Auditory Hallucinations in Youth: The Good, the Bad, and the Reassuring

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Objectives

- Participants will learn about the prevalence and patterns of auditory hallucinations in youth.
- Participants will become familiar with approaches to assess possible auditory hallucinations in youth.
- Participants will be able to describe appropriate management of possible auditory hallucinations in youth.

Disclosures

- I have no financial interests to disclose.
- I will discuss FDA off-label use of medications, but I will designate it as such.
Key Points

- Psychotic-like symptoms are fairly common in childhood and adolescence
- Schizophrenia is exceedingly rare in children (<1/10,000), and still very uncommon in adolescents
- Most youth who experience psychotic-like symptoms will never develop a primary psychotic disorder
- Most people who do develop schizophrenia will pass through a non-specific “prodrome” that may only be identifiable in hindsight

What is psychosis?

Hallucinations or delusions without insight
Delusions or hallucinations
Grossly disorganized speech or behavior
Loss of contact with consensual reality

The Continuum Perspective

- Hallucinations and perceptual abnormalities occur outside of psychopathology in children, adolescents, and adults (PLIKS)
  - Barratt and Etheridge 1992, Verdoux and van Os 2002
  - Adolescents: McGorry 1995
  - Poulton 2000: 14.1% of 11 year old children in population sample had psychosis-like symptoms
  - Self-report questionnaires have shown 6.0-58.9% of adolescents reporting psychosis-like symptoms
The Continuum Perspective: The ALSPAC Cohort

- 6455 general population 12.9 year olds given a structured questionnaire followed by a triggered semi-structured interview (PLIKSi)
- 5.6% of 12 year old children in population sample assessed as having had definite psychotic spectrum symptoms. 3.62% had definite or suspected core symptom of schizophrenia

Horwood 2008
The Continuum Perspective

- In a non-clinical population of German adolescents 5.2% experienced “thought interference” and 4.2% experienced “thought perseveration.” (Meng, 2009)
- In non-clinical populations of adolescents “prodromal” symptoms have been found in 10-50% of subjects (McGorry 1995)
- In clinical populations of adolescents with non-psychotic disorders, 15% have been found to have “ultra high risk” characteristics (Salokangas 2004)

Interview: Basic

- Target to developmental level
- Join first, ask later
- Start positive or neutral, then ask ?’s in increasing order of severity(…mostly)
- Maintain a consistent tone
- Avoid compound and leading questions
- Watch for nonverbal cues and avoidance
- Normalize: “Lots of kids have heard voices. Have you heard voices?”

Interview: Conviction

- How sure are you?
  - “Really, really sure?”
  - “60% sure?”
- Is it possible it’s your imagination?
- Could the voice actually be your own thoughts?
- Could your mind be playing tricks on you?
- How would you know if you were wrong?
- BUT DON’T CONFRONT OR CHALLENGE!
Interview: Developmental Issues
• Younger children can have difficulty distinguishing inner speech from hallucination
• But even young children, when pressed, can often distinguish between real and “make believe” or “imaginary”
• Ilogil thinking and loosening of associations decreases in normal children by age 7, and are rare by age 10 (Caplan 1994)
• Imaginary friends rarely cause distress/impairment
• Teens may be trying to assume outsider identity

Interview: Auditory Hallucinations
• Onset
• Frequency
• Duration
• Context/Triggers
• Explanatory Models / Delusional Interpretations
• Degree of Distress or Preoccupation

Interview: Parents
• Parents better at describing observable than internal symptoms
  • 57% of mothers of adolescents admitted with 1st episode of psychosis unaware of the psychotic symptoms (de Haan 2004)
• Be attuned to the many influences of family history:
  • Parent may have psychosis
  • Parent may have specific model of psychosis
Interview: Obstacles

- Patients and families may need breaks or diversions to less troubling topics or activities
- Active symptoms may make participation difficult
  - Look for signs of distraction, preoccupation, paranoia
- Disorganization and cognitive impairment may require developmental adjustments, closed-ended questions, redirection, limit-setting, temporal or spatial anchors, or just patience
- Negative symptoms can block expression of affect, so ask

“Atypical” Symptoms

- Inconsistent reports
- Overly detailed descriptions suggestive of fantasy or imagination
- Highly context-dependant symptoms

Differential Diagnosis of Psychotic Symptoms

- Fantasy
- Bereavement
- Anxiety (in Younger Children)
- Trauma and abuse
- Substances
- Medical Illness
- Psychiatric Illness
- Personality Disorders
- Developmental Disorders
Differential Diagnosis: Mood Disorders

- Psychosis common in severe mood disorders:
  - Hallucinations in 9-27% of children with MDD, delusions in 6%
  - Psychosis in 16-75% of samples with BAD
- Mood symptoms do not rule out prodromal state
- Mood-congruent psychosis and psychosis present exclusively during mood episode help with diagnosis

Differential Diagnosis: Anxiety Disorders

- OCD
  - OCD symptoms common in prodrome and in primary psychotic disorders (26% of EOS per Nechmad 2003)
  - Some obsessions take on delusional intensity, but may still be best understood as OCD (Insel 1986)
- Children will sometimes have anxiety-based psychosis

Differential Diagnosis: Substances

- Can be mimics or precipitants
- Average age of first substance use in US is now between 11-12
- Marijuana use appears to be risk factor for psychosis

Trauma…not just differential diagnosis

- Maltreatment increases risk of psychotic symptoms
- Peer victimization at age 8 increased risk of psychotic symptoms at 12.9 (OR=1.94)
- Acute stress can cause brief psychotic symptoms
- Dissociation can be hard to distinguish from psychosis
- Some youths diagnosed with schizophrenia are later found to have borderline personality disorder
- But...disorganized communication, bizarre delusions, voices making running commentary, persistent negative symptoms are rare in trauma alone

Differential Diagnosis: Developmental Disorders

- MR and ASD elevate risk for psychosis, but also can confuse diagnosis
- Intellectual disability can overlap with psychosis, and is a risk factor for psychosis
- Thought disorder often present in ASD
- Fantasy with transient conviction common ASD
- Normal early childhood excludes DD/ASD

Differential Diagnosis: General Medical

- Seizure Disorders
- Neurodegenerative Disorders
- Rheumatologic Disorders
- Endocrinologic Disorders
- Deficiencies
- Infectious Diseases
- Head Injury
- Neoplasms
- Delerium
Medical Evaluation

- Consider: Physical Exam, UTox, UTox, UTox, UPreg, TSH, Metabolic Panel, VDRL, HIV
- Sometimes: EEG, MRI, ESR
- Rarely: LP, Copper and Ceruloplasm, Cortisol, Heavy Metals
- Really Rarely: Arylsulfatase A, Karyotype, Cytogenetics

Worry Signs

- Family history of psychotic disorder
- Motor symptoms
- Very poor family function
- Insidious decline prior to emergence of hallucinations
- Cognitive decline
- Social anhedonia, and other negative symptoms
- More severe symptoms
- Acting on symptoms with bizarre behaviors

Negative Symptoms in Children

- Social withdrawal, social anhedonia
- Amotivation
- Reduced motor movements
- Reduced number or quality of thoughts
- Diminished emotional expression
Normalize, Don’t Minimize!

- Explain that it's more common than thought
- Doesn’t mean youth is “going crazy”
- Doesn’t mean youth can’t recover
- Doesn’t mean youth has to take medications
- Doesn’t mean youth is going to end up homeless

The “Prodrome”

- Early: impaired concentration, decreased motivation, depressive or labile mood, sleep disturbance, anxiety, social withdrawal, suspiciousness, irritability, defiance, aggression, obsessions, compulsions, dissociation
- Later in course (~ 1 year before conversion): perceptual disturbances

The Psychosis Prodrome

- Early Prodrome: impaired concentration, decreased motivation, depressive or labile mood, sleep disturbance, anxiety, social withdrawal, suspiciousness, irritability
- Subpsychotic Prodrome: paranoid ideation, voices of reference, magical thinking, perceptual disturbances, atypical speech or behavior
- Transient Psychotic Symptoms
- Several Years
- One Year
- Months
- Meyer 2005
### PQ-B

1. Do you feel discomfort or pain when you are not wearing your glasses?  
   - Yes  
   - No  

2. Do you have difficulty focusing your eyes on objects that are close or far away?  
   - Yes  
   - No  

3. Do you have difficulty reading or writing?  
   - Yes  
   - No  

4. Do you have difficulty seeing in dim or bright light?  
   - Yes  
   - No  

5. Do you have difficulty seeing in low light conditions?  
   - Yes  
   - No  

6. Do you have difficulty seeing in the dark?  
   - Yes  
   - No  

7. Do you have difficulty seeing in the distance?  
   - Yes  
   - No  

8. Do you have difficulty seeing in the distance when you are driving?  
   - Yes  
   - No  

9. Do you have difficulty seeing in the distance when you are reading?  
   - Yes  
   - No  

10. Do you have difficulty seeing in the distance when you are working on a computer?  
    - Yes  
    - No  

11. Have you ever felt that you didn’t belong, or that you were different from others?  
    - Yes  
    - No  

12. Have you ever felt that you were special or unique?  
    - Yes  
    - No  

13. Do you find it difficult to make decisions or to think clearly?  
    - Yes  
    - No  

14. Do you often feel anxious or fearful?  
    - Yes  
    - No  

15. Do you often feel sad or depressed?  
    - Yes  
    - No  

16. Do you often feel lonely or isolated?  
    - Yes  
    - No  

17. Do you often feel angry or frustrated?  
    - Yes  
    - No  

18. Do you often feel worthless or inferior?  
    - Yes  
    - No  

19. Do you often feel that you are not good enough?  
    - Yes  
    - No  

20. Do you often feel that you are not loved or valued?  
    - Yes  
    - No  

### GRIEFIDEAS

**Injuries:**
1. Do you feel you have special gifts or talents? Do you feel that you are more creative or skilled than other people?
2. Have you ever been bullied or harassed without regard to your personal differences? For example, do you ever experience being picked on because you don’t fit in?
3. Do you ever feel lonely or isolated?
4. Have you ever had plans to end your life?
5. Do you ever feel that you have been chosen by God for a special role?
6. Do you ever feel that your life is not safe?
**Risk Stratification**

- Ultra-High Risk (UHR) → 9-54% Conversion at 1 year
  - Attenuated positive psychotic symptoms
  - BLIPS or BIPS
  - Family History or Schizotypal Personality Disorder + Functional Decline

**Conversion of High Risk Patients to Full Psychosis**

![Graph showing conversion rate over time.]

**Controlled Studies for UHR: All off-label**

- Risperidone + psychosocial treatment (non-blind)
  - Reduction in 6-month conversion rate, but no difference by 12 months
- Olanzapine
  - Trend of reduction of 12-month conversion rate.
- CBT (non-blind)
  - Reduction in 12-month conversion rate.
- Omega-3 Fatty Acids
  - Reduction in 12-month conversion rate (5% vs. 28%).
Safety Risk Assessment

• Psychosis increases risk of suicide, violence, victimization and abuse
  • In inpatient sample, children with psychosis were 3x more likely to have attempted or threatened suicide
  • Suicide risk may be highest early in course
• Assess for hopelessness, command auditory hallucinations, paranoia