

Non-psychotic auditory hallucinations in children and adolescents

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Summary

Non-psychotic auditory hallucinations are described in children and adolescents in association with a range of psychopathological and social circumstances, including disorders of emotions and conduct, abuse and family dysfunction. A variety of phenomena and aetiological factors have been identified in scientific literature to explain the existence of non-psychotic auditory hallucinations. We present a series of twelve

cases where auditory hallucinations were prominent. The objective of the discussion is to draw attention to the range of presentations, the influence of underlying psychosocial factors in symptom formation, the inadequacies of the main diagnostic classifications, the importance of diagnostic accuracy, the level of clinical skills required and the cultural factors influencing clinical presentation.

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Introduction

The clinical phenomenon of auditory hallucinations is defined as auditory perceptions in the absence of identifiable external stimuli (1). In adult psychiatric literature the presence of auditory hallucinations is viewed as being synonymous with psychotic disorders, which in turn indicate serious psychopathology and an unfavourable prognosis. However, auditory hallucinations in children and adolescents are relatively less significant diagnostically and a range of other mental health problems may produce this symptom. For example, auditory hallucinations have been described in children and adolescents with conduct and emotional disorders, difficulties in coping, bereavement, affective syndromes, migraine, anxiety and adjustment disorders (2, 3, 4, 5). A study of non-psychotic hallucinations in children presenting to a psychiatric emergency service found that 34% were depressed, 22% had attention deficit hyperactivity disorder (ADHD) and 12% had a disruptive behaviour disorder (6). A related condition is the benign phobic hallucinations in preschool and early school-age children, where visual and tactile phenomena are associated with anxiety, are transient and is present mostly at night. This type of hallucinations is described only in this age group (7).

In clinical populations, the reported incidence of auditory hallucinations in non-psychotic children and adolescents range from 1.1% to 5.7% (2, 8, 9, 10). An incidence as high as 9% was reported in abused children (11). This is in contrast to an incidence range of 48% to 75% reported in psychotic children and adolescents (2, 12). In follow up studies of non-psychotic children and adolescents, the discontinuation rate of auditory hallucination was 60%, suggesting that the hallucinations are non-psychotic in nature in the majority (13). Psychotic states are rare in children and discontinuation of hallucinations is less common when they do occur.

Many explanations have been given for non-psychotic auditory hallucinations in children and adolescents.

However, the underlying phenomenon and the aetiology remain unclear. Some authors have suggested that non-psychotic hallucinations are a dissociative phenomenon (14). Personal and family stresses have been identified as precipitants in some reports. Change of school, admission to hospital, actual or threatened separation from parents and loss of friends or relatives through death have all been described as causative factors (3). A higher rate of a positive family history of psychosis and depression has also been reported, when compared to non-hallucinating children (8). Further, non-psychotic auditory hallucinations have been recognised as indicating high levels of arousal, arising from chronic stress. The evidence comes from significant rates of family disruption, dysfunction and domestic violence reported in these children (5, 6, 15). Other authors have hypothesised a neurological disturbance such as migraine and anxiety disorders associated with it as a cause, especially in the presence of a strong family history of both disorders (4). On the other hand, non-psychopathological explanations have also been offered. For example, children may describe their thoughts as voices due to their cognitive immaturity and their natural tendency for illogical thinking (15, 16, and 17). Sometimes, children talk to themselves and to imaginary friends. Though such behaviour is puzzling to adults, they serve to alleviate loneliness and assist in allaying various fears.

We present a case series of twelve children and adolescents where auditory hallucinations were a prominent feature in the clinical presentation. We wish to draw attention to the range of presentations and the influence of underlying psychosocial factors in symptom formation, and emphasise the importance of diagnostic accuracy.

Discussion

In children and adolescents the content of auditory hallucinations themselves may not provide a useful guide to diagnosis. Across studies, the content of

Table 1 - Summary of cases

Presenting problems	Initial diagnosis	Initial management	Revised diagnosis	Outcome
1. Male, 12 years Heard a male voice that commanded him to read the book 'Lord of the Rings' and asked questions on the story; he acted out the contents of the book. He attended school but refused to work at school, read books during lessons and late into the night and had disturbed sleep; he had no other interests. He had always been a loner; was worried about contamination with germs, leading to frequent hand-washing. Was bullied at school.	Schizophrenia	Risperidone Clozapine prescribed later due to poor response. Not compliant with it.	Asperger syndrome	Improved with social skills training and behavioral interventions. No medication was given. Was able to function at school. Hallucinations disappeared completely.
2. Female, 15 years Heard voice of a neighbour planning to send toxic fumes through the windows to kill her, refused food believing it was poisoned and refused to leave her bed for fear of contamination with germs. Had repeated hand-washing, was suspicious and quarrelsome and accused her family of conspiring against her. Change of residence was a possible precipitant. Change of residence was a possible precipitant.	Schizophrenia	Risperidone	Obsessive compulsive disorder	Partial improvement with venlafaxine and risperidone. Poor compliance with medication and behaviour therapy. At follow up, hallucinations were not a consistent complaint.
3. Female, 16 years Heard voices that predicted that some harm will befall her parents; avoided passing the cemetery believing that her parents would die if she did so. Feared contamination with germs and had repeated washing of hands; suspicious of others with poor anger control. Failed GCE Ordinary Level examination.	Schizophrenia	Trifluoperazine	Obsessive compulsive disorder	Responded to treatment with fluoxetine and behavioural management. Hallucinations disappeared completely.
4. Male 10 years Heard the voice of his dead grandmother. Refused to go to school; had poor academic skills with reading and spelling difficulties. Parents also believed in the grandmother's presence as an invisible force in the house. Teacher at school had admonished him for getting low marks at an examination. Suffered a viral fever just before the onset of symptoms.	Low academic performance	No specific interventions	ADHD with specific developmental disorder	Improved following treatment with methylphenidate and remedial teaching. Hallucinations disappeared completely.
5. Male, 17 years Heard an "unknown being" comment on all his actions and believed that neighbours and teachers were making negative comments about him. Had a low mood, avoided school, lost interest in previously pleasurable activities, slept and ate poorly and was socially withdrawn. Drew pictures of demons, believed in supernatural forces and preferred to wear black clothes. Had a breakup of a relationship with his girlfriend before the onset of symptoms.	No previous contact with psychiatric services		Depression and Aspergers syndrome	Improved on fluoxetine and help with problem solving strategies for coping with adversities. Hallucinations disappeared completely.
6. Male, 17 years Heard a voice commanding him to leave home and live elsewhere; felt compelled to act on this command. Talked to himself, served tea and biscuits to an imaginary person, had a homosexual relationship with a friend he contacted over the internet, refused to attend school and defied his parents. Delusional thinking was not elicited.	Schizophrenia	Haloperidol	Bipolar Affective Disorder, manic episode without psychotic symptoms	Improved with sodium valproate and was able to cope with the voices he heard, which were inconsistent at follow up.
7. Female 16 years Heard the voice of the priest at the local temple and the voice of her class teacher, both directly addressing her. The voices were not present when she was engaged in an activity she liked. Was suspicious of and aggressive towards her family members, claimed that her body was changing its shape, demanded that a job be found for her, but rejected opportunities when they arose. Restless and irritable, slept and ate poorly and blamed her family for her problems. Onset attributed to a failure at an examination. Was a loner with few friends.	Schizophrenia	Risperidone	Aspergers syndrome	Treated with fluoxetine and sodium valproate for mood dysregulation. Continued to have behavioural difficulties. Hallucinations were inconsistent and not considered a major problem by the patient at follow up.
8. Female 16 years Heard voice of an unidentified person commenting about Lord Buddha; the voice also asked her to hit her mother. She refused to go to school due to fear of contamination with germs; frequent hand washing was present.	Schizophrenia	Olanzapine	Obsessive Compulsive Disorder	Improved on fluoxetine and behavioral interventions. Hallucinations disappeared completely.

Table 2- Summary of cases continued

Presenting problems	Initial diagnosis	Initial management	Revised diagnosis	Outcome
9. Female, 12 years Heard voices threatening to kill her parents. Irritability, poor sleep and episodes of excessive crying; constant restlessness and pacing. Ran away from home on one occasion. Many somatic complaints. Failed an examination before the onset of symptoms	No definite diagnosis	Haloperidol, citalopram and sodium valproate	Had an anxious temperament. Reacted to depression in her mother. features of side effects of psychotropic medication.	Improved after medication was discontinued. Mother was treated for a depressive disorder. Provided help with problem solving. Hallucinations disappeared completely.
10. Male, 7 years Heard the voice of his grandmother, who died of a brain tumour, calling his name; preoccupation with thoughts about his grandmothers death. Complained of recurrent headaches; attributed a superficial lump on his scalp to a malignancy in his brain. His mother had the same worry and recurrently sought medical help and reassurance. Had a period when he complained he could not recognise his mother.	Temporal lobe epilepsy	Anxiety disorder	Obsessive compulsive disorder	Improved following psychoeducation of mother about child's condition. Hallucinations disappeared completely.
11. Male, 12 years Heard the voice of the demon "Badrakali" commanding him. Believed there were ghosts around him and was persistently fearful of them. Restless and impulsive; aggressive towards parents. Cognitive skills below the normal for his age. His family shared the beliefs about ghosts. Was punished by a teacher for poor school performances. CT brain and EEG were normal. Delusions not elicited.	Schizophrenia	Risperidone	Intellectual impairment with challenging behaviour	Medication was discontinued. Initially led to reduced food intake and loss of weight causing anxiety in parents. Improved with behavioral interventions for child and family. Hallucinations disappeared completely.
12. Female, 11 years Heard a voice commanding her to come to a nearby cemetery; the voice also threatened to kill her. Had visions of a dark unidentifiable face that was very frightening. Panic attacks in school with abdominal pain, difficulty in breathing and palpitations. Irritability, crying spells, marked agitation, social withdrawal and muttering to self. Attempted to dismiss fears by reading religious text but failed. Attained menarche 4 months previously and family believed she was 'influenced by a bad spirit'. No evidence of child abuse.	No previous contact with psychiatric services		Anxiety disorder	Improved with fluoxetine and risperidone at night and behavioral interventions for anxiety. Hallucinations disappeared completely.

hallucinations, both psychotic and non-psychotic, is remarkably similar. In children who presented with non-psychotic hallucinations, some claimed that the voices urged them to commit undesirable acts, such as running away from home, destroying objects, or attacking a known person (2, 11). This was evident in Case 6 of our series. Some voices were reported as threatening and unpleasant (2) as seen in Cases 9, 11 and 12. In the presence of low mood, stress and anxiety, the voices may urge aggressive action against others and warn of danger and possible harm (5, 14). This was seen in Case 3.

An inaccurate diagnosis may occur unless auditory hallucinations in children and adolescents are evaluated from a broader clinical perspective than in adults, and the application of the International Classification of Diseases (ICD) and Diagnostic and Statistical Manual (DSM) diagnostic criteria is done with due consideration to associated phenomena. Unfamiliarity regarding the phenomenon of non-psychotic hallucinations is likely to promote the tendency to look for a more familiar diagnosis that would fit in with the patient's presentation, even if all clinical criteria are not fulfilled

(18). Auditory hallucinations in a child or an adolescent are likely to cause much anxiety to the parents and in the child or adolescent. Their emotional reaction to the symptoms may also influence the psychiatric evaluation, unless all aspects of the presentation are carefully evaluated (19). The Associated behaviour involved in the presentation may help to some extent in making the distinction between psychotic and non-psychotic hallucinations. Children and adolescents with a psychotic disorder have associated disturbances in language production, diminished motor activity, incongruous mood, bizarre behaviour, delusional beliefs and social withdrawal (20).

Evaluating auditory hallucinations in children and adolescents with neuro-developmental disorders, especially those with mental retardation pose a particular challenge to the clinician. Due to the nature of the predisposing cerebral vulnerability in such a child or adolescent, auditory hallucinations could be associated with a psychotic disorder or the prodromal stage of a psychotic disorder. It could also be associated with emotional and behavioural disorders as well as seizure disorder (21). This was apparent in Case 12.

In addition, cultural influences on the presentation of symptoms of mental disorder may also challenge the clinician's familiar tried and tested strategies in diagnosis and management (22). This is a much discussed issue in psychiatric literature, especially if certain cultural trends are unfamiliar to the clinician. The influences could be related to ethnicity, religious beliefs, rural or urban living and family values. Familiarizing oneself with the manifestations of cultural beliefs under psychologically demanding experiences would improve diagnostic skills. Cultural influences in the presentation were recognisable in Cases 11 and 12.

Conclusion

The inadequacies of the main diagnostic classifications, a lack of familiarity with symptoms and the cultural factors influencing clinical presentations may lead to difficulties in diagnosing children and adolescents presenting with non-psychotic auditory hallucinations. Understanding the psychosocial context in which they occur may help to reduce the chance of them being inappropriately managed and labeled as "psychotic".

Declaration of interest

None

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