Psychosis in Children and Adolescents

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March 31, 2016

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

Psychosis Definition(s)

Narrow Definition
- delusions or prominent hallucinations
- Hallucinations characterized by absence of insight

Moderately Narrow Definition
- Prominent hallucinations with insight intact

Broadest Definition
- Delusions & Hallucinations
- Disorganized Speech & Behaviors

(DSM-IV 1994)

Psychosis – Defined (Maybe)

Defined??

- Narrow Definition: delusions or prominent hallucinations with absence of insight
- Broad Definition: delusions, hallucinations, disorganized Speech, thoughts and behavior

Prognostic Value?

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

Prevalence of Psychotic Symptoms in Childhood and Adolescence

Meta-Analysis of 19 studies

- Median Prevalence of Psychotic Symptoms in 9-12 year olds was 17%
- Median Prevalence of Psychotic Symptoms in 13 - 18 year olds was 7.5%
- Psychotic Symptoms are common in young people, especially in childhood

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
- Fenning 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

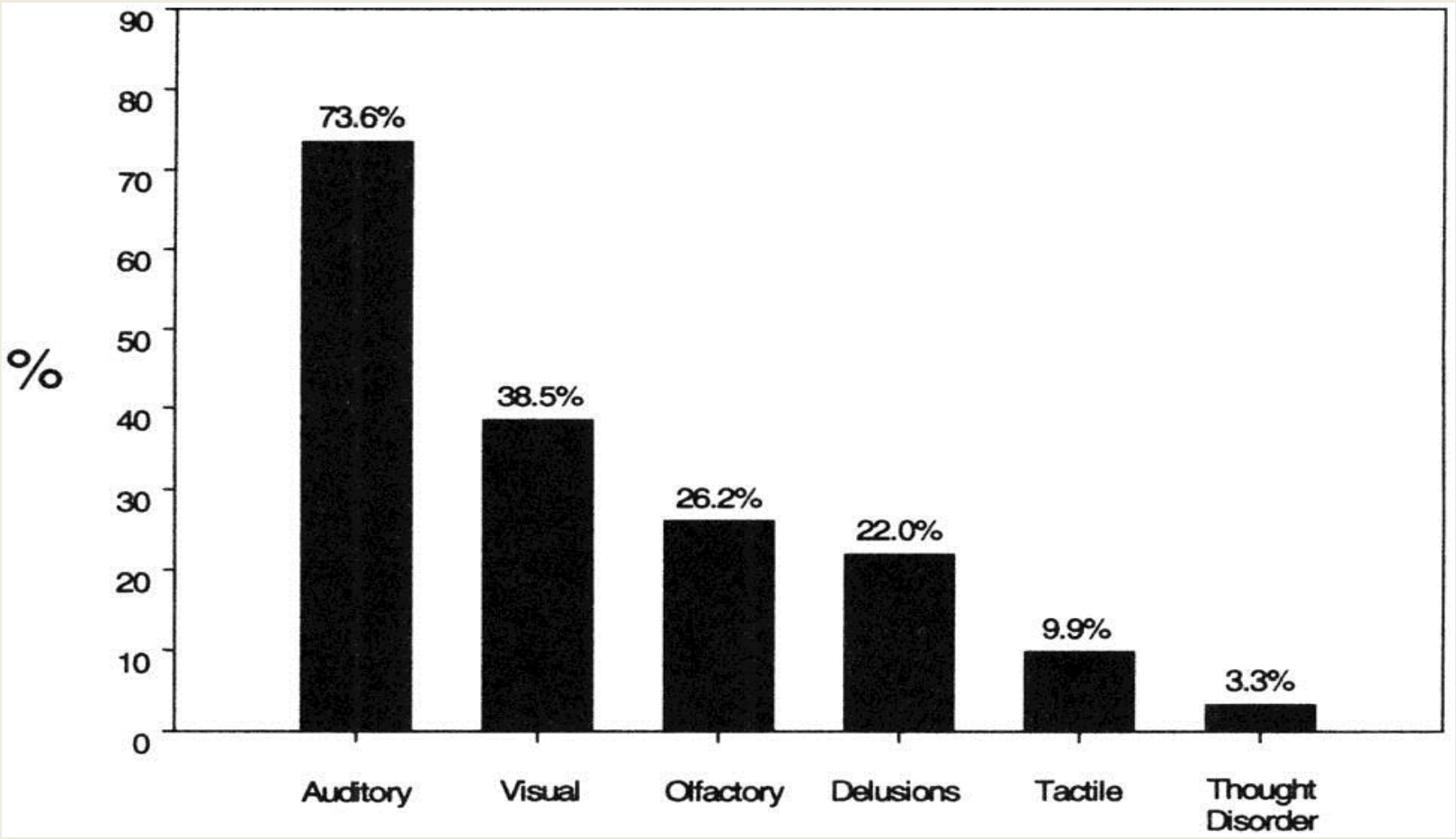
Psychosis in a Pediatric Mood/Anxiety Disorder Clinic:

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 Bipolar Affective Disorder

- Prevalence of psychotic features in pediatric bipolar disorder range between 16% to 87.5% depending on age and methods of sampling
- 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 encephalopathies
- Infectious agents
- Autoimmune disorders

Childhood Onset Schizophrenia

Criteria:

- Delusions
- Hallucinations
- Disorganized 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
- 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

Prodromal Phase of Schizophrenia

- Prodromal Phase of Schizophrenia Course has long been recognized

- Significant negative social consequences of schizophrenia emerge in prodromal phase of the illness

Proposed Attenuated Psychosis Syndrome

All six of the following:

a) Characteristic symptoms: at least one of the following in attenuated form with intact reality testing, but of sufficient severity and/or frequency that it is not discounted or ignored;

   i. Delusions
   ii. Hallucinations
   iii. Disorganized Speech

Proposed Attenuated Psychosis Syndrome

b) Frequency/Currency

symptoms must be present in the past month and occur at an average frequency of at least once per week in past month

c) Progression

symptoms must have begun in or significantly worsened in the past year

d) Distress/Disability/Treatment Seeking

symptoms are sufficiently distressing/disabling to patient/parent/guardian to lead them to seek help

Rationale for APS
Proposed Inclusion in DSM-V

- Outcomes in Schizophrenia and Psychosis
- Duration of Untreated Psychosis (DUP) as a moderator of outcome
- Prodromal phase of schizophrenia
- Psychosis as a continuum

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)

Duration of Untreated Psychosis as Moderator of Outcome

DUP – time elapsed between onset of frank psychotic symptoms and initiation of treatment

Meta-analysis of 43 studies - patients with FEP:

Longer DUP associated with:

- Response to antipsychotic medication - including global psychopathology, positive and negative symptoms and functional outcomes
- Associated with severity of negative symptoms

(Perkins, Am J Psychiatry 2005)

DUP as Moderator of Outcome

Outcomes in Schizophrenia

- Shorter DUP correlated with better Social functioning in FEP patients at 1 and 2 year follow up (N = 200) (Addington, Psych Med 2004)
- Shorter DUP in FEP associated with significantly higher levels of functioning at 5, 10, 15 and 20 year follow up with strongest association with DUP < 6 months [Mean DUP 84 weeks] (N = 402) (Kua, Acta Psych Scan 2003)
- Lack of Correlations – No difference in function or symptoms severity at 6 month follow up in neuroleptic naïve FEP; mean DUP 60 weeks (N = 74) (Ho, Am J Psych 2000)

DUP as Moderator of Outcome

Neurocognitive Deficits in Schizophrenia including FEP

- Neurocognitive deficits are well established and predicts impairments in functioning even when controlling for positive symptoms
- Deficits include processing speed, verbal & working memory, sustained attention, and executive functions (reasoning, planning, problem solving)
- Study of 102 FEP; DUP (mean 46 weeks) did not predict cognitive deficits at baseline or after 16 weeks of AP treatment

(Goldberg, Schizophrenia Res 2009)

Prodromal Phase of Schizophrenia

ABC Study of Schizophrenia

N = 232 FEP – index admission for Schizophrenia

Ages 15 to 55 at intake

Used IRAOS to assess prodromal phase of illness

- 73% started with non-specific or negative symptoms
- 20% started with positive and negative symptoms
- 7% started with positive symptoms only

(Hafner, Eur Arch Psych Clin Neuro 1999)

Prodromal Phase of Schizophrenia

Prodromal Time Course:

- A minority of subjects (18%) showed acute onset of prodromal symptoms within 1 month of index admission
- A majority of subjects (68%) showed chronic onset with 1st symptoms appearing > 1 year of index admission
- Psychotic symptoms in prodrome averaged 1.1 years in length with peak of symptoms 2 months prior to index admission
- Mean lapsed time from illness onset to 1st psychotic symptom was 5 years

Prodromal Phase of Schizophrenia

Most common early signs of illness reported by patient:

Ranking	Sign	Total % N = 232	Men % N = 108	Women % N = 124
1	Restlessness	19	15	22
2	Depression	19	15	22
3	Anxiety	18	17	19
4	Think/Concentration	16	19	14
5	Worrying	15	9	20*
6	Self-Confidence	13	10	15
7	Energy/Slowness	12	8	15
8	Poor Work Performance	11	12	10
9	Social Withdrawal	10	8	12

Prodromal Phase of Schizophrenia

Prodrome & Social Disability:

- Compared to controls – subjects with Schizophrenia had significantly impaired levels of social role functioning at index admission (education, occupation, employment, income, partnership & accommodation)

- Social role deficits appeared in prodromal phase 2 – 4 years before index admission

- The younger the subjects were at age of 1st symptoms in prodrome – the lower their social development at admission

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

Summary

Incidence 3%

Prevalence 5%

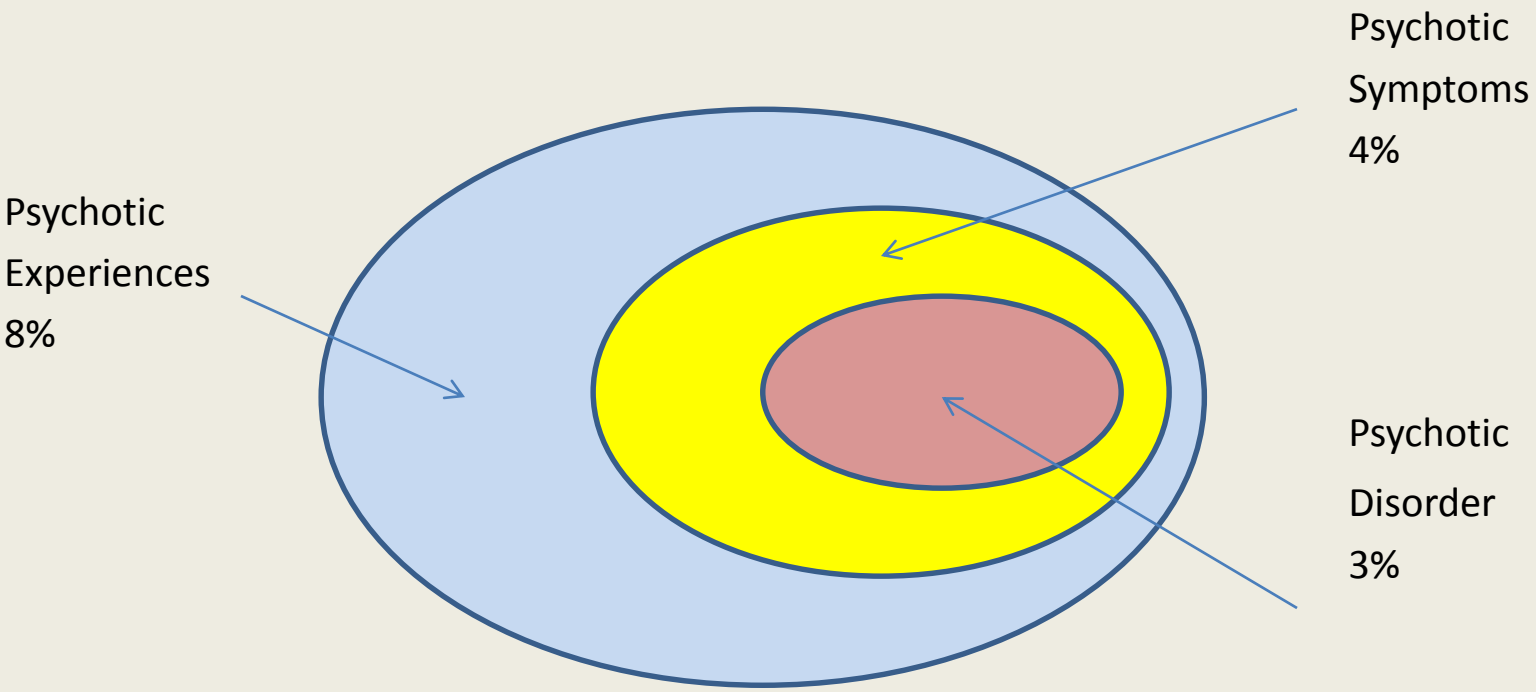
Majority of psychotic experiences in the population are transitory and disappear in 75% - 90% of individual

(van Os, Psychological Medicine 2009)

Psychosis as a Continuum

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

(van Os, Psychological Medicine 2009)



Transition to Psychosis of High Risk Individuals

Help-seeking patient populations

Bottom line – despite being at increased risk for conversion to psychosis – less than 40% will convert in a relatively short period of time.

Meta Analysis of conversion rates of 2500 HR individuals:

- 18% at 6-months
- 22% at 1 year
- 29% at 2 years
- 32% at 3 years
- 36% after 3 years

(Fusar-Poli et al. Arch Gen Psych 2012)