
- In terms of psychological factors, there is no “smoking gun”.

2. Personality disorders

What characteristics are typical of personality disorders?

- In some cases, behavioural patterns are so dysfunctional that they get in the way of social functioning, but do not include depression or delusions.
- Personality disorders are disruptive, inflexible, and enduring behaviour patterns that impair one's social functioning. There are different clusters, including:
 - Avoidant personality disorder, where the person is withdrawn and has a fearful sensitivity to rejection, related to anxiety.
 - Schizoid personality disorder, with emotionless disengagement and eccentric behaviour; and
 - Dramatic or impulsive behaviours, such as histrionic personality disorder and narcissistic personality disorder.

2a. Antisocial personality disorder

- Antisocial personality disorder is the most troubling and heavily researched personality disorder.
- Persons with this disorder used to be labelled sociopaths or psychopaths. Typically male, their lack of conscience is evident in the early teens through lying, stealing, fighting, and inappropriate sexual behaviour.
 - About half become antisocial adults who cannot hold a job, have poor parenting and marital skills, and criminal behaviour.
 - These people may become con artists, or worse.
- Aside from the case studies mentioned in the textbook check out *The Stranger Beside Me*, by true-crime author Ann Rule.

2b. Understanding antisocial personality disorder

- Biological relatives of people with antisocial and unemotional tendencies have an increased risk of antisocial behaviour.
- People with these tendencies show little autonomic arousal in the face of aversive events, and have lower levels of stress hormones.
- Young children who are impulsive, uninhibited, low in anxiety, and unconcerned with social rewards can become:
 - aggressive or antisocial adolescents, or
 - athletes or adventurers.
- Without a sense of social responsibility, their behaviour may become criminal.

2b. Understanding antisocial personality disorder

- PET scans of murderers' brains show reduced frontal lobe activity compared to matched “normals”, especially among impulsive murderers.
- Violent repeat offenders have 11% less frontal lobe tissue than normal.
- As shown in Figure 14.12 (p. 630), the combination of childhood poverty (social) and obstetrical complications at birth (biological) produces double the risk of committing crimes relative to either one of these factors.
- Childhood maltreatment and a gene altering neurotransmitter levels together predict antisocial behaviour.

3. Rates of psychological disorders

How many people suffer, or have suffered, from a psychological disorder?

- Who is most vulnerable to psychological disorders?
 - According to NIMH, 26% of adult Americans in any year. In other countries, 16% (Australia) to 31% (Germany).
 - Type of disorder in the US: mood disorder (9.5%), phobia (8.7%), social phobia (6.8%) were the most common.
 - Lowest incidence of prior-year disorders in Shanghai (5%) and highest in the US.
- Poverty shows a strong correlational link to psychological disorders.

3. Rates of psychological disorders (continued)

- When are the disorders likely to occur?
 - Over 75% with any disorder had the first symptoms by age 24.
 - Symptoms of antisocial personality disorder and phobias appear earliest (median age 8 to 10 years of age).
 - Symptoms of alcohol dependency, obsessive-compulsive disorder, bipolar disorder, and schizophrenia appear at a median age of about 20.
 - Major depression first appears at a median age of about 25.

Summary: Class 17

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