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1 Introduction

Autism spectrum disorder (ASD) was first defined in early forties by an American child psychologist named Leo Kanner ¹. ASD is a condition related to brain development that influences how an individual perceives and socializes with others, producing problems in social collaboration and communication. The word "spectrum" in autism spectrum disorder denotes to the varied number of symptoms and severity which comprise disorders that were

A Study to Assess the Knowledge of Autism among Primary School Teachers in Selected Schools at Kolar District, Karnataka

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Abstract

Introduction: Autism spectrum disorder (ASD) is a developmental disorder of brain with reported incidence of 1 in 59 children (approximately 1.7%) in the United States. Children with autism have very vague features or symptoms; thus, health professionals think of autism as a spectrum disorder. Most of the children with autism make no eye interaction and look aloof, while others may demonstrate intermittent involvement with the surroundings and may make unreliable eye contact, smile, and hug. Children may also display varying verbal capacities, ranging from being nonverbal to having progressive talk. **Materials and methods:** Non-experimental descriptive survey design was conducted among 84 primary school children at Kolar District. Non-probability convenient sampling technique was adopted to choose participants. Structured knowledge questionnaire was designed to gather data from the primary school teachers. **Results:** Overall findings clearly show that 71.42% had inadequate knowledge, 16.66% had moderate knowledge and none of the teachers had adequate knowledge. **Conclusion:** Study findings show that primary school teachers had inadequate knowledge on autism hence the study concluded that importance and need of adequate awareness on autism.

Keywords: Autism, Non-experimental, Descriptive, Primary school teachers

previously considered isolated — autism, Asperger's syndrome, childhood disintegrative disorder and an unspecified form of pervasive developmental disorder ^{2,3}.

ASD arises in the initial childhood and gradually roots problems functioning in society. In the early stages, only few children seem normal and later show autism symptoms between 18 to 24 months ⁴. While some children with autism can live self-sufficiently, others

have severe incapacities and need care and support for the rest of life ⁵.

About 1 in 100 children are identified with autism spectrum disorder around the world. Its occurrence approximates more over time and varies significantly within and across socio demographic groups ⁶. Autism is commonly identified in boy babies and children born less than 36 weeks of gestation and it has a strong association with genetic disorder. In US the incidence rate is gradually increasing over the last few years and one in 45 children born with it ⁷.

The incidence in India is 1 in 100 to 1 in 166 children. Statistics displays that the number of children reported with autism in India is growing due to lack of awareness, deficit of basic facilities, and poor diagnosis. In India 18 million children are found with autism. Bihar is the first leading state in India. In Karnataka one in every 66 children has autism ⁵⁻⁷.

The reason for autism is unknown. Evidence shows that source of cause may be gene-environment relations or likely caused by genetic ⁸. Risk factors for autism consists of gender, males are three to four times more likely to develop autism than females, family history, parents' age, and other conditions such as fragile x syndrome, other than these, the use of unnecessary medications during prenatal period has also been recognized as a risk factor ⁹.

Some children show signs of ASD in early childhood, such as reduced eye contact, lack of reaction to their name or insignificance to parents. Other children may grow normally for initial few months or years of life, but then abruptly become quiet or aggressive or lose communication skills they've previously learned. Signs and symptoms typically start to appear by 2 years of age. Each child with ASD will develop distinctive pattern of behaviour and level of severity — from minor to major capacities of work. Children with ASD will struggle to learn and have signs of lower than normal intellectual capacity ¹⁰.

Core deficits of autism are identified in 2 areas: social communication/interaction and restrictive, repetitive patterns of behaviour. Children with ASD have need facilities in behavioural, academic, health, recreation, family support, and other areas. Regular screening for ASD around 18 to 24 months of age with ongoing developmental observations need to be recommended in primary care as ASD can be diagnosed as early as 18 months of age and has evidence-based interventions that may lead to progressive functioning. Primary care providers and

health care professionals should be aware of diagnostic criteria for ASD, appropriate etiologic assessment, and co-occurring medical and behavioural conditions that disturb the child's function and value of life ¹¹.

Children with autism need available health facilities, including preventive, promotive services and treatment of short term and long-term illness. Children with autism have higher rates of unmet health-care needs compared with the normal population. They are also more susceptible various emergencies. Common barrier is formed by health-care professionals is lack of awareness, knowledge and understanding of autism ⁵.

Having sufficient social awareness and a good understanding of the symptoms of ASD will help in early detection of autistic children. Inadequate knowledge, mainly in parents, health care professionals, and school teachers, leads to late identification of ASD in children ¹². Based on this report, there is a tremendous need to assess the knowledge of ASD, and to discover any gap in awareness or lack of information in primary school teachers. This is important for the implementation of management strategies for ASD.

2 Materials and Methods

A non-experimental descriptive survey research design was conducted with the objective to assess the knowledge regarding autism among primary school teachers at Kolar district, Karnataka. Non-probability convenient sampling technique was used to select 84 primary school teachers in various Government and Private schools at Kolar District. The inclusion criteria: who were willing to participate in this study and who were able to read write and understand Kannada or English. Teachers who attended any training programs related to autism were excluded in the study. Data collection tools include subject data sheet and structured knowledge questionnaire. A set of structured knowledge questionnaire was prepared to assess the knowledge. The google form was prepared which consists of 25 questions with multiple choice. The score of teacher's knowledge was categorized as Good knowledge (above 19 - 25 scores) – above 75%, Average knowledge (13 to 18 scores) – 50-75% & Poor knowledge (below 13 scores) – below 50%. The content validity of questionnaire was obtained and modified as per the expert's suggestions. Ethical permission was obtained from the institutional ethical committee. SDUCON/IEC/134/2023. Permission was obtained from concerned School

higher authorities. Google form was sent to the teachers who were working in both government and private schools. Results were presented as mean, frequencies and percentages. Chi Square test was used to determine the association between the Knowledge scores with selected socio demographic variables.

3 Results

3.1 Description of Socio-demographic variables

Majority (33.33%) of the primary school teachers were between the age of 35 – 39 years, who were (61.90%) females, had (30.95%) 6-9 years' experience and 64.28% were postgraduates who were working at government schools.

Table. 1 shows that mean knowledge score of parents was 10.11 ± 3.19 . Majority i.e. 71.42% of the school teachers had inadequate knowledge, 16.66% had average knowledge and none of the teachers had adequate knowledge regarding Autism among children.

Table 1: Level of Knowledge among primary school teachers on Autism (N=84)

Sl. No	Knowledge	Mean \pm SD	Range	Minimum Score	Maximum Score	Frequency	Percentage
1	Adequate knowledge (>75%)					00	00
2	Average knowledge (50-75%)	10.11 \pm 3.19	0 - 25	6	16	14	16.66%
3	Inadequate knowledge (<50%)					70	71.42%

Table 2: Description of knowledge of primary school teachers based on each question (N=84)

Sl. No	Knowledge Questions	Score	Percentage (%)
1	ASD stands for	22	88 %
2	ASD is a	24	96 %
3	ASD commonly found in	6	24 %
4	Current number of children with ASD are	8	32 %
5	The biological factors identified in ASD are	7	28 %
6	Which condition is also on the spectrum of autism disorder	8	32 %
7	ASD is characterized by all of the following EXCEPT?	11	44 %
8	Characteristics of children with autism consists the following EXCEPT	9	36 %
9	One of the following spectrum disorders has the highest prevalence?	11	44 %
10	Which of the following is NOT a commonly recognized highly comorbid disorder among youth with autism?	4	16 %
11	The symptoms of ASD usually emerge at age	4	16 %
12	Which of the following is NOT one of the three specific disorders under the autism spectrum?	8	32 %
13	The triad of social impairment for children with ASD includes all of the following EXCEPT	7	28 %
14	The diagnosis of autism typically includes which of the following information?	13	52%
15	Research is focused on which of the following aspect for children with ASD	7	28 %
16	At what educational level the children with autism are first identified?	11	44 %
17	Teaching social skills to students with autism is most effective when taught	6	24%
18	Which of the following is/are key to develop a positive influence on the learning environment for students with autism	9	36 %
19	Effective programs for students with autism spectrum disorders are based on	9	36 %
20	Which of the following communication method capitalizes on the strengths of children with autism?	4	16 %
21	Autism can be cured with	7	28 %
22	Autism always leads to	4	16 %
23	Which of the following is NOT true of early interventions for ASD?	4	16 %
24	Medications are available to treat the core symptoms of ASD	5	20 %
25	Autism affects the brains normal development of -----and----	9	36 %

Table 3: Association of knowledge scores with socio demographic variables (N=84)

Sl. No	Socio-Demographic Variables	Knowledge level		χ^2	df	p-value	
		Below Median <13	Above Median \geq 13				
1.	Age						
	25 - 29 years	12	4				
	30 - 34 years	17	7	.37	2	0.94	
	35 - 39 years	19	9				
	>40 years	12	4				
2.	Gender						
	Male	19	13	1.79	1	0.19	
	Female	38	14				
3.	Qualification						
	Diploma	-	-	2.52	1	0.11	
	Graduate	26	15				
	Post Graduate	34	09				
4.	No. of year of Experience						
	2-5 years	13	7	0.47	0.81	0.84	
	6-9 years	19	7				
	10-14 years	14	6				
	>15 years	14	4				
5.	Place of working						
	Government School	39	15	0.04	1	0.8	
	Private School	21	9				

4 Discussion

Even though the incidence of autism is increasing the awareness about autism is still inadequate as reported by various studies. A study conducted in India to assess the awareness and knowledge on autism shows that 95% of the teachers had awareness but among those 83% of the teachers had inadequate knowledge on autism ¹³. Another study done in Omani also shows that teachers had lack of awareness on autism ¹⁴. A study done in Singapore also shows that teachers had deficit knowledge on autism ¹⁵. One more study also reveals that teacher's level of knowledge on Autism was 48.7%, which was inadequate ¹⁶. In this descriptive study majority of the teachers know that autism is a developmental disorder of brain, but majority (71.42%) of the teachers had inadequate knowledge on overall autism like causes, clinical manifestation, diagnosis and management and none of the teachers had adequate knowledge. It implies weak level of knowledge among school teachers who were working both in private school at urban areas and government schools at rural areas of Kolar District.

Teachers play a pivotal role in identifying children with developmental disabilities and counsel the parents and guide them on referral. So, it is important that school teachers have to gain adequate awareness and knowledge about autism spectrum disorder, to identify the early symptoms of ASD, for earlier intervention, appropriate education planning, and arrangement of family support services ¹⁶. Teachers cannot initiate any interventions or actions without basic knowledge about Autism. Teachers must have the skills and ability to identify the early signs to refer the children suspected with ASD to specialists and discuss the issue with children's parents. Therefore, they must have adequate knowledge of early signs of ASD, correct belief, and ASD identification skills ¹⁷. Management is more effective when children with ASD are detected earlier. Routine, standardized screening for ASD in children and timely access to diagnostic evaluation can reduce disparities in age at diagnosis ¹⁸. Most of the studies revealed that knowledge of autism among primary school teachers was inadequate which indicates that there is an urgent need to develop professional

development or certification programs to train teachers to work with children with ASD ^{18, 19}.

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