

How to assist parents of children with autism spectrum disorders in rural area?

In this issue of *Journal of Neurosciences in Rural Practice*, the paper entitled *Impact of psycho-education intervention module on parents of children with Autism Spectrum Disorders: A preliminary study* provided a very interesting study in which a psycho-education intervention module was developed for parents of children with autism spectrum disorders (ASDs) and the impact of the module on parental stress and knowledge was evaluated.

ASDs are developmental disorders and commonly characterized by some clinical features, such as impaired social interactions, communication defects, and repetitive behaviors or a narrow range of interests.^[1] In western countries, the prevalence of ASDs has increased in recent surveys and current estimates of prevalence is around 20/10,000, and the prevalence in children is around 1/100 to 1/150.^[2] In 2014, the Centers for Disease Control and Prevention (CDC) estimates that 1 in 68 children in the United States has been identified with ASDs, and almost five times more common among boys than girls: 1 in 42 boys versus 1 in 189 girls. In India and mainland China, as far as I know, no national-wide systematic epidemiological studies have ever been reported, and thus the number of people who were diagnosed with ASD remains unknown.

The central nervous system development results from the interactions between intrinsic genes and extrinsic environment. ASDs are heterogeneous developmental disorders and both genetic and environmental factors likely contribute to its origins. It has been clearly demonstrated that ASDs can be caused by many different genetic changes. More than 200 autism susceptibility genes, hundreds of copy number variations (CNVs), more than 100 chromosome fragile sites, and thousands of noncoding RNA molecules (snoRNA, miRNA, and piRNA) have been found to have a relationship to autism.^[1,3,4] Recently, emerging evidence suggests that air pollution plays a role in autism, supported by previously report that air pollution may cause physical and developmental effects due to prenatal and early life exposure.^[5, 6]

ASDs can be a major source of stress on the long-term health, and social and financial well-being of affected

individuals, their families and society as a whole. Although many pharmacological treatments for young children with ASDs have been extensively investigated, the more effective way is the parent-mediated early intervention.^[7] To achieve better effectiveness of the parent-mediated early intervention, the acquisition of some basic knowledge of ASDs is essential for those parents. However, assisting parents of children with ASDs to acquire essential knowledge is especially challenging for parents in rural area in developing countries.

The psycho-education intervention module described in this study provide a novel strategy to assist parents of children with ASDs. In this study, parents of children diagnosed with ASDs participated in the two-phase study. Phase I included preparation of a parent training module through a four-stage process. The training module was developed by involving all the stakeholders including experienced psychiatrists, psychologists, special educators, social workers and parents of children with ASDs. The module was then presented to the parents group. Phase II was evaluation of impact of the final version of the module on parental stress and knowledge using structured questionnaire. After statistical analysis, the authors found that all the domains of parenting stress and knowledge was improved, and the social stress score and total stress score showed significant improvement. Finally, the authors made such conclusions: Parent psycho-education intervention module on ASDs decreases parenting stress, and improves knowledge about ASDs. Psycho-education intervention module is a feasible and acceptable way of parent empowerment.

Young children with ASDs have impairments of communication and social interaction. This early pattern of difficulties is a challenge for parents. Therefore, approaches that help parents develop strategies for interaction and management of behavior are an obvious route for early intervention in ASDs. The effective parent-mediated early interventions will benefit both children with ASDs and their parents.^[7] Parent psycho-education intervention module is a unique yet simple way in decreasing parenting stress levels, improving

knowledge about ASDs, and empowering parents. However, this study is very preliminary and its aim is just to test the feasibility of the psycho-education intervention module. The sample size and the narrow range of severity of ASD samples limit the generalization of the study and make it difficult to analyze the effect of the module on ASD patients. It is very interesting to see the follow-up studies by using larger sample size and optimized psycho-education intervention module to evaluate the effectiveness on both parents and ASD children.

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References

- Ding B. Gene expression in maturing neurons: Regulatory mechanisms and related neurodevelopmental disorders. *Sheng Li Xue Bao* 2015;67: 113-33.
- Mefford HC, Batshaw ML, Hoffman EP. Genomics, intellectual disability, and autism. *N Engl J Med* 2012;366:733-43.
- Ding B, Wang W, Selvakumar T, Xi HS, Zhu H, Chow CW, *et al*. Temporal regulation of nuclear factor one occupancy by calcineurin/NFAT governs a voltage-sensitive developmental switch in late maturing neurons. *J Neurosci* 2013;33:2860-72. doi: 10.1523/JNEUROSCI.3533-12.2013.
- Banerjee S, Riordan M, Bhat MA. Genetic aspects of autism spectrum disorders: Insights from animal models. *Front Cell Neurosci* 2014;8:58.
- Volk HE, Lurmann F, Penfold B, Hertz-Picciotto I, McConnell R. Traffic-related air pollution, particulate matter, and autism. *JAMA Psychiatry* 2013;70:71-7. doi: 10.1001/jamapsychiatry.2013.266.
- Kalkbrenner AE, Daniels JL, Chen JC, Poole C, Emch M, Morrissey J. Perinatal exposure to hazardous air pollutants and autism spectrum disorders at age 8. *Epidemiology* 2010;21:631-41.
- Oono IP, Honey EJ, McConachie H. Parent-mediated early intervention for young children with autism spectrum disorders (ASD). *Cochrane Database Syst Rev* 2013;4:CD009774.

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<p>Quick Response Code:</p> 	<p>Website: www.ruralneuropractice.com</p>
	<p>DOI: 10.4103/0976-3147.169776</p>

How to cite this article: Ding B. How to assist parents of children with autism spectrum disorders in rural area?. *J Neurosci Rural Pract* 2015;6:465-6.

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