Psychotic Disorders in Children & Adolescents

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DSM IV Psychotic Disorders

- Schizophrenia & Schizophreniform Disorders
- Schizoaffective Disorder
- Brief Psychotic Disorder
- Delusional Disorder
- Shared Psychotic Disorder
- Psychotic Disorder NOS
- Substance – Induced Psychotic Disorder
- Psychotic Disorder Due to a Medical Condition
- Schizotypal Personality Disorder

DSM-5 Psychotic Disorders

- Delusional Disorder
- Brief Psychotic Disorder
- Schizophreniform Disorder
- Schizophrenia
- Schizoaffective Disorder
- Substance/Medication-Induced Psychotic Disorder
- Shared Psychotic Disorder
- Psychotic Disorder NOS
- Psychotic Disorder Due to another Medical Condition
- Schizotypal Personality Disorder

DSM-5 Psychotic Disorders

- Catatonia:
  - Without another mental disorder
  - Due to another medical condition
  - Unspecified

- Other specified schizophrenia and other psychotic disorder:

  Persistent auditory hallucinations

  Delusions with significant overlapping mood episodes

  Attenuated psychosis syndrome

  Delusional symptoms in partner of individual with delusional disorder

- Schizotypal Personality Disorder

Psychosis – Defined

- Severe disruption of thought and behavior resulting in the loss of reality testing.
- Based on overt changes in a person's behavior and functioning, with evidence of disrupted thinking evident on mental status examination. (AACAP 2013)

Key Features:

1. Delusions
2. Hallucinations
3. Disorganized Thinking (Speech)
4. Grossly Disorganized or Abnormal Motor Behavior
5. Negative Symptoms

Psychosis – Key Features DSM-5

Delusions – fixed beliefs that are not amenable to change in light of conflicting evidence. Can be bizarre or not.

- Persecutory
- Referential
- Grandiose/Erotomanic
- Nihilistic
- Somatic

Psychosis – Key Features DSM-5

Hallucinations:

- Perceptual-like experiences that occur without an external stimulus.
- They are vivid and clear, with the full force and impact of normal perceptions, and not under voluntary control.
- Are distinct from an individual's own thoughts.
- May occur in any sensory modality.
- Must occur in context of clear sensorium; (i.e., not sleep related – hypnagogic and hypnopompic phenomena).

Psychosis – Defined

Disorganized Thinking (Speech):

- Inferred from speech
- Tangentially
- Derailment
- Looseness of Associations
- Incoherence (word salad)

Psychosis – Defined

Negative Symptoms:

- Diminished emotional expression (facial expression, hand movements, prosody of speech)
- Avolition (decrease in motivated self initiated purposeful activities)
- Alogia (decrease in speech output)
- Anhedonia (lack of or decrease in pleasure from positive stimuli).

Psychosis – Prognostic Value

Prognostic Value?

- Adults – equate psychosis with severe psychopathology
- Children – seen in serious psychopathology, non-psychotic psychopathology, psychosocial adversity & physical illness & normal development

Psychotic Disorders in Children & Adolescents

Why do we care about psychosis?

Schizophrenia Outcomes

- First Episode Psychosis (FEP) – 96% reach clinical remission with treatment
- 80% relapse within 5 years of first episode

<u>Recurrences associated with</u>

- Persistent residual psychotic symptoms
- Progressive loss of grey matter
- Less responsiveness to antipsychotic meds
- More social and vocational disability

(Stephenson et al, JAMA 2000; Penn et al, Am J Psychiatry 2005)

Psychosis – Implications

Psychosis confers more severe course of illness

Chicago Follow Up Study

- 15 year prospective study of 274 young (age 23) psychiatric inpatients (Index Admission)
- 64 with Schizophrenia / 12 Schizophreniform disorder
- 81 with other psychosis (46% Bipolar Disorder, 35% Unipolar Depressed)
- 117 non-psychotic patients (62% Depressive D/O's)

(Harrow, Schizophr Bull 2005)

Psychosis – Implications

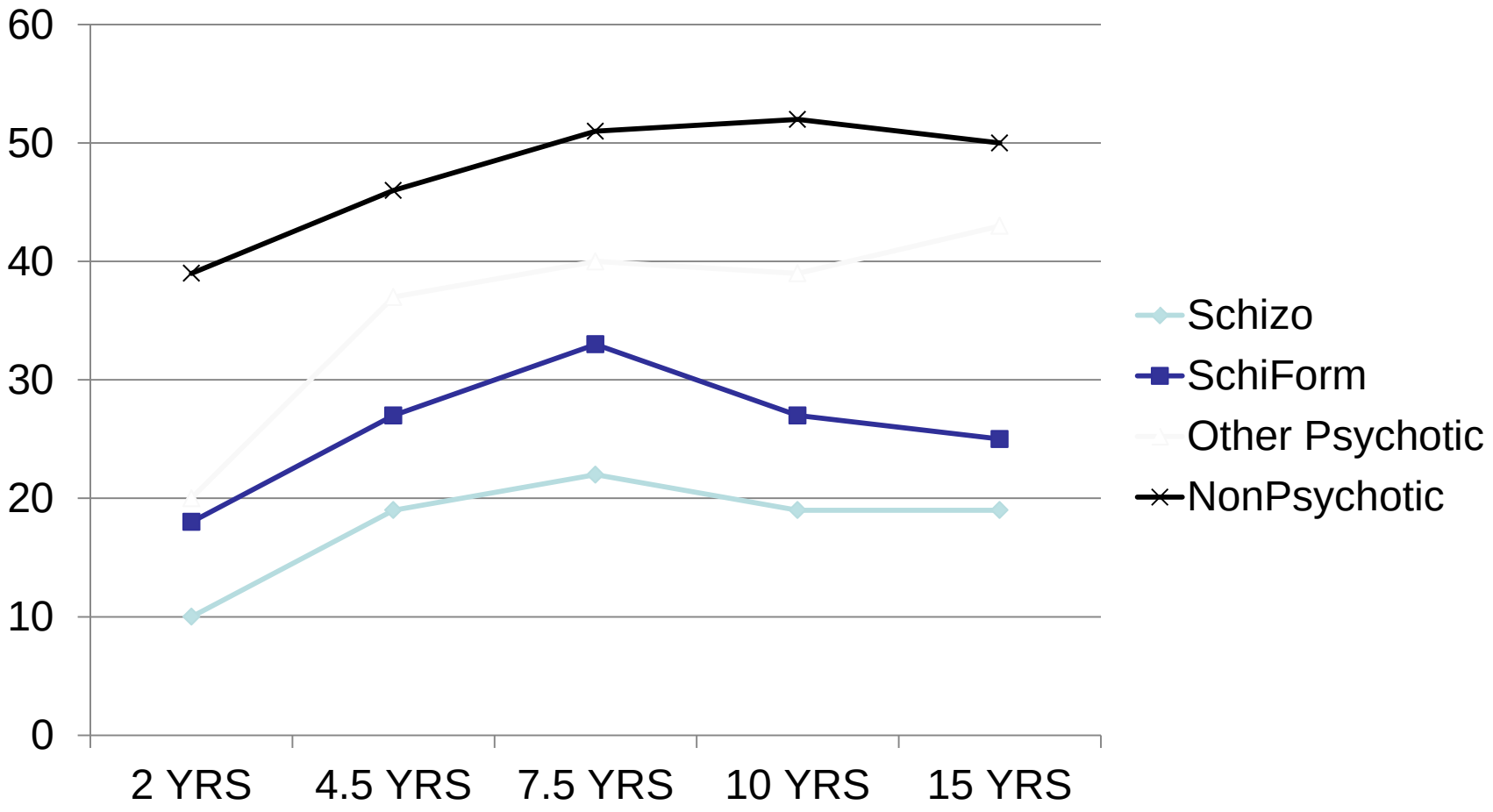
Chicago Follow Up Study

Definition of Recovery: minimum of 1-year in any of 5 follow up periods:

- Absence of psychotic symptoms
- “Adequate” Psychosocial Functioning – at least ½ time
- Absence of very poor social activity level
- No psychiatric admissions

Periods of Recovery

(y-axis % with 1 year recovery in follow up period)



Psychosis as a Continuum

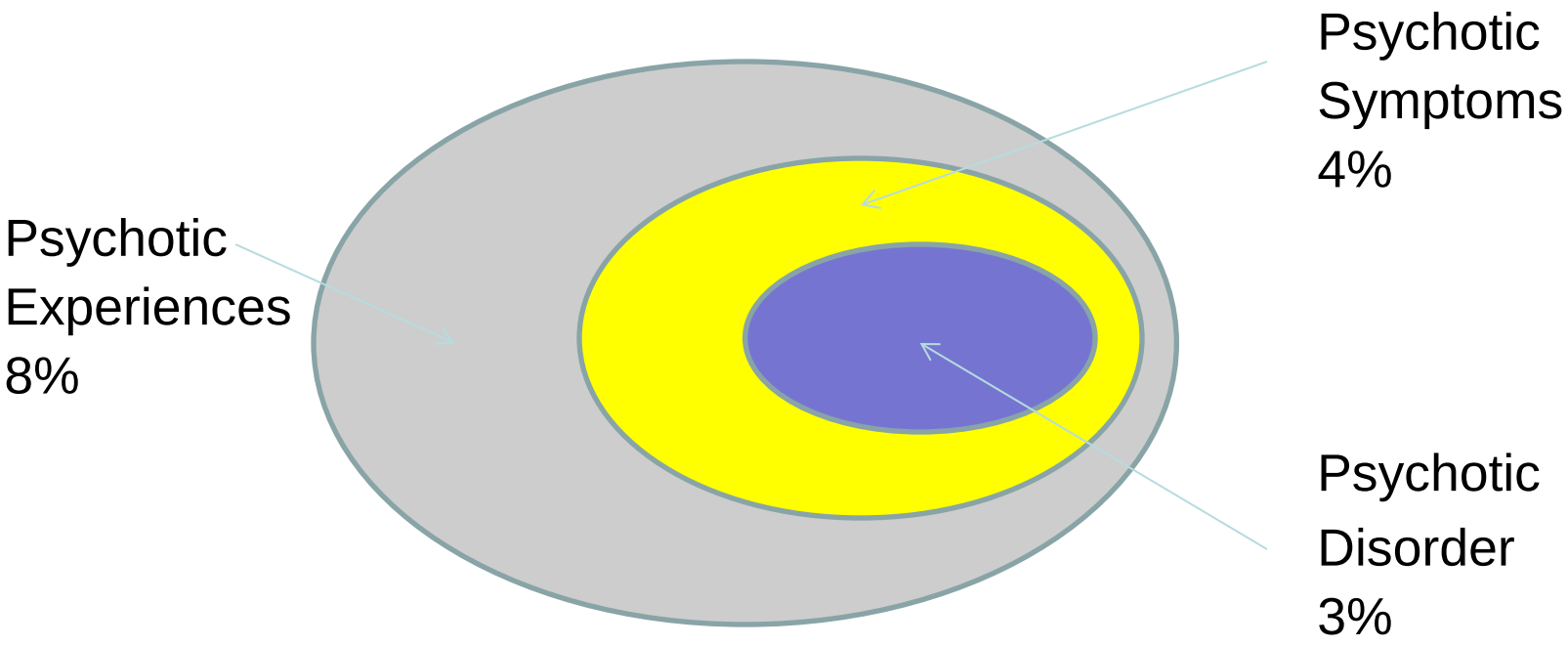
View that psychosis phenotype is expressed at various levels in a population.

Assumption is that experiencing symptoms of psychosis – such as hallucinations and delusions is not inevitably associated with the presence of a psychotic disorder.

(van Os, Psychological Medicine 2009)

Psychosis as a Continuum

Meta-analysis of 35 cohorts investigating prevalence and incidence of psychotic phenotypes in community samples
(van Os, Psychological Medicine 2009)



Psychosis as a Continuum

Meta-analysis of 35 cohorts investigating prevalence and incidence of psychotic phenotypes in community samples

Summary

Incidence 3%

Prevalence 5%

Majority of psychotic experiences in the population are transitory and disappear in 75% - 90% of individual

(van Os, Psychological Medicine 2009)

Psychosis in Childhood and Adolescence

Psychosis in Children

- 1% in community samples and increases with age (ECA)
- In clinical samples – 4% children increases to 8% in adolescents
- Fennig et al -18/341 (5.3%) 1st-admission psychotic adults endorsed hallucinations <age 21 (most had not revealed hallucinations to parents/caregivers)

Regier DA, Arch Gen Psych (1984); Fennig S, J Nerv Ment Dis (1997)

Psychosis in Childhood and Adolescence

Hallucinations can be seen in healthy children

- Preschool children – hallucinations vs. sleep related phenomena and/or developmental phenomena (imaginary friends/fantasy figures)

- School age children – hallucination more ominous

Prognosis for Youth with Hallucinations

Conduct Disorder & Emotional Problems

Review of 4767 inpts & outpts with primarily CD/ODD

- 1.1% had hallucinations
- Followed for average of 17 years (age 30)

Compared with age, gender, diagnosis matched controls without hallucinations:

- hallucinations were not a significant predictor of outcome, nor increased risk for psychosis, depression or other psychiatric illnesses
- 50% continued to have hallucinations at follow up

Garralda ME, Psychol Med (1984)

Prognosis for Youth with Hallucinations

Then compared subjects with CD/ODD and hallucinations with adolescents with “psychosis of late onset” – over age 16:

- Found second group had more delusions, abnormalities in language production, inappropriate affect, bizarre behavior, hypoactivity and social withdrawal.

Garralda ME, Psychol Med (1985)

Prognosis for Youth with Hallucinations

Findings from a psychiatric emergency service:

- 2-month time period reviewed for youth with hallucinations without psychosis – 62 subjects
- 35 under age 13, mean age 11.4
- 6 subjects VH only, 32 subjects AH only, 24 subjects both VH & AH
- Diagnoses – Depression 34%, ADHD 22%, Disruptive Behavior Disorder 21%, Other 23%

Edelsohn GA, Ann NY Acad Sci, (2003)

Prognosis for Youth with Hallucinations

Findings from a psychiatric emergency service:

- AH's "telling child to do bad things" associated with DBD 69% of the time
- AH's "invoking suicide" associated with depression 82% of the time
- Dispositions: 44% admitted, 39% referred to outpatient services, 3% AMA, 14% "missing"

Edelsohn GA, Ann NY Acad Sci, (2003)

Psychosis in Childhood and Adolescence

Psychosis in a Pediatric Mood/Anxiety Disorder Clinic:

N = 2031 screened for psychosis:

- 5% - definite psychotic symptoms – at least 1 hallucination with score of 3 (definite) and/or at least 1 delusion with score of 4 (definite) – 18 < 13; 73 ≥ age 13

- 5% - probable psychotic symptoms – at least 1 hallucination with score of 2 (suspected or likely) and/or at least 1 delusion with score of 3 (suspected or likely)

- 90% - with no psychotic symptoms

Ulloa RE, JAACAP (2000)

Psychosis in Childhood and Adolescence

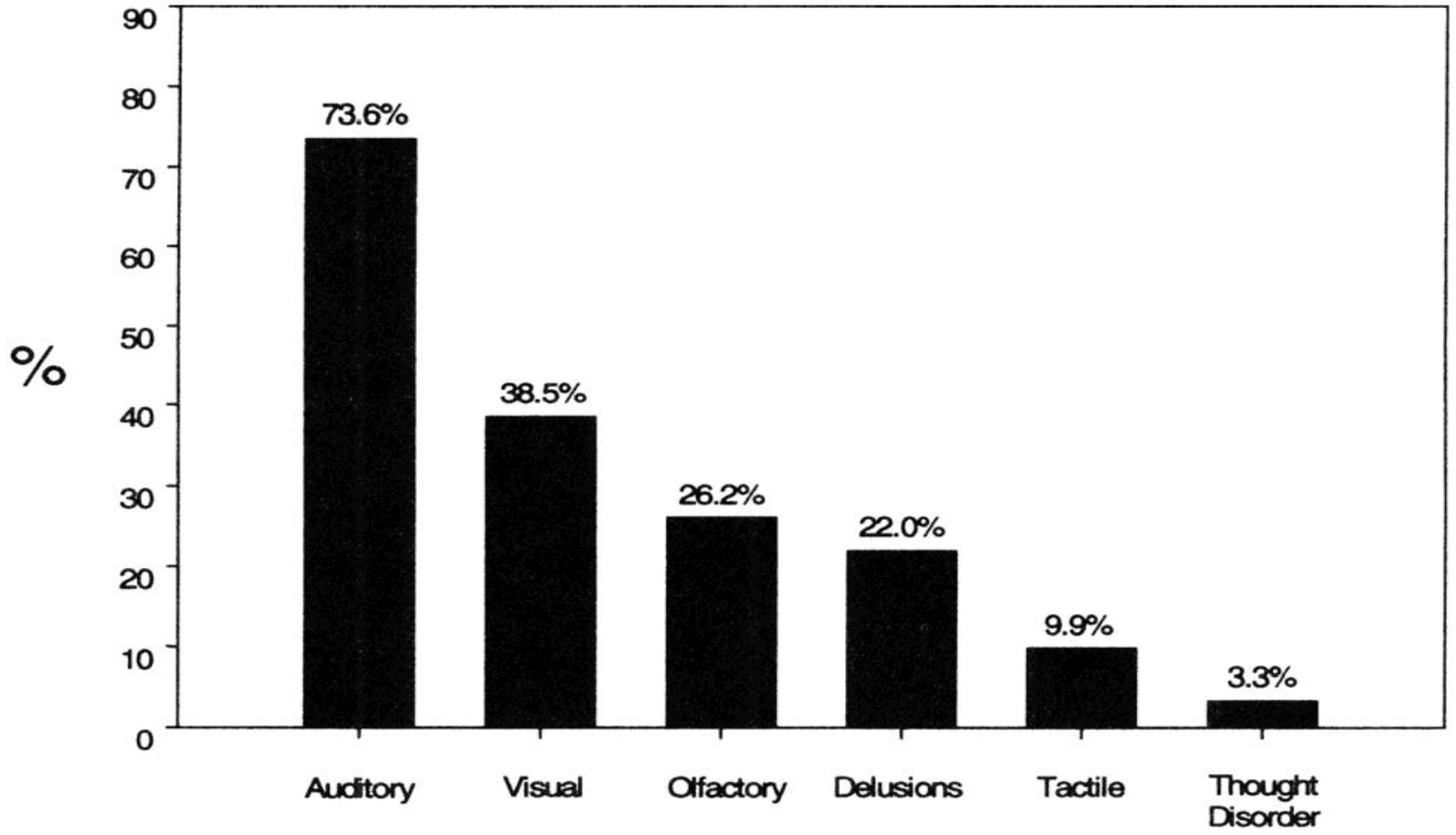
Psychosis in a Pediatric Mood/Anxiety Disorder Clinic:

For patients with definite psychotic symptoms:

- 24% Bipolar disorder
- 41% MDD
- 21% Depressive Disorders but not MDD
- 14% Schizophrenia Spectrum Disorders – 4 patients with schizophrenia; 9 with SAD

Ulloa RE, JAACAP (2000)

Ulloa 2000-Distribution of Psychotic Symptoms in “Definite” group



Psychosis in Childhood and Adolescence

Psychosis in a Pediatric Mood/Anxiety Disorder Clinic:

Interesting findings:

- Distribution of psychotic symptoms were similar for definite vs. probable psychosis
- No difference between children & adolescents in frequency of hallucinations & delusions
- Adolescents had higher frequency of AH's coming from "outside the head"
- Thought disorder present only in adolescents

Ulloa RE, JAACAP (2000)

Psychosis in Childhood and Adolescence

Psychosis in a Pediatric Mood/Anxiety Disorder Clinic:

Patients with definite vs. non-psychotic
youths more likely to have:

- Major Depression
- Bipolar Affective Disorder
- Anxiety Disorder – generalized anxiety or Panic disorder

Also – definite patients more likely to have suicidal ideation – mediated by presence of mood disorder

Ulloa RE, JAACAP (2000)

Psychosis in Trauma Spectrum Disorders

Trauma-related hallucinations reported in:

- 9% abused children seen in pediatric clinics
- 20% child sexual abuse victims - inpatient samples
- 75% abused children meeting dissociative disorder criteria

Kaufman J, JAACAP (1997)

Psychosis in Trauma Spectrum Disorders

Hallucinations characterized by:

- Hearing perpetrator's voice/seeing face
- Often nocturnal
- Associated with impulsive, aggressive and self-injurious behavior, nightmares and trance-like states
- Less likely to be associated with negative symptoms (withdrawn behavior, blunted affect), formal thought disorder or early abnormal development
- Typically resolve with intervention/safety

Kaufman J, JAACAP (1997)

Psychosis in Major Depressive Disorder

- 50% of prepubertal children with major depression may have hallucinations of any type
- Up to 36% may have complex auditory hallucinations
- Delusions are more rare

Chambers WJ, Arch Gen Psychiatry (1982)

Psychosis in Pediatric BPAD

COBY Study (Course & Outcome of Bipolar Youth Study)

N = 413 Youth ages 7 -17

Subjects interviewed every 39 weeks for 192 weeks

Psychosis:

- 16% of participants at Index Episode
- 17% in Follow Up period

Birmaher et al. Am J Psych 2009

Psychosis in Bipolar Affective Disorder

- Most common psychotic symptoms are mood-congruent delusions – mainly grandiose in nature
- Psychotic features appear in context of affective symptoms
- Family history of affective psychosis aggregate in probands with bipolar disorder

Pavuluri MN, Journal of Affective Disorders (2003)

Psychosis in Childhood and Adolescence

Substance Use Disorders

- Schizophrenia & SUD – highly comorbid
- Amphetamines
- PCP
- MDMA
- Cannabis

Psychosis in Childhood and Adolescence

Organic Syndromes

- Seizure disorders
- Delirium
- CNS lesions
- Metabolic/Endocrine
- Neurodegenerative disorders
- Developmental disorders
- Toxic encephalopathy
- Infectious agents
- Autoimmune disorders

Childhood Onset Schizophrenia

Criteria:

- Delusions
- Hallucinations
- Disorganized Thinking (Speech)
- Grossly disorganized behavior/catatonia
- Negative symptoms

- 6-month minimum duration – includes prodrome, active and residual phases

Childhood Onset Schizophrenia Epidemiology

Prevalence

- Childhood estimated 1/10,000 – 30,000
- Adolescence – increases with age
- Likely to be diagnosed clinically but not supported when given a structured diagnostic interview

Sex Ratio

- Approximately 4:1
- Ratio trends to even out as age increases

Childhood & Adolescent Onset Schizophrenia Clinical Phenomenology

Hallucinations:

- AH's - Most common positive symptom – 80%
- VH's – 30% to 50% of patients and usually accompanied by AH's
- Tactile Hallucinations – rare

Delusions:

- less common than adult onset – 45%
- Persecutory & somatic more common
- Though control & religious themes rare (3%)
- Delusions more complex in older subjects

Childhood & Adolescent Onset Schizophrenia Clinical Phenomenology

Cognitive Impairment

- Significant impact on mean IQ
- Most patients function in low average to average range (82 -94)
- Decline from COS to adolescence due to failure to acquire new information/skills, not a dementing process (Bedwell 1999)

Childhood & Adolescent Onset Schizophrenia
Course of illness

Prodrome

- Weeks to months – functional impairment
- Wide range of non-specific symptoms including unusual behaviors &preoccupation, social withdrawal & isolation, academic problems, dysphoria, vegetative symptoms

Acute Phase – 1 to 6 months, positive symptoms

Recovery Phase – months, negative symptoms common, depression

Childhood & Adolescent Onset Schizophrenia Risk Factors

Genetic risk
- 50% heritability

- Non-genetic biologic risk
  - Urbanicity
  - Prenatal infections (influenza)
  - Prenatal toxic exposure (lead)
  - Obstetrical complications
  - Traumatic (head trauma, perinatal period to adolescence)
  - Autoimmune (Rh incompatibility, increasing risk with multiple births)
  - Nutrition (starvation, omega-3 deficiency)
  - Heavy cannabis, other psychotogenic drug exposure

- Non-heritable genetic risk
  - Age of father >50; probably natural mutations in spermatogenesis

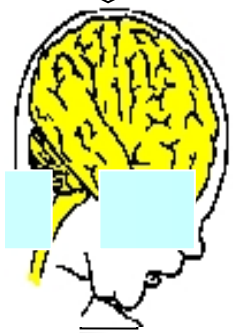
Early Insults

e.g. Disease Genes, Possibly Viral Infections, Environmental Toxins

Social and Environmental Triggers

Psychosis

Increasing Positive symptoms



Biological Vulnerability: CASIS

Disability

Brain Abnormalities

Structural
Biochemical
Functional

Cognitive Deficits

Affective Sx: Depression

Social Isolation

School Failure

After Cornblatt, et al., 2005

Psychotic Disorders Dimensional Scale DSM-5

	Hallucinations	Delusions	Disorganization	Abnormal Psychomotor Behavior	Restricted Emotional Expression	Avolition
0	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present
1	Equivocal (severity or duration not sufficient to be considered psychosis)	Equivocal (severity or duration not sufficient to be considered psychosis)	Equivocal (severity or duration not sufficient to be considered disorganization)	Equivocal (severity or duration not sufficient to be considered abnormal psychomotor behavior)	Equivocal decrease in facial expressivity, prosody, or gestures	Equivocal decrease in self-initiated behavior
2	Present, but mild (little pressure to act upon voices, not very bothered by voices)	Present, but mild (delusions are not bizarre, or little pressure to act upon delusional beliefs, not very bothered by beliefs)	Present, but mild (some difficulty following speech and/or occasional bizarre behavior)	Present, but mild (occasional abnormal motor behavior)	Present, but mild decrease in facial expressivity, prosody, or gestures	Present, but mild in self-initiated behavior
3	Present and moderate (some pressure to respond to voices, or is somewhat bothered by voices)	Present and moderate (some pressure to act upon beliefs, or is somewhat bothered by beliefs)	Present and moderate (speech often difficult to follow and/or frequent bizarre behavior)	Present and moderate (frequent abnormal motor behavior)	Present and moderate decrease in facial expressivity, prosody, or gestures	Present and moderate in self-initiated behavior
4	Present and severe (severe pressure to respond to voices, or is very bothered by voices)	Present and severe (severe pressure to act upon beliefs, or is very bothered by beliefs)	Present and severe (speech almost impossible to follow and/or behavior almost always bizarre)	Present and severe (abnormal motor behavior almost constant)	Present and severe decrease in facial expressivity, prosody, or gestures	Present and severe in self-initiated behavior