Citation Key

for more information see: http://open.umich.edu/wiki/CitationPolicy

Use + Share + Adapt

{ Content the copyright holder, author, or law permits you to use, share and adapt. }

PD-GOV **Public Domain – Government:** Works that are produced by the U.S. Government. (17 USC § 105)

PD-EXP **Public Domain – Expired:** Works that are no longer protected due to an expired copyright term.

PD-SELF **Public Domain – Self Dedicated:** Works that a copyright holder has dedicated to the public domain.

ZERO **Creative Commons – Zero Waiver**

BY **Creative Commons – Attribution License**

BY-SA **Creative Commons – Attribution Share Alike License**

BY-NC **Creative Commons – Attribution Noncommercial License**

BY-NC-SA **Creative Commons – Attribution Noncommercial Share Alike License**

GNU-FDL **GNU – Free Documentation License**

Make Your Own Assessment

{ Content Open.Michigan believes can be used, shared, and adapted because it is ineligible for copyright. }

PD-INEL **Public Domain – Ineligible:** Works that are ineligible for copyright protection in the U.S. (17 USC § 102(b)) *laws in your jurisdiction may differ

{ Content Open.Michigan has used under a Fair Use determination. }

FAIR USE **Fair Use:** Use of works that is determined to be Fair consistent with the U.S. Copyright Act. (17 USC § 107) *laws in your jurisdiction may differ

Our determination **DOES NOT** mean that all uses of this 3rd-party content are Fair Uses and we **DO NOT** guarantee that your use of the content is Fair.

To use this content you should **do your own independent analysis** to determine whether or not your use will be Fair.

Schizophrenia and Other Psychotic Disorders

M2 Psychiatry Sequence

Michael Jibson
Fall 2008

University of Michigan
Medical School

Psychosis

- Significant impairment in reality testing, as evidenced by
  - hallucinations
  - delusions
  - thought disorganization
  - grossly disorganized behavior

Hallucination

- False sensory perception
  - Auditory
  - Visual
  - Tactile
  - Olfactory
  - Gustatory

Delusion

- False belief that is
  - based on incorrect inference about external reality
  - firmly held despite obvious evidence to the contrary
  - not sanctioned by the individual's culture or group

Delusion

- Persecutory - belief that one is being malevolently treated in some way
- Referential - neutral occurrences are seen as directed toward oneself
- Religious - delusional beliefs of a spiritual or religious nature
- Control - thoughts, feelings, or body feel controlled or manipulated

(cont.)

Delusion

(cont.)

- Grandiose - inflated sense of worth, power, accomplishment, etc.
- Somatic - belief that one's body is defective, has been changed, or is diseased
- Jealous - belief that one's sexual partner is unfaithful
- Erotomanic - belief that another (often famous) person is in love with one

Disorganized Thoughts or Behavior

- Meaningless or chaotic speech
- Loose associations
- Bizarre behavior
- Poorly directed behavior
- Catatonia

Schizophrenia

Historical Background

- Kraepelin - Dementia Praecox
  (*Dementia Praecox and Paraphrenia,* 1896)

Schizophrenia

Historical Background

- Bleuler's "Four A's" (*Dementia Praecox; or, the Group of Schizophrenias,* 1911)
  - Autism
  - Loose associations
  - Affective disturbance
  - Ambivalence

Schizophrenia

Historical Background

- Schneider's "First-Rank Symptoms" (1950's)
  - Audible thoughts
  - More than one voice arguing or discussing the patient
  - Voices commenting on the patient's activities
  - Thought insertion
  - Thought withdrawal

(cont.)

Schizophrenia

Historical Background

- Schneider's "First-Rank Symptoms" (1950's) (cont.)
  - Thought broadcasting
  - Made feelings/Made impulses
  - Made volition
  - Somatic passivity
  - Delusional perception

Schizophrenia

Historical Background

- DSM-III (1980)
  a. Active psychosis
  b. Functional deterioration

Schizophrenia

DSM-IV Diagnostic Criteria

A. **At least two psychotic symptoms for one month**
B. **Social or occupational dysfunction**
C. **Six month duration of symptoms**
D. Schizoaffective and major mood disorders have been excluded
E. Substance abuse and medical conditions have been excluded
F. Not due to a pervasive developmental disorder (e.g. autism)

Schizophrenia

Diagnostic Criteria for Schizophrenia (DSM-IV)

A. **Characteristic symptoms:** Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated):

(1) delusions
(2) hallucinations
(3) disorganized speech (e.g., frequent derailment or incoherence)
(4) grossly disorganized or catatonic behavior
(5) negative symptoms, i.e., affective flattening, alogia, or avolition

B. **Social/occupational dysfunction:** For a significant portion of the time since the onset of the disturbance, one or more major areas of functioning such as work, interpersonal relations, or self-care are markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, failure to achieve expected level of interpersonal, academic, or occupational achievement).

C. **Duration:** Continuous signs of the disturbance persist for at least 6 months. This 6-month period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i.e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences).

D. **Schizoaffective and Mood Disorder exclusion:** Schizoaffective Disorder and Mood Disorder With Psychotic Features have been ruled out because either (1) no Major Depressive, Manic, or Mixed Episodes have occurred concurrently with the active-phase symptoms; or (2) if mood episodes have occurred during active-phase symptoms, their total duration has been brief relative to the duration of the active and residual periods.

E. **Substance/general medical condition exclusion:** The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

F. **Relationship to a Pervasive Developmental Disorder:** If there is a history of Autistic Disorder or another Pervasive Developmental Disorder, the additional diagnosis of Schizophrenia is made only if prominent delusions or hallucinations are also present for at least a month (or less if successfully treated).

 American Psychiatric Association: *Diagnostic and Manual of Mental Disorders*, 4th ed, Text Revision (*DSM-IV-TR*)

Schizophrenia

Subtype Definition and Hierarchy

- Paranoid type
  - Preoccupation with one or more delusions or frequent auditory hallucinations
  - No prominent disorganized speech, disorganized or catatonic behavior, or flat or inappropriate affect

Schizophrenia

Subtype Definition and Hierarchy

- Disorganized type
  - Prominent disorganized speech
  - Disorganized behavior

    and
  - Flat or inappropriate affect

Schizophrenia

Subtype Definition and Hierarchy

- Catatonic type
  - Motoric immobility, catalepsy (waxy flexibility) or stupor
  - Excessive, purposeless motor activity
  - Extreme negativism (motiveless resistance to instructions) or mutism

(cont.)

Schizophrenia

Subtype Definition and Hierarchy

- Catatonic type

(cont.)

  - Peculiarities of voluntary movement or posture, stereotyped movements, prominent mannerisms, or prominent grimacing
  - Echolalia (echoing words) or echopraxia (mimicking gestures)

Schizophrenia

Subtype Definition and Hierarchy

- Undifferentiated type
  - None of the above

Schizophrenia

Subtype Definition and Hierarchy

- Residual type
  - Absence of prominent delusions, hallucinations, disorganized speech, and grossly disorganized or catatonic behavior
  - Continuing evidence of disturbance (negative symptoms, attenuated psychotic symptoms, odd beliefs, unusual perceptual experiences)

Schizophrenia

Symptom Descriptions

- Positive symptoms
  - Delusions
  - Hallucinations
  - Thought disorganization

Schizophrenia

Symptom Descriptions

- Negative symptoms
  - Blunted affect - decreased facial expression, vocal inflection, eye contact, and expressive gestures
  - Alogia - reduced amount of speech, reduced content of ideas, thought blocking, long latency
  - Avolition/Apathy - poor grooming and hygiene, impersistence at school or work, low energy

Schizophrenia

Symptom Descriptions

- Negative symptoms
  - Anhedonia / Asociality - loss of recreational interests, decreased sexual activity, absence of intimacy and personal relationships
  - Inattention - socially uninvolved, “spacey,” poor cognitive function

Schizophrenia

Symptom Descriptions

- Cognitive impairment
  - Memory
  - Executive function
  - Language
  - Attention

Schizophrenia

Onset, Course, and Complications

- Age and circumstances of onset
  - Prodromal symptoms may be present from birth or may precede psychosis by months or years.
    - Poor social adjustment; few friends
    - Poor school and work performance; low IQ
    - Negative symptoms
    - Peculiarities of thought or behavior

Schizophrenia

Onset, Course, and Complications

- Age and circumstances of onset
  - Peak age of onset for men is 17-30
  - Peak age of onset for women is 20-40

Schizophrenia

Prognostic Features

Good Prognosis	Poor Prognosis
Later onset	Early onset
Obvious precipitating factors	No precipitating factors
Acute onset	Insidious onset
Good premorbid social and work history	Poor premorbid social and work history
Preponderant positive symptoms	Preponderant negative symptoms
Depressive symptoms	Absence of depressive symptoms
Preservation of adequate affective expression	Blunted or inappropriate affect
Paranoid or catatonic features	Undifferentiated or disorganized features
Variable course	Chronic course
Absence of neuropsychological impairment	Presence of neuropsychological impairment
Absence of structural brain abnormalities	Presence of structural brain abnormalities
Good social support systems	Poor social support systems
Early adequate treatment	No treatment or delayed/inadequate treatment

Adapted from: Sadock BJ, Sadock VA: *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, 7th ed, Philadelphia, Lippincott Williams & Wilkins, p. 1197

Schizophrenia

Clinical Course

- Prodromal symptoms typically predate the diagnosis by months or years
- Positive symptoms tend to occur episodically
  - acute episodes are the most common cause of hospitalization, and respond well to antipsychotic medication

(Cont.)

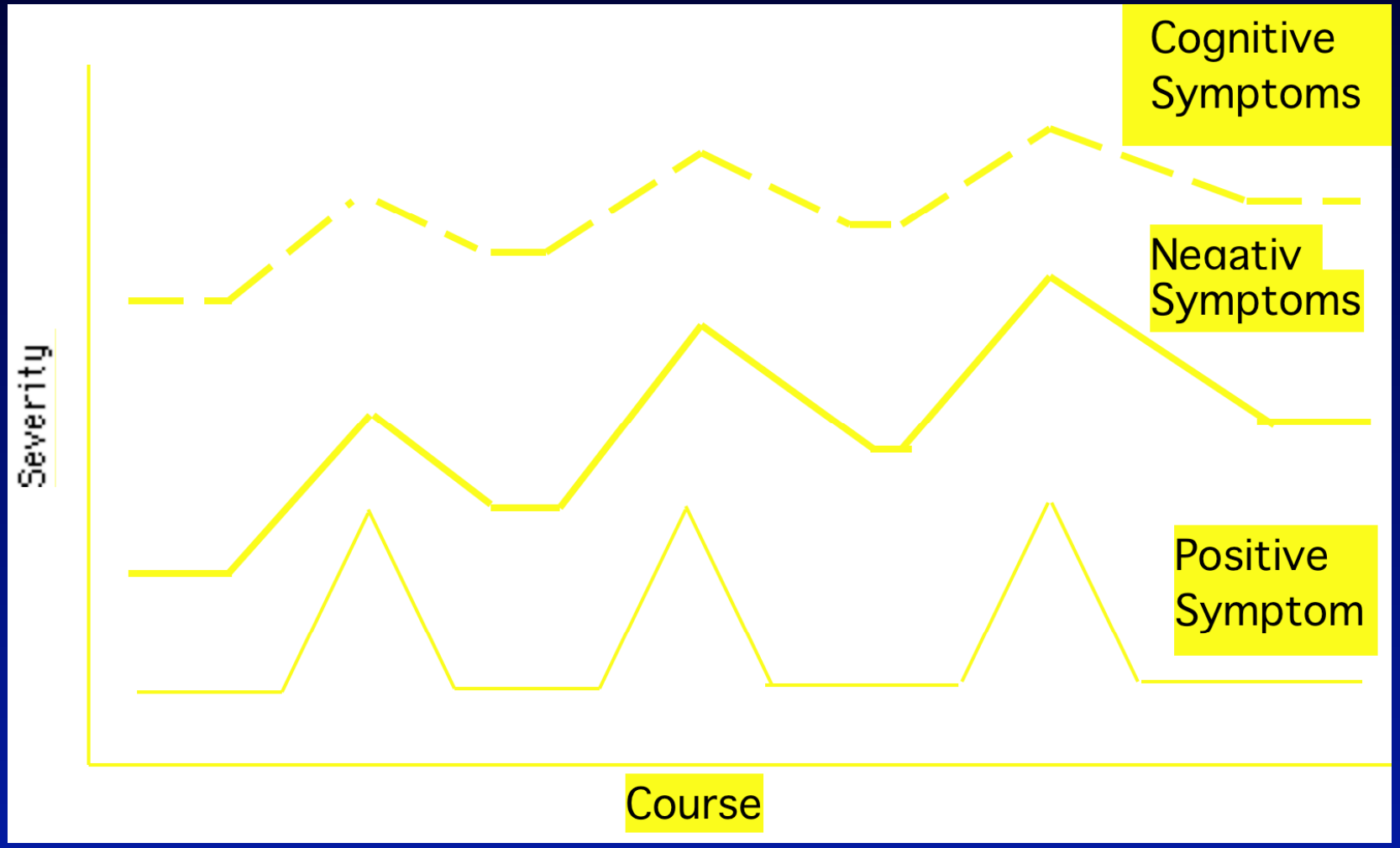
Schizophrenia

Clinical Course

(Cont.)

- Negative symptoms tend to be chronic and progressive, are correlated with social and occupational deterioration, and respond poorly to treatment
- Residual symptoms tend to remain even when other symptoms are well controlled

Clinical Course of Schizophrenia



Schizophrenia

Complications

- Suicide – 5-10% of deaths
- Depression - occurs in 50% of cases, often after an acute episode
- Homelessness – 30-35% of homeless
- Crime: 4-fold increase in acts of violence compared with the general population. These patients are more frequently victims of both violent and nonviolent crimes.
- Substance abuse

Schizophrenia

Epidemiology

- Prevalence and social distribution
  - The lifetime risk of schizophrenia is 1% in all populations
  - Annual incidence is 15-20 per 100,000
  - Over-representation of lower socioeconomic groups is probably the result of downward drift

Schizophrenia

Epidemiology

- Genetic factors
  - 10% risk to first-degree relatives
  - 50% risk to monozygotic twins
  - No specific genetic linkage has been demonstrated
  - Multiple genes are probably involved

Schizophrenia

Epidemiology

- Prenatal and perinatal complications
  - In utero and perinatal infection
    - 2nd trimester viral infections
    - Winter births
  - Toxic exposure
  - Perinatal anoxia

Schizophrenia

Epidemiology

- Multi-hit Hypothesis
  - A combination of genetic vulnerability and environmental insults is required to develop the disorder

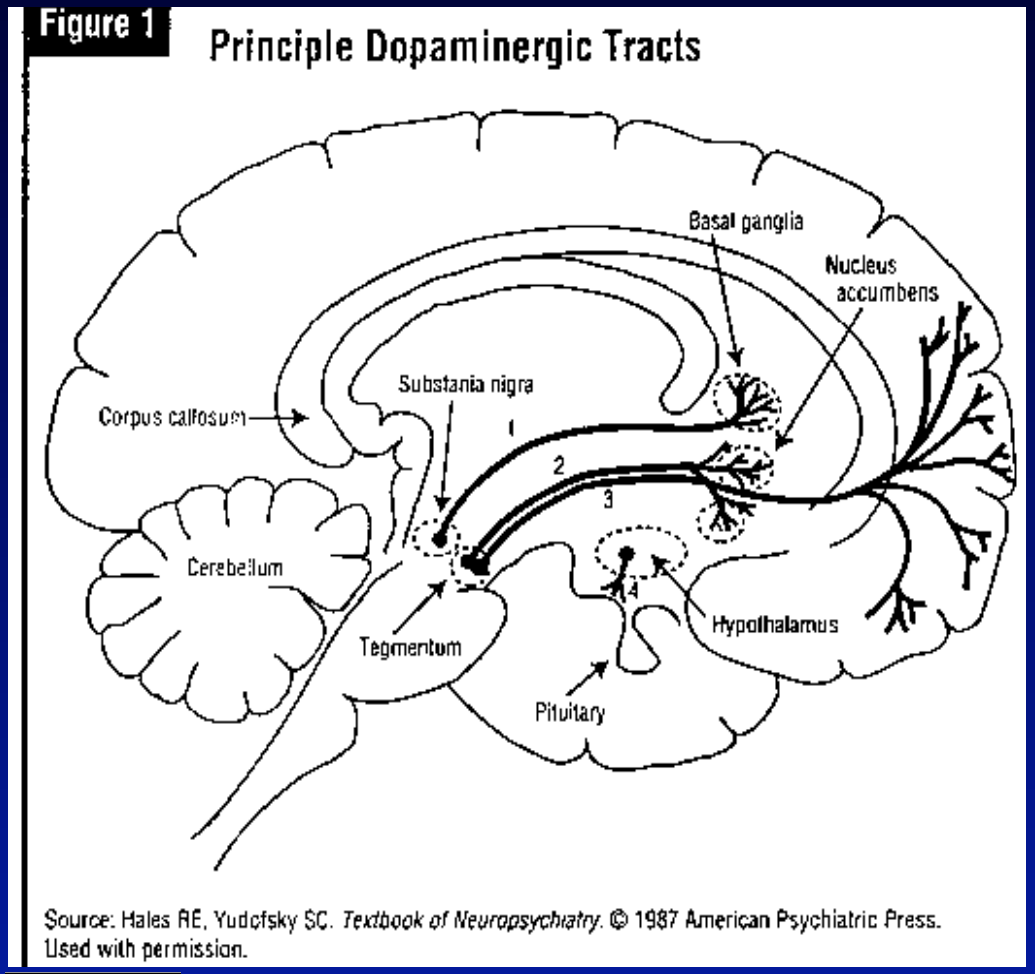
Schizophrenia

Pathophysiology

- The cause of schizophrenia is unclear, but the following are considered to have a role:
  - Dopamine hypothesis
  - Structural correlates
  - Other hypotheses

Major Dopamine Pathways

1. Nigrostriatal tract- (extrapyramidal pathway) begins in the substantia nigra and ends in the caudate nucleus and putamen of the basal ganglia
2. Mesolimbic tract - originates in the midbrain tegmentum and innervates the nucleus accumbens and adjacent limbic structures
3. Mesocortical tract - originates in the midbrain tegmentum and innervates anterior cortical areas
4. Tuberoinfundibular tract - projects from the arcuate and periventricular nuclei of the hypothalamus to the pituitary



PD-INEL Hales RE, Yudofsky SC. Textbook of Neuropsychiatry. American Psychiatric Press, 1987

Dopamine Hypothesis of Schizophrenia

Evidence for involvement

- Increased dopamine receptors at autopsy
- Dopamine agonists and re-uptake blockers worsen psychosis
- All effective neuroleptics block post-synaptic dopamine actions
- Good responders to neuroleptics have progressive decrease in plasma HVA (dopamine metabolite), while poor responders do not

Dopamine Hypothesis of Schizophrenia

Model for dopamine involvement

- Increased subcortical dopamine activity
- Decreased prefrontal dopamine activity

Dopamine Hypothesis of Schizophrenia

Structural correlates

- Increased ventricle-to-brain ratio
- Most frequently replicated finding in schizophrenia research
- Not associated with any specific brain structure or pathway

Dopamine Hypothesis of Schizophrenia

Other Hypotheses

- Alterations in glutamate neurotransmission involving the NMDA receptor
- Aberrant GABA neurotransmission in the dorsolateral prefrontal cortex

Schizophrenia

Treatment

- Psychopharmacology - Antipsychotic medications
  - Atypical antipsychotics (risperidone, olanzapine, quetiapine, ziprasidone, aripiprazole)
    - First-line drugs of choice - 70% of patients respond
    - Clozapine is effective in 35-50% of patients who do not respond to other antipsychotics (80-85% of all patients)
  - Conventional antipsychotics (neuroleptics)
    - 70% of patients respond

Schizophrenia

Treatment

- Psychosocial interventions
  - Case Management - essential for other interventions to be effective
    - Finances
    - Housing
    - Social support network

Psychosocial Support System

Community-based Interdisciplinary Treatment Team

Provide basic necessities:

- Finances
- Housing
- Personal support network

All other treatments require these to be in place

Schizophrenia

Treatment

- Psychosocial interventions
  - Social skills training
  - Vocational rehabilitation
  - Family psychoeducation – especially for families with high levels of "expressed emotion"
  - Supportive psychotherapy

Mood Disorders

Manic Episode

- Psychosis
  - Occurs in ~80% of manic episodes (lifetime risk is about 1%)
  - Often mood congruent (e.g., grandiose delusions), but may be indistinguishable from psychotic symptoms of schizophrenia or other disorders
  - May include catatonia
  - Insight tends to be good between episodes, but very poor during the episodes

Mood Disorders

Manic Episode

- Treatment
  - Antipsychotics – for acute episodes
  - Mood stabilizers – for acute episodes and prophylaxis

Mood Disorders

Major Depressive Episode with Psychotic Features

- Psychosis
  - 10% of depressed patients develop psychotic features (lifetime risk is about 1%)
  - Often congruent with mood (e.g., nihilistic, persecutory, punishment, somatic)

Mood Disorders

Major Depressive Episode with Psychotic Features

- Treatment
  - ECT is effective in 80-90% of patients
  - Antipsychotic plus an antidepressant work in about 50% of cases (neither works well alone)

Other Psychotic Disorders

Schizoaffective Disorder

- Diagnostic criteria
  - Course of illness includes periods of psychosis without mood symptoms and periods of psychosis with mood symptoms
  - The psychotic and mood symptoms are both prominent during the course of illness

Other Psychotic Disorders

Schizoaffective Disorder

Diagnostic Criteria for Schizoaffective Disorder (DSM-IV)

A. An uninterrupted period of illness during which, at some time, there is either a Major Depressive Episode, a Manic Episode, or a Mixed Episode concurrent with symptoms that meet Criterion A for Schizophrenia.

B During the same period of illness, there have been delusions or hallucinations for at least 2 weeks in the absence of prominent mood symptoms.

C. Symptoms that meet criteria for a mood episode are present for a substantial portion of the total duration of the active and residual periods of the illness.

D. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

 DSM-IV-TR, pp. 323

Other Psychotic Disorders

Schizoaffective Disorder

- Less common than schizophrenia
- Treatment includes antipsychotic plus mood stabilizer or antidepressant

Other Psychotic Disorders

Delusional Disorder

- Diagnostic criteria
  - Isolated, nonbizarre delusions
  - Without other symptoms or impairments

Other Psychotic Disorders

Delusional Disorder

Diagnostic Criteria for Delusional Disorder (DSM-IV)

A. Nonbizarre delusions (i.e., involving situations that occur in real life, such as being followed, poisoned, infected, loved at a distance, or deceived by spouse or lover, or having a disease) of at least 1 month's duration.

B. Criterion A for Schizophrenia has never been met.

C. Apart from the impact of the delusion(s) or its ramifications, functioning is not markedly impaired and behavior is not obviously odd or bizarre.

D. If mood episodes have occurred concurrently with delusions, their total duration has been brief relative to the duration of the delusional periods.

E. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

 DSM-IV-TR, pp. 329

Other Psychotic Disorders

Delusional Disorder

- Onset is in middle or late life
- Lifetime risk: 0.05%
- Course is variable
- Treatment of choice is antipsychotics, but the symptoms respond less well than in other psychotic disorders

Other Psychotic Disorders

Brief Psychotic Disorder

- Diagnostic criteria
  - Psychosis that quickly resolves, with no residual impairment

Other Psychotic Disorders

Brief Psychotic Disorder

Diagnostic Criteria for Brief Psychotic Disorder (DSM-IV)

A. Presence of one (or more) of the following symptoms:
(1) delusions
(2) hallucinations
(3) disorganized speech (e.g., frequent derailment or incoherence)
(4) grossly disorganized or catatonic behavior

B. Duration of an episode of the disturbance is at least I day but less than I month, with eventual full return to premorbid level of functioning.

C. The disturbance is not better accounted for by a Mood Disorder With Psychotic Features, Schizoaffective Disorder, or Schizophrenia and is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

 DSM-IV-TR, pp. 332

Other Psychotic Disorders

Brief Psychotic Disorder

- Major predisposing factor is a personality disorder, especially paranoid, borderline, histrionic, narcissistic, or schizotypal
- Course tends to be characterized by rapid onset and rapid resolution
- Treatment usually includes antipsychotic medications, but symptoms often remit with only supportive care (e.g., hospital milieu, reduction in stress, resolution of interpersonal crisis)

Other Psychotic Disorders

Shared Psychotic Disorder ("Folie a Deux")

- A delusion that develops in the context of a close relationship to another person with an established delusion

Other Psychotic Disorders

Substance-Induced Psychotic Disorder

- Psychosis associated with intoxication
  - Alcohol
  - Amphetamine (including MDMA)
  - Cannabis
  - Cocaine
  - Hallucinogens
  - Inhalants
  - Opioids
  - Phencyclidine (PCP)
  - Sedatives, hypnotics, anxiolytics

Other Psychotic Disorders

Substance-Induced Psychotic Disorder

- Psychosis associated with withdrawal
  - Alcohol
  - Sedatives, hypnotics, anxiolytics

Other Psychotic Disorders

Substance-Induced Psychotic Disorder

- Psychosis associated with medical treatment
  - High-dose steroids
  - L-Dopa

Other Psychotic Disorders

Psychotic Disorder Due to a General Medical Condition

Common Medical Causes of Psychosis

Neurological:
- Neoplasms
- Cerebrovascular disease
- Huntington's disease
- Seizure disorder
- Auditory nerve injury
- Deafness
- Migraine
- CNS infection

Metabolic:
- Hypoxia
- Hypercarbia
- Hypoglycemia

Endocrine:
- Hyperthyroidism
- Hypothyroidism
- Hyperparathyroidism
- Hypoparathyroidism
- Hypoadrenocorticism

Other:
- Fluid and electrolyte disturbance
- Hepatic disease
- Renal disease
- Autoimmune disorders (e.g., SLE)

 Adapted from: Stoudemire A: *Clinical Psychiatry for Medical Students*, 3rd ed, Philadelphia, Lippincott-Raven, 1998, p. 122

Other Psychotic Disorders

Psychotic Disorder Due to a General Medical Condition

- Delirium
- Dementia

Additional Source Information

for more information see: http://open.umich.edu/wiki/CitationPolicy

Slide 16: American Psychiatric Association: *Diagnostic and Manual of Mental Disorders*, 4th ed, Text Revision (*DSM-IV-TR*), Washington, DC, American Psychiatric Association, 2000, p. 312

Slide 29: Adapted from: Sadock BJ, Sadock VA: *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, 7th ed, Philadelphia, Lippincott Williams & Wilkins, p. 1197

Slide 32: Michael Jibson

Slide 39: Hales RE, Yudofsky SC. Textbook of Neuropsychiatry. American Psychiatric Press, 1987

Slide 53: *DSM-IV-TR*, pp. 323

Slide 56: *DSM-IV-TR*, pp. 329

Slide 59: *DSM-IV-TR*, pp. 332

Slide 65: Adapted from: Stoudemire A: *Clinical Psychiatry for Medical Students*, 3rd ed, Philadelphia, Lippincott-Raven, 1998, p. 122