Clinical Profile of Child and Adolescent (≤16 years) Psychotic Disorders at a Tertiary Care Centre In India

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Abstract: *Background:* Over past two decades, there is an increasing recognition that the psychotic disorders can begin in children at a very young age. Only a few prior studies from India have explored the clinical profile of non-affective psychotic disorders at a younger age. *Aims:* The study aims to describe the clinical profile of child and adolescent (≤16 years) psychotic disorders. *Methods:* The study was conducted as a three-year descriptive, retrospective review. All the patients aged ≤16 years, with a diagnosis of Schizophrenia and other psychotic disorders as per Diagnostic and Statistical Manual, 4th edition Text Revision (DSM-IV TR) criteria who presented to the weekly child and adolescent psychiatry clinic at All India Institute of Medical Sciences, New Delhi were included. Relevant information was retrieved on a semi-structured datasheet. *Results:* The clinic prevalence for schizophrenia and other psychotic disorders was found to be 2.47% (40/1618), of which five patient records were either unavailable or inadequate for inclusion. The mean age was 13.97(±1.46) years with an equal representation of males and females. A very early-onset (≤12 years) was present in 48.3% of the sample. Median duration of psychotic illness was 12 months (0.1-48 months) and majority (94.3%) had a continuous course. Family history was positive for psychiatric illness in 22.9%, while an identifiable psychosocial stressor was temporally related in 17.1% of sample. A comorbid psychiatric disorder was present in 14.5%, commonest being subnormal intellectual functioning. Auditory hallucinations appeared to be a common (51.5%) symptom, however these were evident primarily from patient's behavior rather than self-report in over half of them. Visual hallucinations with ghost or animal theme were present in 17.1% and delusions were manifested by 40% of sample. Disorganized speech and catatonia were less frequent. Nearly 17.1% of sample left school after onset of psychosis and all patients showed some disruption in social, inter-personal and academic functioning. **Conclusion:** The present study adds to the limited literature on clinical presentation and phenomenology of early-onset psychotic disorders in Indian population.

Keywords: Profile, early-onset, psychotic disorders, India.

INTRODUCTION

Majority of the available literature on schizophrenia and other disorders have excluded the younger age groups, especially children. Over past two decades, there is an increasing recognition literature that the psychotic disorders can begin in children at a very young age [1]. Prior to that, there was a general reluctance to acknowledge or diagnose psychotic disorders in childhood [1, 2]. The onset below 16 years of age is a rather uncommon presentation for schizophrenia and other psychotic disorders, comprising only 4-5% of all schizophrenic disorders, while the very early-onset (≤12 years) is rare, with a prevalence of 1-5 per 10,000 as seen in most international studies [1-3]. The early-onset psychotic disorders have the potential to affect the cognitive, emotional and social development of the child or adolescent [3,4]. They can interfere with the academic functioning and social skill acquisition in children and adolescents. Unfortunately, most of them remain underdiagnosed and/or under-treated.

The psychotic disorders in children and adolescents are currently diagnosed using essentially the same criteria as adults, with only a minor modification specified in Diagnostic and Statistical Manual, 4th edition Text Revision (DSM-IV TR) criteria [5]. The requirement of social or occupational dysfunction can be substituted for failure to achieve expected level of functioning in case of children and adolescents. Existing international literature suggests that certain clinical features in children and adolescents may create diagnostic dilemmas [6]. Research over past decade indicates that there may be significant age-related differences in phenomenology [7]. Several researchers suggest that the early-onset disorders are more severe forms of the disorder, but display a continuity of clinical and biological features with adult onset disorders [8,9], however it remains a controversial and debatable area of study. Nonetheless, there are developmental differences in the clinical presentation at a younger age [1, 7], making it pertinent to study them separately.

So far, only a few studies from India have explored the clinical profile of schizophrenia and psychotic disorders in children and adolescents [10, 11]. Most of the available literature on early-onset psychosis is from western countries and there may be possible socio-cultural differences in the clinical presentation. Therefore, the present study was planned to describe the clinical profile of child and adolescent (≤16 years)

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ISSN: 1814-8085 / E-ISSN: 1927-5129/12

psychotic disorders presenting at a tertiary care hospital in India.

MATERIAL AND METHODS

This study is a three-years retrospective review of clinical records of patients visiting the Child & Adolescent clinic, Department of Psychiatry at All India Institute of Medical Sciences, New Delhi. This is a weekly, specialty clinic with a team of psychiatrists, psychologists and social workers, focusing on the mental health problems in children and adolescents. The patients, who were 16 years of age or below, presenting at the general psychiatry out-patient department, are referred to Child & Adolescent psychiatry clinic for a detailed evaluation. Additionally, the clinic also caters to patients who are referred from other departments, including pediatrics for a psychiatric evaluation. All the patients presenting at the Child & Adolescent clinic undergo a thorough evaluation and relevant psychological assessments, if indicated. The diagnosis is, thereafter, made carefully and systematically by a psychiatrist.

The Child & Adolescent clinic records were screened for over a three-year period, between June 2008 and September, 2011. All the patients who had been diagnosed as psychotic disorders after a thorough work-up using DSM-IV TR [5] criteria were identified. The patients in whom psychosis was considered only as one of the differential diagnosis or a remote possibility were not included. The relevant information was collected on a semi-structured data sheet, which included the socio-demographic details (age, gender, socio-economic status, residence and education), risk factors (birth and early developmental details, parental age at conception, positive family history and psychosocial stressor, if any) and illness details (onset, course, duration and symptomatology).

The data was analyzed using SPSS version 17.0. Descriptive statistics have been primarily used for data presentation.

RESULTS

A total of 1618 patients were evaluated in child and adolescent clinic over the study period, of which 40 patients were identified to have schizophrenia and other psychotic disorders diagnosed as per DSM-IV [5]. The clinic prevalence for mood and psychotic disorders was found to be 2.47%. Of these, the clinical profile of 35 patients is being presented below as five patient records were either unavailable or inadequate for inclusion.

The patients were between seven and 16 years of age. The socio-demographic profile is shown in Table **1**. Most (60.0%, n=21) patients were from Delhi or National Capital Region and rest were from neighboring states of Uttar Pradesh, Bihar and Haryana. Majority (77.1%, n=27) belonged to middle socio-economic status families and rest were from low socio-economic background. Patients were accompanied by both parents (31.4%, n=11), either parent (62.9%, n=22) or a sibling (5.7%, n=02), who also provided the history.

Table 1: Child and Adolescent Patients with Non-affective Psychosis: Sociodemographic and ILLNESS Details (N=35)

	Descriptives
Age	13.97 (±1.46) years
Gender: Males	51.4% (18)
Females	48.6% (17)
Education	7.03 (±2.51) years
Socio-economic status	
Middle	77.1% (27)
Lower	22.9% (8)
Age at onset	12.69 (±1.64) years
Childhood-onset (≤12yrs)	48.6% (17)
Adolescent-onset (>12yrs)	51.4% (18)
Total duration of illness	12 months
Median (Range)	(0.1-48 months)
Onset: Abrupt (≤48hrs)	8.6% (03)
Acute (≤2wks)	34.3% (12)
Subacute (2-6wks)	14.3% (05)
Chronic (>6wks)	42.8% (15)
Course: Continuous	94.3%(33)
Episodic	5.7%(02)
Diagnosis	Schizophrenia 31.4% (11)
	Schizophreniform disorder 20.0%(7)
	Brief psychotic disorder 11.4% (4)
	Psychotic disorder due to GMC 5.7% (2)
	Psychotic Disorder NOS 31.4%(11)

Over a half (51.4%) of patients had a diagnosis of schizophrenia or schizophreniform disorder. Nearly one-third (31.4%) had a diagnosis of psychotic disorder not otherwise specified. Brief psychotic disorder was present in 11.4% of patients. Only one (2.8%) patient

presented with psychotic disorder due to a general medical condition, who had a long-standing inadequately controlled seizure disorder and only one patient (2.8%) had substance induced psychotic disorder, as a result of a dopaminergic medication prescribed for torsion dystonia. The details pertaining to duration, onset and course of psychotic disorders are shown in Table **1**.

An identifiable stressor with a temporal relation to onset of illness was present in 17.1% of psychotic disorders. The details of stressors and family history have been summarized in Table **2**, along with the comorbidites. Along with psychotic disorder, there was one patient with comorbid obsessive compulsive disorder, two with borderline intellectual functioning and two with mental retardation.

Table 2: Risk Factors and Co morbidity in Early-onset Psychotic Disorders

	Psychotic Disorders (N=25)
Family history of psychiatric illness (in first and second degree relatives)	22.9% (08)
Psychotic disorders	04
Mood disorders	01
OCD and other anxiety disorders	02
Unknown psychiatric illness	01
Psychosocial stressor *(temporally-related)*	14.3% (05)
Nature of the stressor	Death of a family member (03) Examination (01) Change of school(01)
Age at conception	
Father≥ 35 years	14.3% (05)
Mother≥30 years	11.4% (04)
Birth order	
1st	48.6% (17)
2nd	31.4% (11)
3rd and above	20.0% (07)
Perinatal complications	5.7% (02)
Psychiatric comorbidity	14.3% (05)

The clinical features of patients with mood and psychotic disorders have been summarized in Table **3** in decreasing order of frequency. The disruption in social and academic functioning was a universal presentation in the sample.

Table 3: Clinical Presentation of Early-onset Psychotic Disorders (N=35)

Clinical symptomatology	Frequency
Disruption in social, inter-personal and/or academic functioning	100%
Discontinued studies/left school after onset of psychosis	17.1%
Poor self-care	74.3%
Sleep disturbances	74.3%
Social withdrawal	57.1%
Irritability, abusiveness	57.1%
Auditory hallucinations *(command, derogatory,voices discussing, songs)*:	51.5%
Reported by patient	22.9%
Patient's behavior strongly suggestive of hallucinations	28.6%
Delusions *(persecutory, referential, misidentification, somatic passivity):*	40.0%
Reported by patient	31.4%
Patient's behavior strongly suggestive of delusion	8.6%
Disorganized/odd behaviors *(excluding catatonic behavior)*	25.7%
Probable visual hallucinations *(ghost/bhootni /unidentified person/animals)*	17.1%
Disorganized speech (*loss of goal, perseveration*)	11.4%
Catatonia (*stupor, waxy flexibility, ambitendency, posturing, mutism*)	5.7%
Suicidal ideation	2.9%

DISCUSSION

The study describes the profile of child and adolescent (≤16 years) patients presenting with psychotic disorders in a specialized clinic of a tertiary care hospital in India. The clinic prevalence for schizophrenia and other psychotic disorders was 2.47%. The child epidemiological studies from Indian setting have shown prevalence rates ranging between 2.4-2.7% in clinic-based studies [12,13] which is similar to present study. The prevalence in a community based sample was found to be nearly 1.9% in an Indian study [14].

The age of onset was 12 years or below in 48.6%, indicating a very early onset in nearly half of the study sample. A prepubertal presentation of schizophrenia and other psychotic disorders is rare, with only 0.1-1% of all disorders presenting before 10 years of age and less than 4% presenting before 15 years of age [2].

The males and females were almost equally represented in the sample in contrast to an earlier Indian study [10] where males outnumbered female patients. This could be due to a difference in the study location, which was a tertiary care hospital in a metropolitan city in the present study. The treatment seeking for female child may be better as a result of relatively higher awareness and lesser gender inequity compared to many other Indian cities.

The diagnosis was either schizophrenia or schizophreniform psychosis in over half (51.4%) of the sample. The psychotic disorder not otherwise specified was considered as a diagnosis in 31.4% of the sample, mainly because the diagnostic criteria for schizophrenia were not sufficiently met. In a US national study [15] of childhood-onset psychosis, a significant number (30/230; 13%) of patients originally referred for schizophrenia were classified as psychotic disorder not otherwise specified as it was felt that the criteria are not met adequately.These group of patients were found to closely resemble childhood-onset schizophrenia on many clinical characteristics, risk factors and morbidity. Little is known about the psychosis not otherwise specified category in early-onset cases, which needs to be focused in future research.

The psychotic illness had an insidious onset in 42.4% and an acute or subacute onset in 48.6% of sample. In the previous study from India [10], an acute onset was reported in 50%, similar to present study. An insidious onset has been more commonly reported in western literature and has been associated with poor outcome of the psychotic disorder [3]. Psychiatric comorbidity was present in 14.3% of the sample, mostly in the form of subnormal intellectual functioning. Previous Indian and international studies suggest that at least 10-20% of children with early-onset schizophrenia have their IQs in the borderline to mentally retarded range [10, 16].

The findings suggest a contribution of genetic vulnerability as well as psychosocial stressors in onset of psychotic disorders. The family history of psychiatric illness was positive in 22.9% of the patients, similar to 20% in previous Indian study [10]. Other studies have also documented a significant role of family vulnerability in early-onset illness [8]. Environmental factors may potentially interact with biological risk factors to mediate the timing of onset, course, and severity of the disorder.The psychosocial stressors were observed in 14.3% of the sample. An irreversible significant loss viz. death of a family member emerged as a significant stressor in three of the five patients. Studies have shown a modest relationship between exposure to stress at an early age and development of psychosis at a later age [17], however only a limited evidence is available for role of stressful life events in childhood psychosis [18].

All patients displayed a significant disruption of existing social and academic functioning. The failure to achieve an expected level of functioning may have been present in initial phases of illness, however at the time of assessment, a prominent dysfunction was noticeable in all the cases, which may be due to a higher severity of symptoms in the hospital-based sample. Nearly 17.1% had to leave the school/studies after onset of the psychotic disorder. Previous studies have found prominent and stable cognitive deficits after the onset of psychotic process, which may interfere with academic performance [19]. More than half (57.1%) of sample demonstrated prominent social withdrawal. It points to a significant impact of psychotic process on the overall development of children and adolescents [3].

In the present study, auditory hallucinations, delusions and visual hallucinations were present in 51.5%, 40% and 17.1% of the sample, respectively. In the earliest classic study by Kolvin [20], auditory hallucinations were present in 82%, delusions in 58% and visual hallucinations in 30% of sample (n=33). Available Indian studies [10, 11] in children and adolescents have shown mixed results. Delusions were found in 72% and auditory hallucinations in 58% of the sample (n=43, 10-16 years) in an Indian study [11], while another Indian study with relatively younger sample (n=30, 4-16 years) reported delusions in 20% and hallucinations in 17% of patients [10]. Auditory hallucinations are among the most consistently reported symptom in previous studies on early-onset psychotic disorders, while visual hallucinations are considered to be relatively uncommon [1, 21]. Few other studies from India have assessed adult patients [22, 23] with an early onset of psychosis, however, the results from those studies cannot be compared to present study having a younger sample (≤16 years). Catatonia and suicidal behaviors were less common in accordance to available literature on early-onset psychosis [1, 7, 24]. Sleep disturbances were a frequent presentation, similar to previous studies [25].

The developmental differences in language and cognition may affect the range and quality of symptom presentation in childhood and adolescence [1, 3].

Nearly 22.9% reported hearing clear voices in objective space, whereas another 28.6% of sample was unable to reliably report the voices, but demonstrated prominent gesturing and muttering to self, highly suggestive of auditory hallucinations. Similarly, 8.6% of sample had extreme fearfulness or other behaviors suggestive of underlying delusions, however were unable to verbally report the thought content on specific questioning. Available western literature [4] indicates a predominance of parents, fantasies and animals in child psychopathology. In the present study, the visual hallucinations were particularly reported to be that of a scary dead females visualized as a ghosts and referred to as *bhootni* or *chudail* in the cultural terminology. The predominant themes in visual hallucinations were that of ghosts and animals, while the most frequent content of auditory hallucinations was derogatory voice of an unidentified person in second person.

Distinguishing true psychotic symptoms in children from non-psychotic idiosyncratic thinking, mental imagery and perceptions caused by developmental delays, traumatic events or overactive imaginations is a challenge [3, 4]. Similarly, cultural beliefs may be misinterpreted as possible psychotic symptoms when taken out of context. In the present study, the diagnosis has been arrived carefully by means of a detailed assessment and thorough interview followed by a discussion amongst treating team and relevant psychological tests, if needed. Further, the patients with insufficiently established diagnosis of a psychotic disorder were not included in the study. Given the challenging issues often encountered in case of interviewing children and adolescents, the thoroughness of the diagnostic process provides a certain credibility and reliability to the diagnostic process. Cultural, developmental, and intellectual factors were taken in account in the diagnostic assessment.

The study has several limitations. The study is limited by a relatively small sample size, which limits the generalizability of findings. Another important limitation is the retrospective design which precludes the more detailed assessment and presentation of clinical aspects. It was a hospital-based sample and results cannot be generalized to community samples. There is a need to study age-specific symptom manifestations in children, early and middle adolescence separately. Given the small sample size in each subgroup, it was not attempted in the present study. Prospective community-based design could better address the issues concerning diagnostic stability for various psychotic disorders in children and adolescents.

To conclude, the present study adds to the limited literature on early-onset psychotic disorders from Indian subcontinent and indicates their characteristic clinical presentation. Larger studies with prospective design are required to further elicit clinical and phenomenological aspects of major psychiatric disorders in children and adolescents.

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Received on 24-10-2011 Accepted on 08-12-2011 Published on 25-01-2012

DOI: http://dx.doi.org/10.6000/1927-5129.2012.08.01.08