REVIEW ARTICLE

Parenting in Children and Adolescents with Psychosis

S SRIVASTAVA, *I SHARMA AND MS BHATIA

*From Departments of Psychiatry, University College of Medical Sciences and Guru Teg Bahadur Hospital, Delhi; and *Institute of Medical Sciences, Banaras Hindu University, Varanasi, UP; India.*

Correspondence to: Dr Shruti Srivastava, Assistant Professor, Department of Psychiatry, University College of Medical Sciences and Guru Teg Bahadur Hospital, Delhi 110095, India. srivastava_shruti@hotmail.com

Need and Purpose of review: Psychotic symptoms appear in children and adolescents in the most crucial years, during the individual's career development. The challenges faced by parents of psychotic children are in dealing with their disruptive behaviours, negative symptoms, cognitive deficits, delusions and hallucinations. This paper presents an overview of the childhood psychosis and how parenting can be done effectively for this population.

Methods: Articles were retrieved from the Medline, Cochrane database, Google Scholar, Medscape; using the search terms 'parenting and childhood psychosis', and 'childhood psychoses; and standard textbooks were consulted.

Main conclusions: Educating parents how to recognize early symptoms, explaining treatment adherence, side effects of medications along with non-pharmacological measures like dealing with expressed emotions, lowering expectations, enhancing social supports, healthy lifestyle, and making patients independent. Awareness, early identification and effective parenting for psychosis may help bridge the wide gap between scarce skilled mental health professionals, inefficient resources and large paediatric population.

Keywords: *Childhood psychosis, Childhood schizophrenia, Parenting, Severe mental illness*.

Schizophrenia and other psychotic illnesses, being the third largest cause of disability worldwide, have major public health importance [1]. Schizophrenia disorders are rare, especially in children. Only about 4% of total cases of schizophrenia occur in children <15, and only 0.1-1% occur in children under the age of 10. The rate of onset increases sharply during adolescence, with the peak ages of onset generally ranging from 15 to 30 [2]. In a meta-analysis done by Kelleher, *et al*. [3] in 2012, prevalence of psychotic symptom among children aged 9 to 12 was found to be 17% and among adolescents aged 13 to 18 to be 7.5% [3].

Psychosis occurring in children and adolescents persists for long before it is brought for treatment [4].There is considerable data to show that if treated early, course and outcome of psychosis will be better [5]. Parents/caregivers remain unaware of the odd behaviors/ social withdrawal /delusions/hallucinations. The scenario becomes even worse when they do not know where to contact mental health professionals, whose number is limited. They often have to travel long distances in order to avail mental health services. Stigma associated with mental illnesses also acts as a deterrent for the parents/ caregivers to seek information about mental illnesses or take advice. Thus, children and adolescents remain in the psychotic state for several years causing considerable burden to the parents/caregivers and society at large.

METHODS

The methodology involved review of articles retrieved on Medline (using "parenting and childhood psychosis", "parenting and psychosis", "childhood psychosis"), Google Scholar (relevant articles), Cochrane database, and Medscape, restricted to English language, and standard textbooks. In addition, we searched the references given in these articles.

Etiology/risk factors

Schizophrenia and other childhood psychosis have a multi-factorial etiology involving genetic and environmental factors [6]. Genetics seem to play an important role in etiology of schizophrenia. First-degree relatives of children with schizophrenia have a higher prevalence rate of schizophrenia and schizophrenia spectrum disorders. Family, twin and adoption studies support that schizophrenia has a strong genetic component.

Neurodevelopmental model of schizophrenia emphasizes that the illness is the end stage of abnormal neuro-developmental processes that began years before the onset of the illness [7]. Perinatal complications, alterations in brain structure and size, minor physical anomalies, and disruption of fetal neural development, especially during the second trimester of pregnancy, have been correlated with the illness. Risk factors associated

with childhood psychosis include viral infections [8], childhood adversities [9], famine [10], urban environment [11], cannabis [12], and migration [13].

Using magnetic resonance scans, Greenstein, *et al*. [14] found out cortical thickness loss in childhood-onset schizophrenia over 19-year follow up becomes localized with age to prefrontal and temporal cortices, and the pattern of loss is more like that seen in adult forms of the illness [14].

The neurotransmitter implicated in the patho-physiology of schizophrenia is dopamine. Glutamate, serotonin and the *N*-methyl-D-aspartate (NMDA) receptor dysfunction has also been implicated for production of psychotic symptoms.

Early Diagnosis

Psychotic symptoms are present in children and adolescents for extended period even before diagnosis [15]. Therefore, it is important to recognize the prodromal symptoms for early intervention. A follow-up study reported 35% risk of conversion to psychosis in youth with prodromal symptoms (unusual thought content, suspicion/paranoia, perceptual anomalies, grandiosity, and disorganized communi-cation) [16]. The study found that the five features assessed at baseline that contributed uniquely to the prediction of psychosis are genetic risk for schizophrenia with recent deterioration in functioning, higher levels of unusual thought content, higher levels of suspicion/paranoia, greater social impairment, and a history of substance abuse.

The symptomatology of childhood psychosis differs from that in adults [17]. Symptoms frequently reported in psychotic children are: speech disturbances, inability to distinguish dreams from reality, visual and auditory hallucinations, vivid and bizarre thoughts and ideas, diminished interest, confused thinking, extreme moodiness, odd behavior, stereotypy, dis-inheriting ideas that others are out to get them, confusion of television with reality, severe problems in making and keeping friends. Hallucinations and delusions have typically been viewed as symptoms of psychosis [18]. Cognitive deficits are reported in childhood psychosis similar to adults, which include deficits in attention, learning and abstraction [19].

For diagnosing schizophrenia, DSM-5 criteria lays down that two (or more) out of the following should be present during a one-month period (or less if successfully treated) (*a*) delusions (*b*) hallucinations, (*c*) disorganized speech, (*d*) grossly disorganized or catatonic behavior, and (*e*) negative symptoms. It should further qualify for Symptoms either a, b or c must be present out of the two to make diagnosis of Schizophrenia. Continuous signs of disturbance must persist for at least 6 months, which includes both periods of prodromal and residual symptoms. Attenuated psychosis syndrome is included in the appendix for future research [20].

Challenges Faced by Parents of Childhood Psychosis

Taking care of a psychotic child is a challenging task for the family members, especially parents. Parental support during ongoing treatment predicts the prognosis of the psychotic illness in children. Direct support provided by the mental health professionals to the family members through information sharing, and indirect support provided by the other family members and support groups is found to have positive associations with family members'experience of care-giving. Care-giving gains in the form of becoming more sensitive to persons with disabilities, and improving relationships with the patients should be emphasized [21].

Faulty communication patterns have been described in families of psychotic patients. Communication deviance that compromises the development and sharing of meaning between the parent and the offspring and leading to the consequent breakdown in communication has long been suggested as a potential risk factor for the development of psychosis [22]. The expressed emotion which includes criticism, hostility and emotional over-involvement is considered to be an adverse family environment. High degrees of expressed emotions is linked to the relapse of the illness and puts the patient in stress [23].

Treatment

Antipsychotics are used in the treatment of children and adolescents suffering from psychosis. No antipsychotic is superior to other in terms of efficacy. The chance of relapse is high if the medication is stopped one to two year following relapse. Routine monitoring of the following parameters have been recommended like weight, height, waist and hip circumference, pulse, blood pressure, fasting blood glucose levels, glycosylated hemoglobin, blood lipid profile, prolactin levels, movement disorders, diet, nutrition, physical activity, side-effects, adherence, and efficacy. Treatment-resistant schizophrenia in children and adolescents requires clozapine [24]. ***Fig*.1** shows an algorithm for the management of children and adolescents suffering from psychosis.

Both pharmacological and non-pharmacological interventions are required for effective and early treatment of children and adolescents. Early treatment is of paramount importance. Antipsychotics are very useful in the treatment of psychosis. After the acute symptoms of

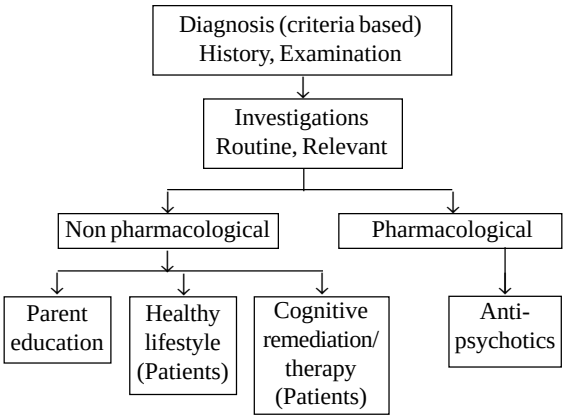

Fig. 1 *Management of children and adolescents suffering from psychosis.*

psychosis subside with these medications, the child may benefit from counseling and psychosocial interventions.

The following non-pharmacological interventions have been found to be efficacious [25].

Cognitive remediation (CR): It aims to arrest or reverse the cognitive impairments in attention, concentration and working memory. A combination of 'procedural' and 'effortless learning', 'targeted reinforcement' and massed practiced appears to facilitate cognitive flexibility and memory in patients with schizophrenia [26]. Parents are advised to break down information and tasks into small manageable parts to reduce demands on working memory.

Cognitive Behavior therapy (CBT): The therapeutic techniques used for patients with psychosis are based on the general principles of CBT. Links are established between thoughts, feelings, and actions in a collaborative and accepting atmosphere. Agendas are set and used but are generally more flexibly developed than in traditional CBT.

***What is Needed*?**

Children and adolescents constitute 40% of the population of India. First and foremost is the need to ease access to care. Appropriate care and necessary information should be available at the doorstep of the service users. For this, an infrastructure of proper referral and care system should be in place. The proposed model of care involving interventions at primary, secondary and tertiary levels are required for our country in the following way:

Primary level: Following professionals can provide care at the primary level. There is evidence to suggest the involvement of Non specialist health workers in bridging the gap between the scarcity of trained psychiatrists and limited resources for low and middle income countries [27].

Health professionals can provide following services at primary level:

- Create awareness about psychosis.
- Removing myths and misconceptions about mental illness in general and psychosis in particular.
- Awareness about pre-morbid indicators of psychosis.
- Psycho-education about psychosis.
- Early Identification and distribution of parent education materials.
- Referral to higher center for timely treatment after early identification.

District level

- Psychiatrists (under District Mental Health Program) trained in the early diagnosis/ treatment.
- Availability of Generic psycho tropics which are distributed free of cost.
- Referral to tertiary care center in case of Severe Mental Disorder which requires specialty management in a mental health Institute.

Tertiary level: Multidisciplinary teams of mental health professionals for early identification and intervention as already exist in all teaching hospitals should be further strengthened like other Asian countries *e.g.,* Singapore [28]. Allocation of funds to improve the quality and standards of research on psychosis should be allocated.

Guidelines for Parents

Having a child or an adolescent with psychosis is a difficult situation and a life-long challenge. Parents who are the primary caregivers most of the time feel overwhelmed and unprepared for facing this situation. It is thus of paramount importance that parent education material should be made available in the local languages (***Box* I**).

The key point to remember is that psychosis and schizophrenia occurring in children and adolescents have poor outcome [29].The best way to minimize its impact is early identification and treatment. While relapses may occur from time to time, the effects of a psychotic episode are decreased if symptoms are identified within the first six months of onset. There is research evidence to suggest better course and outcome of schizophrenia in developing countries as compared to developed countries [30].

Box 1: GUIDELINES FOR PARENTS OF CHILDREN AND ADOLESCENTS SUFFERING FROM PSYCHOSIS

- Psychosis is a severe form of mental disorder in which contact with the reality is lost. It is associated with abnormalities and oddities of behavior, where children just do not seem like themselves.
- What causes it?
  It is multifactorial involving genes, infections, cannabis, stress, neurotransmitters etc.
- How do we (parents/caregivers) recognize it?
  It may begin with changes in behavior like social withdrawal, decline in school performance. The child may have active symptoms like he/she may hear or see something which is perceived in the absence of stimulus or may develop false, fixed belief that "people want to harm me''. Deterioration in previous functioning with disturbance in sleep and appetite.
- What is the treatment?
  Antipsychotic drugs are the mainstay of treatment. Several non-pharmacological measures are also useful. Early treatment is of paramount importance; adherence to treatment is essential.
- What can we do?
  Reduce expressed emotions like criticism, hostility and over-involvement. Encourage-ment, praise for desired behaviors, increase social support, inculcate hobbies, reduce burden of studies thereby minimize stress, try to make them independent.
- What is the future of my child?
  With long term treatment, full recovery is possible. With timely help, many youth grow up to lead healthy, productive lives.

High levels of parental involvement (parental understanding of their children's problems, and parental knowledge of their children's free-time activities) is associated with decreased outcome of poor mental health in India's Nationally representative global survey done on 6721 school going adolescents in 2007 [31].Traditionally, in India, the responsibility of care and protection of children is provided by the families and the communities. Both the prevention and promotion of child mental health in a country with low socio-economic status can be achieved by supporting parenting [32]. Authoritative parenting and parental warmth, especially in Indian families, are the most adaptive parenting styles that act as protective factors for the development of psychopathology and positive adjustment among adolescents [33]. Health education of parents and parental counseling play a key role in early intervention and promotion of positive mental health of children and adolescents [34].

CONCLUSIONS

Child and adolescent mental health services are hardly available in a low income country like India. The need for the hour is to strengthen the mental health services through innovative strategies that are cost-effective. Awareness, early identification and effective parenting of pediatric psychosis may help bridge the wide gap that exists between scarce skilled mental health professionals, inefficient resources, and large population of children and adolescents in developing countries.

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REFERENCES

1. World Health Organization (WHO). World Health Report 2001. Mental Health: New Understanding, New Hope. Geneva: WHO; 2002.
2. Remschmidt HE, Schulz E, Martin M, Warnke A, Trott GE. Childhood onset schizophrenia: History of the concept and recent study. Schizophr Bull. 1994;20:727-45.
3. Kelleher I, Connor D, Clarke MC, Devlin N, Harley M, Cannon M. Prevalence of psychotic symptoms in childhood and adolescence: a systematic review and meta-analysis of population-based studies. Psychol Med. 2012;42:1857-63.
4. Dominguez MD, Fisher HL, Major B, Chisholm B, Rahaman N, Joyce J , *et al.* Duration of untreated psychosis in adolescents: Ethnic differences and clinical profiles. Schizophr Res. 2013;150:526-32.
5. Amminger GP, Henry LP, Harrigan SM, Harris MG, Alvarez-Jimenez M, Herrman H, *et al*. Outcome in early-onset schizophrenia revisited: findings from the Early Psychosis Prevention and Intervention Centre long-term follow-up study. Schizophr Res. 2011;131:112-9.
6. Kirkbride JB, Fearon P, Morgan C, Dazzan P, Morgan K, Tarrant J, *et al*. Heterogeneity in incidence rates of schizophrenia and other psychotic syndromes: findings from the 3-center AeSOP study. Arch Gen Psychiatry. 2006;63:250-8.
7. RapoportJL, Giedd JN, Gogtay N. Neurodevelopmental model of schizophrenia: update 2012. Mol Psychiatry. 2012;17:1228-38.
8. Rantakallio P, Jones P, Moring J,Von Wendt L. Association between central nervous system infections during childhood and adult onset schizophrenia and other psychoses: a 28-year follow-up. Int J Epidemiol. 1997;26:837-43.
9. Varese F, Smeets F, Drukker M, Lieverse R, Lataster T, Viechtbauer W, *et al*. Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective-and cross-sectional cohort studies. Schizophr Bull. 2012;38:661-71.

10. Xu MQ, Sun WS, Liu BX, Feng GY, Yu L,Yang L, *et al*. Prenatal malnutrition and adult schizophrenia: further evidence from the 1959-1961 Chinese famine. Schizophr Bull. 2009;35:568-76.
11. Van Os J, Hanssen M, Bijl RV, Vollebergh W. Prevalence of psychotic disorder and community level of psychotic symptom. Arch Gen Psychiatry. 2001;58:663-8.
12. Arseneault L, Cannon M, Poulton R, Murray R, Caspi A, Moffitt TE. Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. BMJ. 2002;325:1212-3.
13. Veling W. Ethnic minority position and risk for psychotic disorders. Curr Opin Psychiatry. 2013;26:166-71.
14. Greenstein D, Lerch J, Shaw P, Clasen L, Giedd J, Gochman P, *et al*. Childhood onset schizophrenia: cortical brain abnormalities as young adults. J Child Psychol Psychiatry. 2006;47:1003-12.
15. Sikich L. Diagnosis and evaluation of hallucinations and other psychotic symptoms in children and adolescents. Child Adolesc Psychiatr Clin N Am. 2013;22:655-73.
16. Cannon TD, Cadenhead K, Cornblatt B, Woods SW, Addington J, Walker E, *et al*. Prediction of psychosis in youth at high clinical risk: a multisite longitudinal study in North America. Arch Gen Psychiatry. 2008;65:28-37.
17. Tolbert HA. Psychoses in children and adolescents: a review. J Clin Psychiatry. 1996; 57 (Suppl 3):4-8;46-7.
18. Polanczyk G, Moffitt TE, Arseneault L, Cannon M, Ambler A, Keefe RS, *et al*. Etiological and clinical features of childhood psychotic symptoms: results from a birth cohort. Arch Gen Psychiatry. 2010; 67:328-38.
19. Courvoisie H, Labellarte MJ, Riddle MA. Psychosis in children: diagnosis and treatment. Dialogues Clin Neurosci. 2001;3:79-92.
20. American Psychiatric Association (APA). Diagnostic and Statistical Manual of Mental Disorders, 5th ed. DSM-5. Arlington, VA: American Psychiatric Association; 2013.
21. Chen FP, Greenberg JS. A positive aspect of caregiving: the influence of social support on caregiving gains for family members of relatives with schizophrenia. Community Ment Health J. 2004;40:423-35.
22. de Sousa P, Varese F, Sellwood W, Bentall RP. Parental communication and psychosis: A meta-analysis. Schizophr Bull. 2014;40:756-68.
23. Hooley, JM. Expressed emotion and relapse of psychopathology. Annu Rev Clin Psychol. 2007;3: 329-52.
24. Kranzler HN, Cohen SD. Psychopharmacologic treatment of psychosis in children and adolescents: efficacy and management. Child Adolesc Psychiatr Clin N Am. 2013;22:727-44.
25. Schimmelmann BG, Schmidt SJ, Carbon M, Correll CU. Treatment of adolescents with early-onset schizophrenia spectrum disorders: in search of a rational, evidence-informed approach. Curr Opin Psychiatry. 2013;26:219-30.
26. Wykes T, Reeder C, Corner J,Williams C, Everitt B. The effects of neurocognitive remediation on executive processing inpatients with schizophrenia. Schizophr Bull. 1999;25:291-7.
27. van Ginneken N, Tharyan P, Lewin S, Rao GN, Romeo R, Patel V. Non-specialist health worker interventions for mental health care in low-and middle-income countries. Cochrane Database Syst Rev.2011; CD009149.
28. Verma S, Poon LY, Subramaniam M, Abdin E,Chong SA. The Singapore Early Psychosis Intervention Programme (EPIP): A programme evaluation. Asian J Psychiatr. 2012;5:63-7.
29. Deakin J, Lennox B. Psychotic symptoms in young people warrant urgent referral. Practitioner. 2013;257:25-8.
30. Kulhara P, Shah R, Grover S.Is the course and outcome of schizophrenia better in the 'developing 'world? Asian J Psychiatry. 2009;2:55-62.
31. Hasumi T, Ahsan F, Couper CM, Aguayo JL, Jacobsen KH. Parental involvement and mental well-being of Indian adolescents. Indian Pediatr. 2012;49:915-8.
32. Shastri PC. Promotion and prevention in child mental health. Indian J Psychiatry. 2009;51:88-95.
33. Patel V, Flisher AJ, Nikapota A, Malhotra S. Promoting child and adolescent mental health in low and middle income countries. J Child Psychol Psychiatry. 2008; 49:313-34.
34. Shrivastava SR, Shrivastava PS, Ramasamy J. Childhood and adolescence:Challenges in mental health. J Can Acad Child Adolesc Psychiatry. 2013;22:84-5.