



# What is schizophrenia?

- Schizophrenia is a syndrome of unknown etiology characterized by disturbances in cognition, emotion, perception, thinking, and behavior.
- The expression of these manifestations varies across patients and over time, but the effect of the illness is always severe and is usually long-lasting.

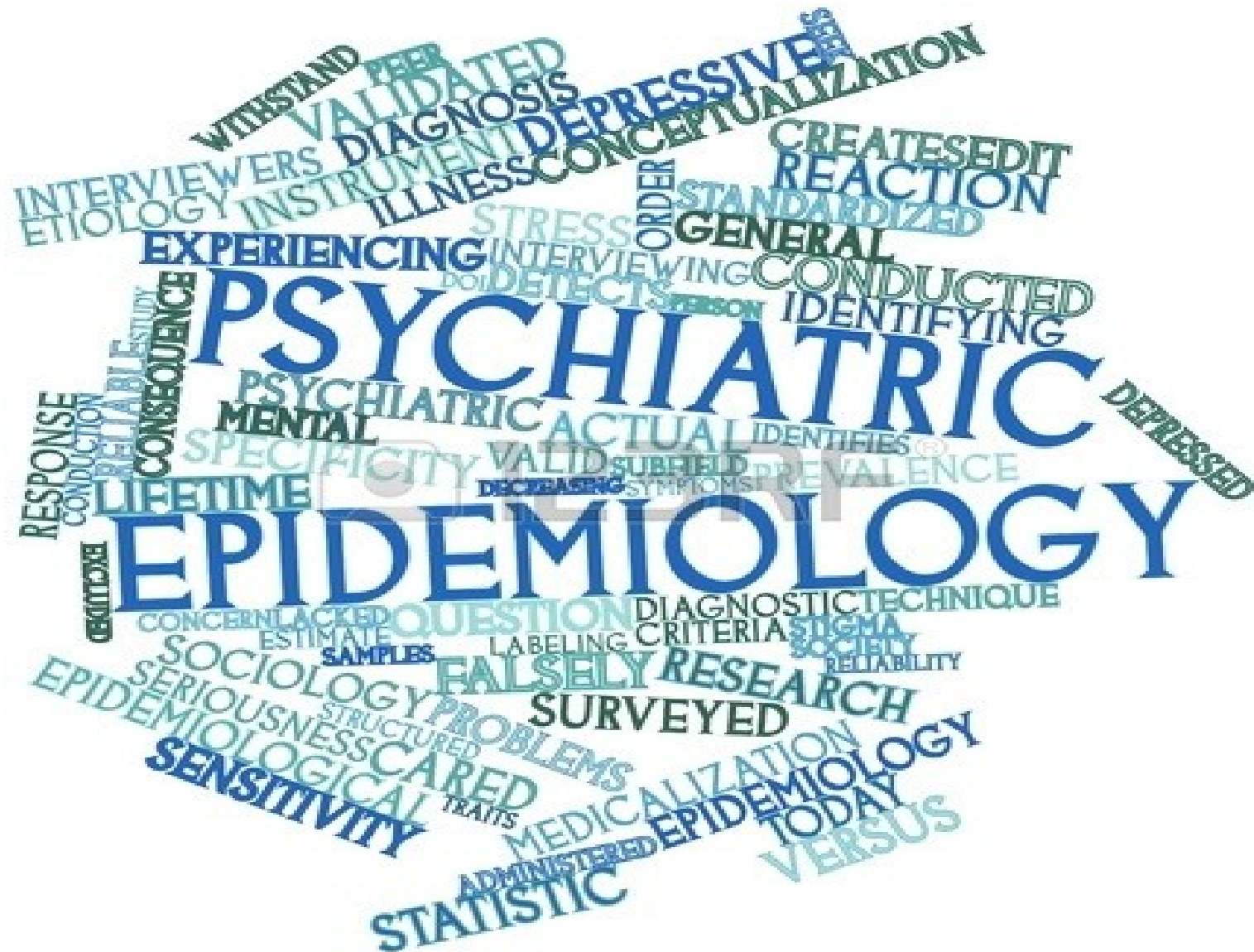
- The disorder is usually chronic, with a course encompassing a prodromal phase, an active phase, and a residual phase.
- The **active phase** has symptoms such as hallucinations, delusions, and disorganized thinking.
- The **prodromal** and **residual** phases are characterized by attenuated forms of active symptoms, such as odd beliefs and magical thinking, as well as deficits in self-care and interpersonal relatedness.

# History of schizophrenia

- **1852** – Schizophrenia was formally described by Belgian psychiatrist Benedict Morel, who called it *démence précoce*.
- **1896** – Emil Kraepelin, a German psychiatrist, applied the term *dementia praecox* to a group of illnesses beginning in adolescence that ended in dementia.

# History of schizophrenia

- 1911 – Swiss psychiatrist Eugen Bleuler introduced the term *schizophrenia* (splitting of the mind). No signs or symptoms are pathognomonic; instead, a cluster of characteristic findings indicates the diagnosis. He introduced the concept of the fundamental symptoms, called the *four As*: (1) *associational disturbances*, (2) *affective disturbances*, (3) *autism*, and (4) *ambivalence*.



# Epidemiology

- Schizophrenia affects just less than 1 percent of the world's population (Kaplan & Sadock, 2005).
- If schizophrenia spectrum disorder are included in the prevalence estimates, then the number of affected individuals increases to approximately 5 percent (Kaplan & Sadock, 2005).
- Worldwide, 2 million new cases appear each year (Kaplan & Sadock, 2009).

# Epidemiology

- Schizophrenia is found in all societies and all geographical areas.
- There is a greater incidence of schizophrenia in urban versus rural areas.
- Schizophrenia tends to be more severe in developed versus developing countries.



# Epidemiology

- gender and age -

- Equally prevalent between men and women; usually onset is earlier in men.
- Peak age of onset is between 15 and 35 years (50% of cases occur before age 25).
- Onset before age 10 (called early-onset schizophrenia) or after age 45 (called late-onset schizophrenia) is uncommon.

# Epidemiology

- medical and mental illness -

- Higher mortality rate from accidents and natural causes than in general population
- Patients with schizophrenia are at increased risk for substance abuse, especially nicotine. As much as 90% of patients may be dependent on nicotine. Over 40% of schizophrenic patients abuse drugs and alcohol.
- Leading cause of death in schizophrenic patients is suicide (10% kill themselves).

# Epidemiology

- infection and birth season -

- Persons born in winter are more likely to develop the disease than those born in spring or summer.
- Increased in babies born to mothers who have influenza during pregnancy.

# Epidemiology

- socioeconomics -

- More common among lower rather than higher socioeconomic groups.
- Higher prevalence among recent immigrants.
- Most common in cities with over 1 million population.

**Etiology**

# Etiology

- The etiology and pathogenesis of schizophrenia is not known yet.
- It is accepted generally, that in the case of schizophrenia we are dealing with “the group of schizophrenias” which origins is multi-factorial with participation of internal (genetic, inborn and biochemical) and external (trauma, infection of CNS, stress) factors.

# Etiology

- The *stress diathesis model* is most often used, which states that the person in whom schizophrenia develops has a specific biological vulnerability, or diathesis, that is triggered by stress and leads to schizophrenic symptoms.
- Stressors may be genetic, biological, and psychosocial or environmental.

# Etiology

- **Genetic** – Both single-gene and polygenic theories have been proposed. Although neither theory has been definitely substantiated, the polygenic theory appears to be more consistent with the presentation of schizophrenia.



# Etiology

- ***Biological***
  - Dopamine hypothesis
  - Norepinephrine hypothesis
  - GABA hypothesis
  - Serotonin hypothesis
  - Glutamate hypothesis
  - Neurodevelopmental theories

# Etiology

- *Psychosocial and environmental*
  - Family factors
  - Gestational and birth complications
  - Exposure to influenza epidemics or maternal starvation during pregnancy
  - Rhesus (Rh) factor incompatibility etc.



# Diagnosis and symptoms

- Schizophrenia is a disorder whose diagnosis is based on observation and description of the patient.
- Abnormalities are often present on most components of the mental status examination.
- There are no pathognomonic signs or symptoms.

# Diagnosis and symptoms

- **Overall functioning** – Level of functioning declines or fails to achieve the expected level
- **Thought content** – Abnormal (e.g., delusions, poverty of content)
- **Form of thought** – Illogical (e.g., incoherence, neologisms, echolalia)
- **Affect** – Abnormal (e.g., flat, silly, labile, inappropriate)
- **Sense of self** – Impaired (e.g., loss of ego boundaries, gender confusion, inability to distinguish internal from external reality)

# Diagnosis and symptoms

- **Volition** – Altered (e.g., inadequate drive or motivation and marked ambivalence)
- **Interpersonal functioning** – Impaired (e.g., social withdrawal and emotional detachment, aggressiveness, sexual inappropriateness)
- **Psychomotor behavior** – Abnormal or changed (e.g., agitation versus withdrawal, grimacing, posturing, rituals, catatonia)
- **Cognition** – Impaired (e.g., inattention, impaired information processing)

# Diagnosis and symptoms

- key features -

- Delusions
- Hallucinations
- Disorganized thinking
- Grossly disorganized or abnormal motor behavior (including catatonia)
- Negative symptoms

# *Delusions*

- Fixed beliefs that are not amenable to change in light of conflicting evidence.

- **Variety of themes**
  - Persecutory
  - Referential
  - Grandiose
  - Erotomanic
  - Nihilistic
  - Somatic
  - Thought withdrawal
  - Thought insertion
  - Delusions of control



# *Hallucinations*

- Perception-like experiences that occur without an external stimulus.
- May occur in any sensory modality, but auditory hallucinations are the most common in schizophrenia and related disorders.
- Must occur in the context of a clear sensorium.

# *Disorganized thinking*

- Typically inferred from the individual's speech.
- The symptom must be severe enough to substantially impair effective communication.
- Less severe disorganized thinking or speech may occur during the prodromal and residual periods of schizophrenia.

# *Disorganized thinking*

- Derailment or loose associations
- Tangentiality
- Incoherence or “word salad”

➤ Example: 00:00 – 02:30

<https://www.youtube.com/watch?v=gGnl8dqEoPQ>

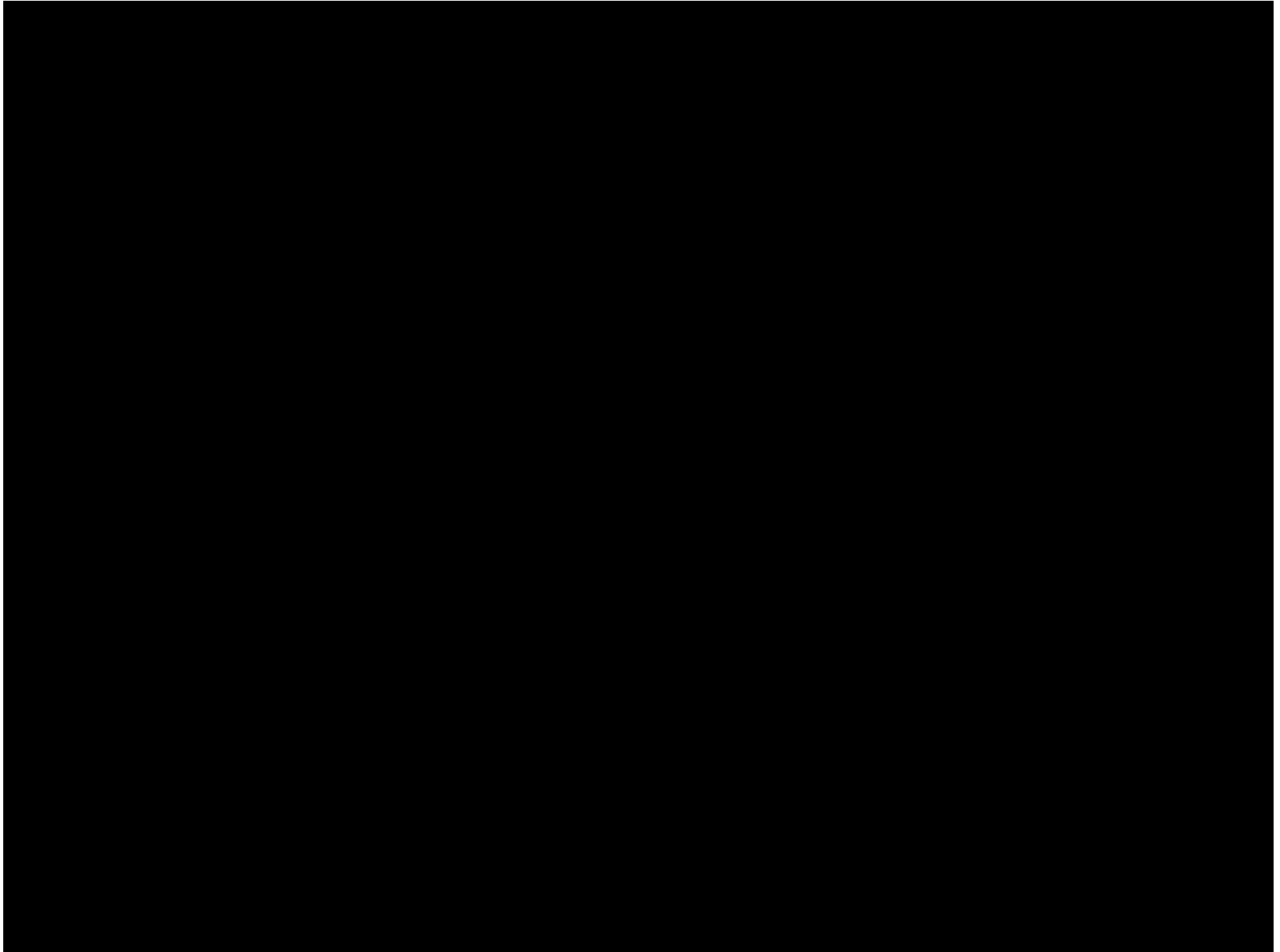
## *Grossly disorganized or abnormal motor behavior (including catatonia)*

- Varies from childlike silliness to unpredictable agitation.
- Problems may be noted in any form of goal-directed behavior.
  - Catatonic behavior is a marked decrease in reactivity to the environment.
    - Negativism
    - Mutism
    - Stupor
    - Catatonic excitement
    - Stereotyped movements
    - Staring
    - Grimacing

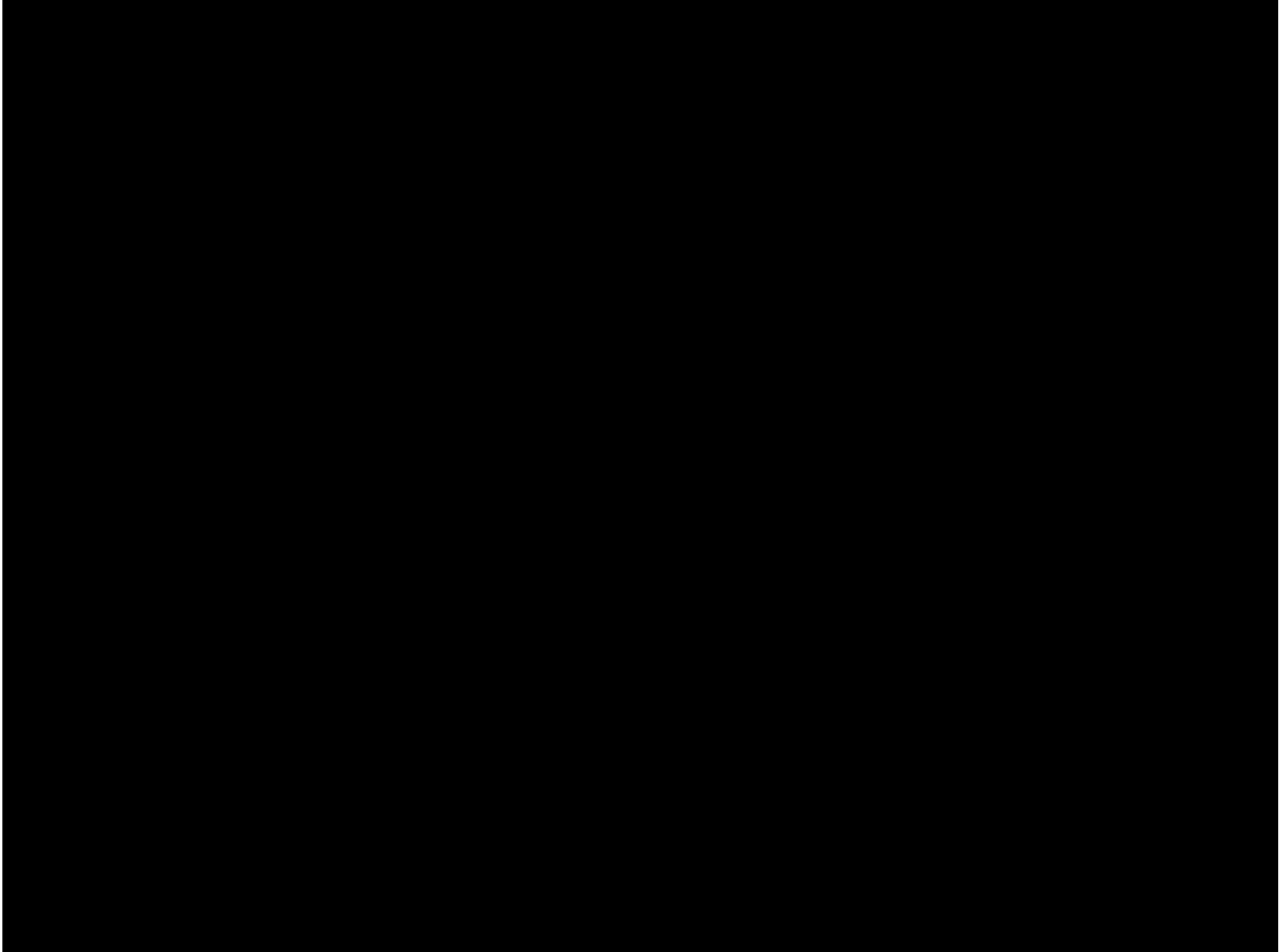
# *Negative symptoms*

- Diminished emotional expression
- Avolition
- Alogia
- Anhedonia
- Asociality

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# Diagnosis and symptoms

## - ICD 10 -

- In the International Classification of Diseases, 10<sup>th</sup> revision, schizophrenia is covered in the chapter F – Schizophrenia, schizotypal and delusional disorders, which are classified under the parts F20 - F29.
- This block brings together schizophrenia, as the most important member of the group, schizotypal disorder, persistent delusional disorders, and a larger group of acute and transient psychotic disorders. Schizoaffective disorders have been retained here in spite of their controversial nature.



# Diagnosis and symptoms

- ICD 10 -

## Schizophrenia, schizotypal and delusional disorders (F20-F29)

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### **F20** Schizophrenia

The schizophrenic disorders are characterized in general by fundamental and characteristic distortions of thinking and perception, and affects that are inappropriate or blunted. Clear consciousness and intellectual capacity are usually maintained although certain cognitive deficits may evolve in the course of time. The most important psychopathological phenomena include thought echo; thought insertion or withdrawal; thought broadcasting; delusional perception and delusions of control; influence or passivity; hallucinatory voices commenting or discussing the patient in the third person; thought disorders and negative symptoms.

# Diagnosis and symptoms

- ICD 10 -

- Clinical picture of schizophrenia is according to ICD-10 defined from the point of view of the presence and expression of primary and/or secondary symptoms (at present covered by the terms positive and negative symptoms).
- The criteria of diagnosis are divided into several groups, which are for the diagnosis of schizophrenia especially important and which are occurring often together.

# Diagnosis and symptoms

- ICD 10 -

- **A)** The hearing of own thoughts, the feelings of thought withdrawal, thought insertion, or thought broadcasting
- **B)** The delusions of control, outside manipulation and influence, or the feelings of passivity
- **C)** Hallucinated voices, which are commenting permanently the behavior of the patient or they talk about him between themselves, or the other types of hallucinatory voices, coming from different parts of the body
- **D)** Permanent delusions of different kind, which are inappropriate and unacceptable in given culture

# Diagnosis and symptoms

- ICD 10 -

- **E)** The lasting hallucinations of every form
- **F)** Blocks or intrusion of thoughts into the flow of thinking and resulting incoherence and irrelevance of speech, or neologisms
- **G)** Catatonic behavior
- **H)** The negative symptoms – but it must be certain that it's not the symptom of depression or medication by neuroleptics
- **I)** Expressed and conspicuous qualitative changes in patient's behavior, the loss of interests, hobbies, aimlessness, inactivity, the loss of relations to others and social withdrawal.

# Diagnosis and symptoms

- ICD 10 -

- ICD – 10 declares for the diagnosis of schizophrenia the necessary presence of one very clear symptom (and usually two more or less clear symptoms), which are belonging to the whatever group from point (a) to (d) or the presence of the symptoms from at least two groups from point (e) to (h), lasting mainly for one month or more.

# Diagnosis and symptoms

- ICD 10 -

- The diagnosis of schizophrenia should not be made in the presence of massive depressive or manic symptoms unless it's clear that schizophrenic symptoms were preceding the affective disturbance.
- Schizophrenia should not be diagnosed in the presence of overt brain disease or during states of drug intoxication or withdrawal.

# Diagnosis and symptoms

- DSM 5 -

- In DSM – 5 schizophrenia has the code 295.90 (F20.9).

DIAGNOSTIC AND STATISTICAL  
MANUAL OF  
MENTAL DISORDERS

FIFTH EDITION

DSM-5

# Diagnosis and symptoms

- DSM 5 -

- A) Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated). At least one of these must be (1), (2), or (3):
  1. Delusions
  2. Hallucinations
  3. Disorganized speech
  4. Grossly disorganized or catatonic behavior
  5. Negative symptoms



# Diagnosis and symptoms

- DSM 5 -

- B) For a significant portion of the time since the onset of the disturbance, level of functioning in one or more major areas is markedly below the level achieved prior to the onset.

# Diagnosis and symptoms

- DSM 5 -

- C) Continuous signs of the disturbance persist for at least 6 months. This 6-month period include at least 1 month of symptoms 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 by two or more symptoms listed in Criterion A present in an attenuated form.

# Diagnosis and symptoms

- DSM 5 -

- D) Schizoaffective disorder and depressive or bipolar disorder with psychotic features have been ruled out because either 1) no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2) if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active-phase and residual periods of the illness.

# Diagnosis and symptoms

- DSM 5 -

- E) The disturbance is not attributable to the physiological effects of a substance or another medical condition.
- F) If there is a history of autism spectrum disorder or a communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia, are also present for at least 1 month (or less if successfully treated).

# Types of schizophrenia

- Paranoid
- Disorganized schizophrenia / Hebephrenia
- Catatonic
- Undifferentiated
- Residual
- Simple
- Other subtypes

# *Paranoid schizophrenia*

- Characterized mainly by the presence of delusions of persecution or grandeur
- Feelings of passive or active control
- Feelings of intrusion
- Megalomaniac tendencies
  
- The delusions are not usually systemized too much, without tight logical connections and are often combined with hallucinations of different senses, mostly with hearing voices.

# *Paranoid schizophrenia*

- Patients typically are tense, suspicious, guarded, reserved, and sometimes hostile and aggressive .
- None of the following: incoherence, loosening of association, flat or grossly inappropriate affect, catatonic behavior, grossly disorganized behavior.
- Intelligence remains intact.
- Age of onset later than catatonic or disorganized type.

# *Disorganized schizophrenia / hebephrenia*

- Disorganized thinking with blunted and inappropriate emotions
- Regression to primitive, disinhibited, and chaotic behavior
- Incoherence
- Loosening of associations



# *Disorganized schizophrenia / hebephrenia*

- Unkempt, messy appearance
- Manerisms, grimacing, inappropriate laugh and joking, pseudophilosophical brooding and sudden impulsive reactions without external stimulation
- Early onset, usually before age 25

# *Catatonic schizophrenia*

- Characterized mainly by motoric activity, which might be strongly increased or decreased
  - Productive form
  - Stuporose form

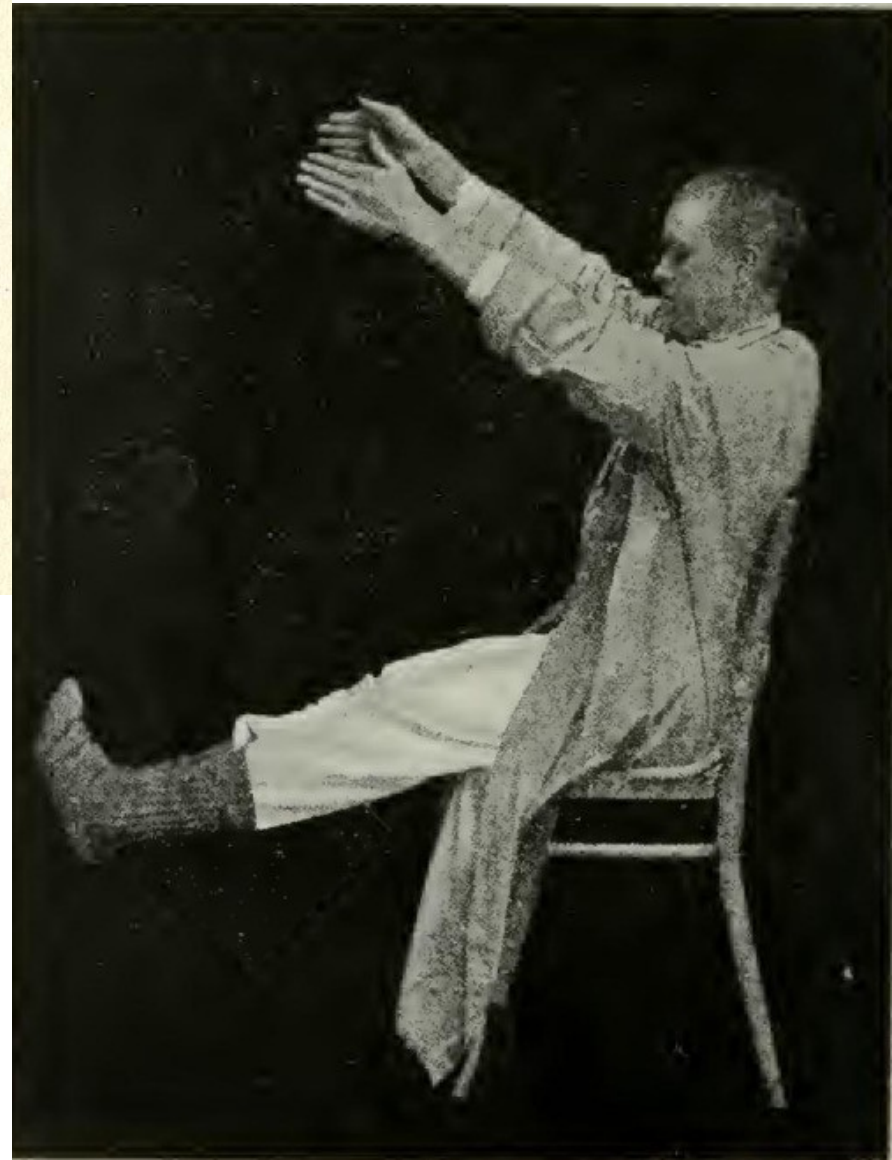
# Catatonic schizophrenia

- examples for *flexibilitas cerea* -



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# *Undifferentiated schizophrenia*

- Prominent delusions, hallucinations, incoherence, or grossly disturbed behavior
- Does not meet the criteria for paranoid, catatonic, or disorganized type.

# *Residual schizophrenia*

- Absence of prominent delusions, hallucinations, incoherence, or grossly disorganized behavior.
- Continuing evidence of the disturbance through two or more residual symptoms (e.g. emotional blunting, social withdrawal).

# *Simple schizophrenia*

- Characterized by early and slowly developing initial stage with growing social isolation, withdrawal, small activity, passivity, avolition and dependence on the others.
- The patients are indifferent, without any initiative and volition.
- There is not expressed the presence of hallucinations and delusions.

# *Childhood-onset schizophrenia*

- Childhood-onset schizophrenia (COS) is a rare and severe form of schizophrenia characterized by an onset of psychotic symptoms by the age of 12.
- Schizophrenia with childhood onset has the same phenomenological features as schizophrenia in adolescence and adulthood.
- It is estimated to occur in less than 1 of 10 000 children.

# Course

- **Premorbid epoch** – symptom manifestation before the onset of overt, positive psychotic symptoms
- **Onset to illness** – the onset of positive psychotic symptoms
- **Middle course**
- **Late course**



# Prognosis

- In terms of overall prognosis, some investigators have described a loose rule of thirds: approximately one third of patients lead somewhat normal lives, one third continue to experience significant symptoms but can function within society, and the remaining one-third are markedly impaired and require frequent hospitalization. Approximately 10% of this final third of patients require long-term institutionalization.
- In general, women have a better prognosis than men.

# Treatment



# Treatment

- Clinical management of the schizophrenic patient may include hospitalization and antipsychotic medication in addition to psychosocial treatments.
- Inpatient or outpatient basis

# Treatment

- **Pharmacologic** – The antipsychotics include first-generation dopamine receptors antagonists and the second-generation agents such as serotonin-dopamine antagonists (SDAs).

# Treatment

- **Electroconvulsive therapy (ECT)** – Can be effective for acute psychosis and catatonic subtype. Patients in whom the illness has lasted less than 1 year are most responsive. ECT is a promising treatment for refractory positive symptoms. It has been shown to have synergetic efficacy with antipsychotic drugs.

# Treatment

- **Psychosocial**
  - Behavior therapy
  - Group therapy
  - Family therapy
  - Supportive psychotherapy
  - Social skills training
  - Support groups

# List of literature

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