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Assessment of cases of autism spectrum disorder

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Abstract
Background: Autism spectrum disorder is one of a group of neurodevelopmental disorders known as pervasive developmental disorders. The present study was conducted to assess cases of autism spectrum disorder (ASD) among known population.
Materials and Methods: 54 patients of autism spectrum disorder age ranged 18-30 months of both genders was recorded. Parameters such as clinical features, mother age, mother education, mother occupation, number of children in family and economic status was recorded.
Results: 32 were from urban and 22 from rural background, mother age <29 years was seen in 15 and 29-40 years in 39, primary mother education was seen in 26 and secondary in 28, mother occupation was housewife in 11, private in 26 and government in 17, 12 had 1 children in family, 10 had 2 and 32 had >3, economic status was poor in 36 and near poor in 18. Clinical features were hair pulling in 42, head banging in 15, self-cutting in 50 and self-biting in 48. The difference was significant ($P < 0.05$).
Conclusion: The number of autism spectrum disorder cases is increasing. Most common factors were urban background, advanced mother age, ore number of children in family.

Keywords: Autism spectrum disorder, children, mother education

Introduction
Autism spectrum disorder (ASD) is an important cause of developmental disability worldwide. Autism is one of a group of neurodevelopmental disorders known as pervasive developmental disorders (PDD) [1].
These disorders are characterized by three core deficits: impaired communication, impaired reciprocal social interaction and restricted, repetitive and stereotyped patterns of behaviors or interests [2]. The presentation of these impairments is variable in range and severity and often changes with the acquisition of other developmental skills. Its estimated prevalence is 1% in the United Kingdom and 1.5% in the United States [3].
There have been various epidemiological surveys to determine the prevalence estimates of ASD during the past decade. The data based on these surveys showed an increase in the prevalence of ASD worldwide. The prevalence was estimated to be 61.9/10,000 globally in 2012. India is a populous country of nearly 1.3 billion people with children ≤15 years constituting nearly one-third of the population [4].
It has been estimated that more than 2 million people might be affected with ASD in India. Most of the reported studies on ASD are based upon hospital-based data and thus lack information on the prevalence estimates of this disorder in India.[5] There are only a few studies focusing on its prevalence in the community settings. Furthermore, lack of uniform application of fully validated and translated autism diagnostic tools makes it difficult to estimate the exact prevalence of ASD. There is also under-recognition of the disorder due to a delay in the diagnosis of ASD at a young age [6].
The exact cause of autism and the other ASDs is still not known. The etiologic theories have changed over the years. It was once thought to be the result of faulty child-rearing. This historical psychosocial theory has been rejected, as research clearly indicates that the etiology is multi-factorial with a strong genetic basis [7].
Although the etiology is not clear, there are a minority of cases, less than 10%, where autism is part of another condition. Such cases are often referred to as “secondary” autism; these include tuberous sclerosis, fragile X syndrome, phenylketonuria and congenital infections secondary to rubella and cytomegalovirus [8].The present study was conducted to assess cases of autism spectrum disorder (ASD) among known population.

Materials and Methods

The present study comprised of 54 patients of autism spectrum disorder age ranged 18-30 months of both genders. Parents were informed regarding the study and their written consent was obtained. Demographic data such as name, age, gender etc. was recorded. Parameters such as clinical features, mother age, mother education, mother occupation, number of children in family and economic status was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

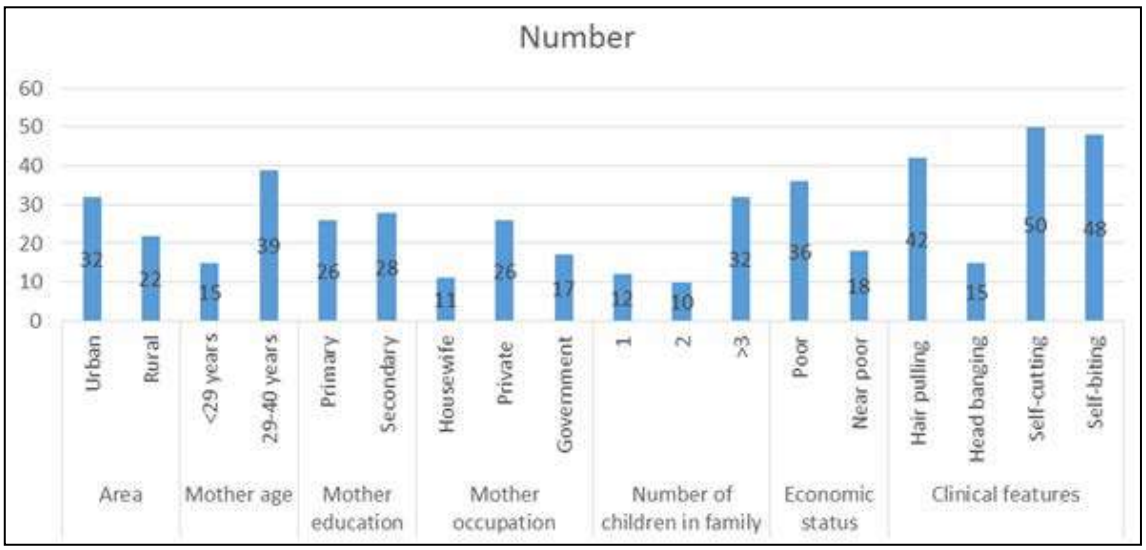
Table 1: Distribution of patients

Age group (months)	Boys	Girls
18-24	8	14
24-30	12	20

Table 1 shows that age group 18- 24 wees comprised of 8 boys and 14 girls and 24-30 months had 12 boys and 20 girls.

Table 2: Patient Characteristics

Variables	Parameters	Number	P value
Area	Urban	32	0.05
	Rural	22	
Mother age	<29 years	15	0.02
	29-40 years	39	
Mother education	Primary	26	0.12
	Secondary	28	
Mother occupation	Housewife	11	0.09
	Private	26	
	Government	17	
Number of children in family	1	12	0.07
	2	10	
	>3	32	
Economic status	Poor	36	0.02
	Near poor	18	
Clinical features	Hair pulling	42	0.81
	Head banging	15	
	Self-cutting	50	
	Self-biting	48	



Graph 1: Patient Characteristics

Table 2, graph 1 shows that 32 were from urban and 22 from rural background, mother age <29 years was seen in 15 and 29-40 years in 39, primary mother education was seen in 26 and secondary in 28, mother occupation was housewife in 11, private in 26 and government in 17, 12 had 1 children in family, 10 had 2 and 32 had >3, economic status was poor in 36 and near poor in 18. Clinical features were hair pulling in 42, head banging in 15, self-cutting in 50 and self-biting in 48. The difference was significant ($P<0.05$).

Discussion

Autism spectrum disorders (ASD) refer to a range of conditions characterized by some degree of impaired social behavior, communication and language, and a narrow range of interests and activities that are both unique to the individual and carried out repetitively [9]. ASD often impose significant emotional and economic burden on people with these disorders and their families [10]. The impairments associated with ASD are present during the life-course and are considered to have a substantial functional, social and financial impacts on affected individuals, their families and society [11, 12]. Autism spectrum disorders prevalence appears to be increasing worldwide, with reported prevalence of about 0.5–1%. In European countries, the prevalence of ASD, with an age range of birth to adulthood, varied from 0.019 to 7.2%. The prevalence of ASD in the US in 2012 was 1.13% [13]. The present study was conducted to assess cases of autism spectrum disorder (ASD) among known population.

In present study, age group 18- 24 wees comprised of 8 boys and 14 girls and 24-30 months had 12 boys and 20 girls. Le *et al*. [14] conducted a study among 17,277 children aged 18 and 30 months one city (Hanoi capital) and two provinces in northern Vietnam. They used M-CHAT to screen children with high risk of ASD. M-CHAT positive cases were diagnosed by pediatric neurologists from National Pediatrics Hospital using DSM-IV criteria. Descriptive and analytical statistics were performed. The overall prevalence of ASD among children aged 18 and 30 months in the three studied sites was 0.752% (95% CI 0.629–0.893%). The odds of having ASD were statistically significant higher among (a) children living in urban area as compared to those from rural settings (OR=2.7, 95% CI

1.73–4.21); (b) boys as compared to girls (OR=4.04, 95% CI 2.57–6.35); and (c) children of mothers who worked as farmers as compared to children of mothers who were government staff (OR=4.72, 95% CI 2.03–10.97).

We found that 32 were from urban and 22 from rural background, mother age <29 years was seen in 15 and 29-40 years in 39, primary mother education was seen in 26 and secondary in 28, mother occupation was housewife in 11, private in 26 and government in 17, 12 had 1 children in family, 10 had 2 and 32 had >3, economic status was poor in 36 and near poor in 18. Clinical features were hair pulling in 42, head banging in 15, self-cutting in 50 and self-biting in 48. Chauhan *et al*. [15] conducted a systematic review and meta-analysis of the published studies evaluating the prevalence of ASD in the community setting. Four studies were included in this systematic review. Of the four included studies, one had studied both urban and rural populations, and the other three had studied the urban populations only. The study from the rural setting showed a pooled percentage prevalence of 0.11 [95% confidence interval (CI) 0.01–0.20] in children aged 1-18 years; and, four studies conducted in the urban setting showed a pooled percentage prevalence of 0.09 (95% CI 0.02–0.16) in children aged 0-15 years. The scarcity of high-quality population-based epidemiological studies on ASD in India highlights an urgent need to study the burden of ASD in India. The proper acquisition of data related to the prevailing burden of ASD in India would lead to a better development of rehabilitative services in our country.

Povathinal *et al*. [16] in their study in during phase I screening, 43 individuals were diagnosed with ASD in a questionnaire-based survey of the community (n ¼ 43,000). The age of affected individuals ranged from 1 to 30 years with a male-to-female ratio of 2.1:1. The total number of individuals in the age group of 1e30 years was 18,480. The prevalence of ASD was thus estimated as 23.3/10,000. On age group specific classification, a larger number of affected individuals were found to be in the age group of 6-10 years and 16-20 years.

Conclusion

Authors found that number of autism spectrum disorder cases is increasing. Most common factors were urban background, advanced mother age, ore number of children in family.

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