### DSM-V Criteria: Highlights

- Two or more of the following for a significant portion of time in 1 month:
  - Delusions
  - Hallucinations
  - Disorganized speech
  - Gross disorganization or catatonia
  - Negative symptoms (diminished emotional expression or avolition)
  - Functional impairment of some kind

### Four Main Symptom Groups of Schizophrenia

- **Positive**
- **Negative**
- **Cognitive**
- **Affective**

### Comorbidity

- Substance abuse disorders
  - Nicotine dependence
- Anxiety, depression, and suicide
- Physical health or illness
  - CV disease
  - Diabetes
- Psychosis-induced polydipsia
Case Study

Eric M, 18, has always been a good student. However, in his second semester of college, he begins, for the first time in his life, to have trouble concentrating. When his family doesn’t hear from Eric, they contact the school, only to discover that his roommate says Eric is “talking weird.”

Asked what he means, the roommate says, “Well, you know, he says stuff that doesn’t connect, doesn’t make any sense. I asked him if he was high or something, but he said no, and I believed him.”

On further investigation, Eric’s professors say he’s been missing class, after starting out so well.

Case Study/ Audience Response Question

Eric’s roommate says his speech “... doesn’t connect; it doesn’t make any sense. He sort of gets derailed.” Which of the following symptoms is Eric displaying?

A. Avolitional speech
B. Delusional speech
C. Disorganized speech
D. Diminished emotional expression

Etiology

- Biological factors
  - Genetics
- Neurobiological
  - Dopamine theory
  - Other neurochemical hypotheses
    - Serotonin
    - Glutamate
    - ACh, GABA plus more....
- Brain structure abnormalities

Dopamine Hypothesis

- Thorazine (chlorpromazine)
- Excess of DA in the mesolimbic system
- Reduction of DA activity in the frontal cortex
- Correction does not eliminate all symptoms
- More complex interaction of multiple NT involved

Dopamine hypothesis of schizophrenia

<table>
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<th>Mesolimbic Pathway</th>
<th>Mesocortical Pathway (i.e. DA/PC)</th>
<th>Mesocortical Pathway (i.e. NE/FPC)</th>
<th>Nigrostriatal Pathway</th>
<th>Tuberoinfundibular Pathway</th>
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The Dopaminergic Pathways of the Brain

- Ventral tegmental area
- Hypothalamic dopamine pathway
- Striatum
- Nucleus accumbens
- Ventral pallidum
- Substantia nigra
- Mesocortical dopamine pathway
Serotonin
- Second generation antipsychotics
- DA antagonist
- 5HT$_{2a}$ antagonist

Glutamate Hypothesis
Glutamate hypofunction is associated with schizophrenic symptoms
- Phencyclidine (PCP) can produce a full array of schizophrenic symptoms
- PCP blunts NMDA glutamate receptor function
- NMDA receptors
  - Regulate cognitive functions such as memory
  - Have direct influence on dopaminergic pathways
- NMDA receptor does not function properly in schizophrenia
- Nearly all of the genes implicated in schizophrenia play roles in glutamate function

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Etiology (Cont.)
- Psychological and environmental factors
  - Prenatal stressors
  - Psychological stressors
  - Environmental stressors
  - Prognostic considerations

Course of the Disorder
- Prodromal (next slide)
- Responses to treatment
- Recurrent acute exacerbations and remissions of psychosis
- Increase in residual dysfunction and deterioration with each relapse

Marijuana Use and Psychosis Risk
- Use in early adolescence or heavy use later in life increases risk of a psychotic illness 4-fold
- ~4% of marijuana users develop schizophrenia
- ~10-14% of schizophrenia may be related to marijuana use
- Continued use once psychosis develops associated with relapse and worse functional outcomes

Potential Early Symptoms: Prepsychotic

- Withdrawn from others
- Depressed
- Anxious
- Phobias
- Obsessions and compulsions
- Difficulty concentrating
- Preoccupation with religion
- Preoccupation with self

Case Study

Eric’s parents arrive on campus, and he agrees to meet with them and a campus counselor. He appears anxious. He expresses sorrow that his grades are suffering, acknowledging that his concentration “just isn’t there.” He says that he feels “something weird is happening to me” and describes frequent distressing thoughts. He admits to feeling suspicious of everyone he passes.

Eric’s parents and the counselor both notice what the roommate had described about Eric’s speech.

Phases of Schizophrenia

- Prodromal
  - Onset; mild changes
- Acute
  - Exacerbation of symptoms
  - Stabilization
  - Symptoms diminishing
  - Movement toward previous level of functioning
  - Maintenance or residual
  - New baseline is established

Case Study

Eric agrees to see a psychiatrist and an initial assessment and history indicate that he has only been experiencing some mild changes in his thinking and mood for about a month—ever since returning from the winter holiday. The examiner confirms that his speech is sometimes disorganized and his ability to concentrate and study is diminished from his previous longstanding as a strong student.

Case Study/Audience Response Question

Given the evidence we have so far, if Eric has schizophrenia, which is suspected, which phase is he most likely experiencing?

A. Acute
B. Residual
C. Prodromal
D. Stabilization

Assessment

- During the prodromal phase
- General assessment
  - Positive symptoms
  - Negative symptoms
  - Cognitive symptoms
  - Affective symptoms
Positive Symptoms

- Alterations in thinking
  - Delusions − False, fixed beliefs
  - Ideas of reference (referential delusion)
  - Persecution (paranoia)
  - Grandiosity
  - Nihilistic
- Somatic Sensations
  - Jealousy
  - Erotomanic
  - Control

Disorders or Distortions of Thought (continued)

- Thought blocking
- Thought insertion
- Thought deletion
- Magical thinking
- Paranoia

As I walked along, I began to notice that the colors and shapes of everything around me were becoming very intense. And at some point, I began to realize that the houses I was passing were sending messages to me: Look closely. You are special. You are especially bad. Look closely and ye shall find. There are many things you must see. See. See.

I didn’t hear these words as literal sounds, as though the houses were talking and I were hearing them; instead, the words just came into my head—they were ideas I was having. Yet I instinctively knew they were not my ideas. They belonged to the houses, and the houses put them in my head.”

Elyn Saks – The Center Cannot Hold

Positive Symptoms (Cont.)

- Alterations in speech − Associative looseness
  - Flight of ideas
  - Neologisms
  - Echolalia
  - Circumstantiality
  - Tangentiality
  - Symbolic speech
  - Clang associations
  - Word salad

Case Study/Audience Response Question

During assessment, Eric has trouble staying on topic, zipping rapidly from one thought to the next, making it hard to follow what he’s trying to say. Which speech disturbance is he exhibiting?

A. Pressured speech
B. Circumstantiality
C. Flight of ideas
D. Tangentiality

Word Salad - Facebook

Once when you’re doing good with your first crown and last, but someone else balloons starting to follow you for you to pops their, and trying to tie you in a knot with there old egg that it wasn’t your.
Alterations in Perception

• Depersonalization
• Derealization
• Hallucinations
  • Auditory
  • Visual
  • Olfactory
  • Gustatory
  • Tactile
  • Command
  • Illusions

Alterations in Behavior

• Catatonia
• Motor retardation
• Motor agitation
• Stereotyped behaviors
• Waxy flexibility
  • Echopraxia
  • Negativism
  • Impaired impulse control
  • Gesturing or posturing
  • Boundary impairment

Negative Symptoms

• The absence of essential human qualities
  • Anhedonia
  • Avolition
  • Asociality
  • Affective blunting
  • Apathy
  • Alogia

Negative Symptoms (Cont.)

• Affect: Outward expression of a person's internal emotional state
  • Flat
  • Blunted
  • Inappropriate
  • Bizarre

Cognitive Symptoms

• Concrete thinking
• Impaired memory
• Impaired information processing
• Impaired executive functioning
• Problem solving
  • Ambivalence
  • Cognitive flexibility

Silvia Plath’s The Bell Jar

“I saw myself sitting in the crotch of this fig tree, starving to death, just because I couldn’t make up my mind which of the figs I would choose. I wanted each and every one of them, but choosing one meant losing all the rest, and, as I sat there, unable to decide, the figs began to wrinkle and go black, and, one by one, they plopped to the ground at my feet.”
Affective Symptoms

• Assessment for depression is crucial
• May herald impending relapse
• Increases substance abuse
• Increases suicide risk
• Further impairs functioning
• Anxiety

Self-Assessment

• Anosognosia
  • Inability to realize they are ill
  • Caused by the illness itself
  • May result in resistance to or cessation of treatment
  • Often combined with paranoia so that accepting help is impossible
• Nurse’s self-assessment
  • Anxiety or fear
  • Frustration
  • Expectations

Case Study/ Audience Response Question

Eric becomes anxious and says, “There are worms under my skin eating the hair follicles.” How would you classify this assessment finding?
A. Positive symptom
B. Negative symptom
C. Cognitive symptom
D. Depressive symptom

Case Study/ Audience Response Question

Eric has problems remembering when to take prescribed medication and consistently misses scheduled appointments. What category of symptoms would this fall under?
A. Positive symptom
B. Negative symptom
C. Cognitive symptom
D. Affective symptom

Assessment Guidelines

• Any medical problems
• Medical problems that mimic psychosis
• Drug or alcohol use disorders
• Mental status examination
• Include cognitive assessment (e.g., reality testing)

Assessment Guidelines (Cont.)

• Assess for hallucinations
• Assess for delusions
• Assess for suicide risk
• Assess ability to ensure personal safety and health
• Assess prescribed meds
• Assess symptoms’ impact on functioning
• Assess family knowledge
Case Study Discussion Guide

- The psychiatric nurse conducting Eric's assessment believes that he is also suffering from command hallucinations. Discuss what kinds of questions could help affirm this.

Potential Nursing Diagnoses

- Positive symptoms
  - Disturbed sensory perception
  - Formerly Disturbed Thought Process
  - Risk for self-directed or other-directed violence
  - Impaired verbal communication
- Negative symptoms
  - Social isolation
  - Chronic low self-esteem

Outcomes Identification

- Phase I—acute
  - Patient safety and medical stabilization
- Phase II—stabilization
  - Help patient understand illness and treatment
  - Stabilize medications
  - Control or cope with symptoms
- Phase III—maintenance
  - Maintain achievement
  - Prevent relapse
  - Achieve independence, satisfactory quality of life

Case Study Discussion

- After an acute admission, discharge is being planned for Eric. What are some things that need to be considered?

Planning

- Phase I—acute
  - Best strategies to ensure patient safety and provide symptom stabilization
- Phase II—stabilization
- Phase III—maintenance
  - Provide patient and family education
  - Relapse prevention skills are vital

Implementation

- Acute phase
  - Ensure safety
  - Psychiatric, medical, and neurological evaluation
  - Psychopharmacological treatment
  - Support, psychoeducation, and guidance
  - Supervision and limit setting in the milieu
  - Activities and groups
  - Monitor fluid intake
  - Working with aggression
  - Regularly assess for risk and take safety measures
  - Therapeutic communication
Interventions

• Stabilization and maintenance phases
  • Medication administration/adherence
  • Relationships with trusted care providers
  • Community-based therapeutic services
  • Teamwork and safety
  • Activities and groups

Communication Guidelines

Therapeutic strategies for communicating with patients with schizophrenia focus on:
• Lowering the patient’s anxiety
• Decreasing defensive patterns
• Encouraging participation in therapeutic and social events
• Raising feelings of self-worth
• Increasing medication compliance

Counseling: Communication Guidelines

• Associative looseness
  • Do not pretend that you understand
  • Place difficulty of understanding on yourself
  • Look for reoccurring topics and themes
  • Emphasize what is going on in the patient’s environment
  • Involve patient in simple, reality-based activities
  • Reinforce clear communication of needs, feelings, and thoughts

• Hallucinations
  • Hearing voices (auditory hallucinations) most common
  • Approach patient in nonthreatening and nonjudgmental manner
  • Assess if messages are suicidal or homicidal
  • Ask directly what the voices are saying
  • Do not argue or negate patient perception
  • Offer your own perceptions (present reality)
  • Focus on reality based diversions
  • Patient anxious, fearful, lonely, brain not processing stimuli accurately
  • Initiate safety measures if needed

• Delusions
  • Be open, honest, matter-of-fact, and calm
  • Have patient describe delusion
  • Avoid arguing about content
  • Interject doubt when appropriate
  • Validate part of delusion that is real
  • Focus on feelings the delusions generate
  • Once delusion is described, do not dwell on it
  • Observe events that trigger delusions

Remember…..

• Altered thought processes are generally related to low self-esteem, powerlessness, anger or fear
• Projection is the most common defense mechanism for the paranoid schizophrenic
• Look for the meaning
Reality Based Interventions

- **Distraction**
  - Talk with friends
  - Listen to music
  - Watch TV

- **Physical activity**
  - Exercise
  - Sing, dance, etc.

- **Fighting back**
  - Positive self-talk
  - Yelling at voices
  - Tell voices to go away

- **Help-seeking**
  - Call therapist/mental health worker
  - Go to clinic/NP/MD
  - Seek family/significant other support

- **Relaxation activities**
  - Shower, bath
  - Breathing exercises
  - Relaxation techniques
  - Take PRN med

Patient and Family Teaching for Schizophrenia

- Learn all you can about the illness
- Develop a relapse prevention plan
- Participate in family, group and individual therapy
- Avoid alcohol and drugs
- Learn ways to address fears and losses
- Learn new ways of coping
  - Have a plan on paper of what to do in times of increased stress
  - Adhere to treatment
  - Maintain communication with supportive people
  - Stay healthy by managing stress, sleep, and diet
  - Balance

Advanced Practice Interventions

- **Family therapy**
- Cognitive behavioral therapy (CBT)
- Individual and group therapy
- Psychoeducation
- Medication prescription and monitoring
- Cognitive remediation
- Social skills training

Psychobiological Interventions

- Antipsychotic medications
  - First-generation
  - Second-generation
  - Third-generation
- Injectable antipsychotics
  - Short-acting
  - Long-acting

First-Generation Antipsychotics

- Dopamine antagonists (D_2 receptor antagonists)
- Target positive symptoms of schizophrenia
- Advantage
  - Less expensive than second generation
- Disadvantages
  - Extrapyramidal side effects (EPS)
  - Anticholinergic (ACH) side effects
  - Tardive dyskinesia
  - Weight gain, sexual dysfunction, endocrine disturbances

Second-Generation Antipsychotics

- Serotonin (5-HT_2A receptor) and dopamine (D_4 receptor) antagonists, e.g., clozapine (Clozaril)
- Treat both positive and negative symptoms
- Minimal to no EPS or tardive dyskinesia
- Disadvantage—tendency to cause significant weight gain; risk of metabolic syndrome
Third-Generation Antipsychotics

• Really a subset of the SGAs
• Aripiprazole (Abilify), brexpiprazole (Rexulti), and cariprazine (Vraylar)
• Dopamine system stabilizers
• May improve positive and negative symptoms and cognitive function
  • Little risk of EPS or tardive dyskinesia

Side Effects

• Class side effects
  • Seizure
  • Impotence
  • Hyperprolactinemia
  • hepatotoxicity
• Other side effects
  • Extrapyramidal Symptoms (EPS)
  • Sedation
  • Orthostatic hypotension
  • Weight gain
  • Metabolic syndrome/diabetes
  • Anticholinergic side effects

Extrapyramidal Side Effects

- Acute dystonia
  • Anticholinergic (benztropine)
  • Antihistamine (diphenhydramine)
- Parkinsonism
  • Lower antipsychotic dosage
  • Switch to another antipsychotic
  • Anticholinergic medication
    - Benztropine - Cogentin
    - Trihexyphenidyl - Artane
  • Dopamine agonist
    - Amantadine - Symmetrel
- Akathisia
  • Lower antipsychotic dosage
  • Switch to another antipsychotic
  • Add benzodiazepine
  • Add β-adrenergic blocker
- Moderate to severe tardive dyskinesia
  • Reversible inhibitor of the vesicular monoamine-transporter 2 (VMAT2)

Rare and Toxic SideEffects

- ACh toxicity
- Neuroleptic malignant syndrome (NMS)
- Agranulocytosis
- Prolongation of the QT interval

Anticholinergic Toxidrome

Mad as a hatter
Altered mental status

Bird as a bat
Impaired

Red as a beet
Flushed face

Not as a hare
Dry mouth

Dry as a bone
Dry mucous membranes
Evaluation

- Reevaluate progress regularly and adjust treatment when needed
- Even after symptoms improve outwardly, inside the patient is still recovering.
- Set small goals; recovery can take months.
- Active, ongoing communication and caring is essential.

Quality Improvement

- Incorporate evidence-based treatment
- Creatively develop and incorporate treatment innovations
- Examine outcomes data to improve patient care and outcomes
- Adhere to updated standards of care and guidelines that incorporate the latest evidence-based practices

Audience Response Question

Loose associations in a person with schizophrenia indicate

A. paranoia.
B. mood instability.
C. depersonalization.
D. poorly organized thinking.

Audience Response Question

Which assessment finding represents a negative symptom of schizophrenia?

A. Apathy
B. Delusion
C. Poor concentration
D. Hallucination