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Original Research Article

Awareness and Knowledge of Autism Spectrum Disorders among Primary School Teachers in India

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ABSTRACT

Background: The incidence of Autism Spectrum Disorders (ASD) has increased in recent years. This is because of greater awareness and newer, more effective diagnostic criteria. However in India and other developing countries ASD is underdiagnosed and awareness is poor.
Objective: To assess knowledge and awareness about ASD among elementary school teachers and the variables influencing that knowledge.
Methods: 326 teachers were given a self -report questionnaire and knowledge was assessed based on their response. Socio-demographic history was also elicited.
Results: 95.7% of the teachers were aware of autism. Only 21% had adequate knowledge. 71 teachers had prior training on ASD. Teachers with more experience and prior training performed better.
Conclusion: The teachers had poor knowledge of ASD. Teaching experience and prior training were positively correlated to knowledge.

***Key Words*:** Autism Spectrum Disorders, Teachers Knowledge, Developmental Disorders.

INTRODUCTION

The incidence of Autism Spectrum Disorders (ASD) has increased steadily over the past decade; the incidence of Autism Spectrum Disorders is estimated to be 1-2%. [1] A systemic review of 40 studies revealed that the prevalence of ASD was 20 per 10,000. [2] The incidence of autism is more in males. Latest estimates indicate that the prevalence of Autism Spectrum Disorders could be as high as 1 in 54 boys. [3] There is strong evidence to suggest that the increase in diagnosis and identifying children with these disorders is due to greater awareness, significant changes in the criteria and improved diagnostic tools. The overall prevalence of ASD among children born between 1983 and 1999 and diagnosed by age 8 increased by 11.9% per annum, from 8 cases per 10,000 births in 1983 to 46 cases per 10,000 births in 1999. [4] Between 1991 and 1997 there was a staggering 556% reported increase in pediatric prevalence of Autism with a male to female ratio of 3:1. [5] However in India, awareness and knowledge of these disorders is poor among the lay public in general and the health and education community in particular. Awareness is even lesser in non-metropolitan cities because of a paucity of

trained personnel and specialized centers. There are about 2.3 million children with Autism Spectrum Disorders in India. [6] Knowledge and awareness among primary school teachers may play a major role in early identification of children with ASD, unfortunately developmental disorders in children are not a health priority and most teachers are not equipped with the ability to identify developmental disabilities. It is a logistical challenge for health personnel to screen and identify ASD among millions of students; the people best suited for this onerous task are elementary school teachers. Teachers interact with students on a daily basis and are more likely to identify and monitor subtle signs or symptoms. Limited research exists regarding the role of teachers in screening for Autism Spectrum Disorders. [7] The purpose of this study therefore is to assess the knowledge and awareness of Autism Spectrum Disorders among primary school teachers and to correlate their knowledge with variables such as prior training and teaching experience.

MATERIALS AND METHODS

A self- report questionnaire was given to teachers in 32 primary schools, 326 school teachers were assessed on their knowledge of Autism Spectrum Disorders. Socio-demographic information such as gender, teaching experience and prior training was elicited. The teachers were asked about any past suspicion of autism in the classroom and their response to those suspicions in terms of reporting it to a superior, parental counselling or referral to a doctor. The source of their knowledge and the factors influencing their perception of autism was assessed. The teachers were asked about the need for a workshop/module on ASD and their willingness to attend it. The knowledge of autism among the teachers was assessed by their awareness about 12 symptoms and signs for ASD. The teachers were ranked based on their knowledge and a score of above 8/12 was deemed as good knowledge of ASD. The symptoms and signs listed in the questionnaire were adopted from two diagnostic instruments used for autism, namely the Autism Diagnostic Interview-Revised (ADI-R) and the Childhood Autism Rating Scale (CARS).

RESULTS

In our study the total number of respondents was 326, but only five teachers were males and since females outnumbered males by a 60:1 ratio in the study, gender as a variable was not considered. Teaching Experience and prior training were the variables considered. The teaching experience ranged from fresher's to veterans with more than 20 years' experience; nearly half the teachers had less than 5 years of experience this is shown on Figure 1. Figure 2 shows the major source of information on autism for the teachers, almost one third of the teachers cited Television as their source of information others attributed books, colleagues, movies and newspapers as their source. Table 1 shows the number of teachers who received prior training on autism and roughly 1 in 5 teachers had prior training, 59 teachers had suspected autism in their students at least on one occasion and had counseled a parent and referred them to a doctor or had informed a superior, 291 teachers felt that training was required but ironically only 239 teachers expressed willingness to attend such training sessions, this was probably because teachers who had been trained earlier did not wish to attend a similar session again. Table 2 shows the awareness and knowledge of the teachers, 95% of the teachers were aware of 'autism' but among those aware 83% admitted that their knowledge was inadequate. At least 50% of the teachers identified 6 of the 12 signs and symptoms correctly, the response

to the other 6 questions was less encouraging. Table 3 shows the variables influencing knowledge. Teaching experience had a strong positive correlation with knowledge and the veterans clearly outperformed the novices, the responses were graded into 4 categories, those who were not 'aware', a correct score of 1 to 4, 4 to 8 and above 8, a score exceeding 8 was termed as good or adequate knowledge and only 69 teachers qualified for this plaudit. Prior training also had a positive correlation with knowledge and 31 of the 71 teachers who had prior training had a score exceeding 8.

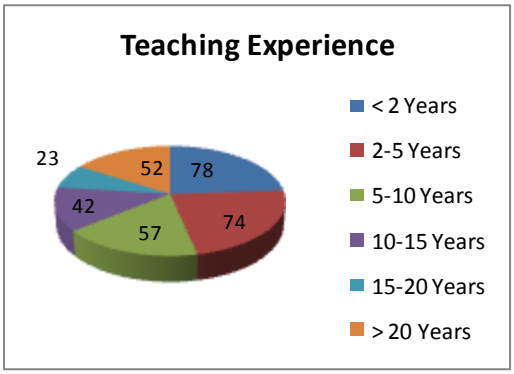

Figure 1: Teaching Experience in Years.

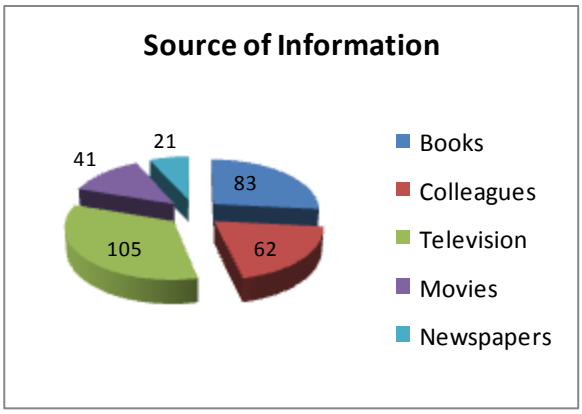

Figure 2: Major Source of Information on Autism.

Table-1: Teacher Training & Autism.

Variable	Yes	No
Prior Training on Autism	71 (21.8%)	255 (78.2%)
Suspected Autism in students	59 (18.1%)	267 (81.9%)
Need for training for teachers on Autism	291 (89.2%)	35 (10.8%)
Willingness to attend training session	239 (73.3%)	87 (26.7%)

Table -2: Knowledge of Symptoms & Signs.

	Aware of the term 'Autism'	Aware	Unaware
		312 (95.7%)	14 (4.3%)
	Grading of Knowledge	Adequate	Inadequate
		55 (16.9%)	271 (83.1%)
Sr. No	Signs & Symptoms	Aware	Unaware
1	Look at other children when interacting with them or make good eye contact.	197 (63.2%)	115 (36.8%)
2	Make good and appropriate use of hand and body gestures when having conversations.	125 (40.2%)	187 (59.8%)
3	Fails to show interest in other children or no interest in interacting with other children.	270 (86.5%)	42 (13.5%)
4	Have emotional reciprocity (Awareness about others being happy, sad, angry etc and responding appropriately).	115 (36.8%)	197 (63.2%)
5	Language development is delayed.	187 (59.8%)	125 (40.2%)
6	Has repetitive behavior (flapping hands, body rocking repeatedly)	176 (56.4%)	136 (43.6%)
7	Does not respond to name.	94 (30.1%)	218 (69.9%)
8	Does not respond to emotional cues, i.e. to affection. Does not like to be cuddled or hugged	229 (73.4%)	83 (26.6%)
9	Inappropriate attachment in certain toys or objects (prefers to play with same toy for hours)	135 (43.3%)	177 (56.7%)
10	No perception of fear or danger, ex: Crosses road without looking.	124 (39.7%)	188 (60.3%)
11	Upset at even minor changes in routine, obsessed with the same routine.	177 (56.7%)	135 (43.3%)
12	Repetitive phrases at odd or inappropriate times, like singing an advertisement jingle suddenly.	93 (29.8%)	219 (70.2%)

Table-3: Variables influencing Teacher's Knowledge.

Teaching Experience in Years	Criteria Awareness - correct score			
	Not Aware	1-4	4-8	>8
<2	7.7%	51.3%	32.1%	8.9%
2-5	6.7%	44.6%	36.5%	12.2%
5-10	3.5%	42.1%	31.6%	22.8%
10-15	2.4%	33.3%	35.7%	28.6%
15-20	0%	21.8%	39.1%	39.1%
>20	0%	23.1%	40.4%	36.6%
Prior Training	0%	8.5%	47.9%	43.6%

DISCUSSION

Teachers could play a pivotal role in identifying children with developmental disabilities and counsel the parents and guide them on referral. But at present there is very little coordination between educational and health personnel. A greater interaction between the health sector and schools could have tangible benefits. A study on children treated for Autism with medications revealed that less than half the teachers were aware that the children were on medication, and among the teachers who were aware none of the teachers had ever conferred with the treating physician and the article argues for greater coordination among teachers and treating doctors. [8] The benefits could extend to the classroom too. In a study, the engagement and in seat behavior of autistic children in classrooms while seated on their regular seats was compared with being seated on therapy balls, and there was substantial improvement when the ASD children sat on therapy balls. [9] Teachers who have to deal with children with ASD are under greater stress and greater coordination could benefit teachers as well. An Iranian study revealed that teachers of children with autism experience significantly higher levels of burnout. [10] In our study a majority of the teachers were aware of 'autism' but they admitted that their knowledge was inadequate. There were several incorrect perceptions among the teachers in our study. A cross sectional study done in Oman among 164 school teachers revealed that misconceptions of ASD were common. [11] In the present study only 69 of the 326 teachers had adequate knowledge of ASD. A study in Singapore assessed knowledge of childhood developmental and behavioral disorders in school teachers and 66 % had adequate knowledge of Autism Spectrum Disorder. [12] Teaching Experience in the present day had a positive correlation with knowledge and this is similar to findings in a Scottish study. [13] In the present study 59 teachers had suspected ASD in their pupils at least on one occasion and subsequently informed a superior or counseled a parent. This results in an awkward situation for teachers, because often parents don't agree with the teacher's perception and there might be a backlash. A study in Finland studied the association between parents and teachers rating of the Autism Spectrum Screening Questionnaire (ASSQ). Agreement between informants was rare. [14] In another study, forty seven teachers and forty seven parents of autistic children were surveyed regarding their views and beliefs about autism and both groups harbored some misconceptions and had discrepant views in crucial areas. [15] Referrals of ASD suspected children should be to a qualified and competent specialist, knowledge of both developmental assessment and mental health is required. A recent study conducted in Goa on the families of children with ASD revealed that professionals from the health, education, and religious sectors have a low awareness of the unique needs of families living with ASD which leads to a considerable economic and emotional burden on families. [16] A study in Singapore assessed the knowledge of childhood developmental and behavioral disorders in 48 general practitioners and only over a third of the doctors achieved the pass rate. [17] Prior training also had a positive correlation with knowledge in our study, 91% of the teachers who had prior training exhibited good or

average knowledge. In a Greek study 35 regular school teachers and 29 special education teacher's perceptions of Autism was evaluated, and the special education teachers were more likely to correctly identify the characteristics of autism. [18] Training therefore helps in improving the ability to identify relevant cues and tentatively screen children. A study conducted in Delhi assessed the effect of a self- instructional educational module on knowledge of primary school teachers regarding early symptoms of childhood psychiatric disorders and concluded that it was highly effective in improving teacher's knowledge. [19] In the present study nearly 90% of the teachers favored training modules or sessions on identifying ASD but only 73% expressed their willingness to attend such sessions. A study on the knowledge of Autism in Karachi, included 170 school teachers and revealed that 57% favored training for teachers on Autism only 9% had prior training. [20] Management is more effective when children with ASD are detected earlier. Routine, standardized screening for ASD in toddlers and timely access to diagnostic evaluation can reduce disparities in age at diagnosis. [21] The Diagnostic and Statistical Manual (DSM) published by the American Psychiatric Association sets the authorized standard criteria on mental health and its aspects. A new edition (DSM-5) was released in February 2014.The DSM-V contains revised diagnostic criteria for autism spectrum disorder (ASD) from the previous DSM-IV. A recent study in JAMA concluded that Autism spectrum disorder prevalence estimates will likely be lower under DSM-V than under DSM-IV-TR diagnostic criteria, although this effect could be tempered by future adaptation of diagnostic practices and documentation of behaviors to fit the new criteria. [22]

CONCLUSION

The teachers in the present study had poor knowledge about ASD. Teaching experience and training had a positive bearing on knowledge. Only one in five teachers had prior training. Most teachers advocated training on ASD and expressed their willingness to attend training sessions. This sentiment should be taken advantage of and more teachers should be trained to make them more effective facilitators of identifying ASD and promoters of creating awareness.

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