

## Research Article

### A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Autism in Children among Parents and Pre-primary Teachers in Selected Schools of Udaipur City

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#### ABSTRACT

**Background and Objectives:** There are increasing cases of childhood autism in world and today being the third most common developmental disorder with 1 in 250 school children affected it is more common than down syndrome. **Aims:** This study aimed at developing and evaluating a planned teaching programme. Hence, it was felt that an evaluative approach enables the investigator to evaluate the effectiveness of this planned teaching in terms of knowledge gain. The study aimed at evaluating the effectiveness of planned teaching regarding autism in children in terms of the knowledge gained. Hence, a structured self-administered questionnaire was prepared in which the group of samples which involved the pre-primary teachers and parents of the respective schools were administered questionnaire related to autism before and after the health teaching and these were used for collection of data. **Material and Method:** The method adopted for the present study was evaluative approach as the study aimed at evaluating planned teaching program for assessing knowledge of 60 pre-primary teachers and parents in selected school of Udaipur city. In this study, the investigator selected two group pre-test-post-test quasi experimental designs to compare the effect of health teaching on knowledge regarding autism in children among parents and pre-primary teachers in selected schools of Udaipur city. **Result:** The knowledge of autism among parents and pre-primary teachers was assessed. Hypothesis was tested at 0.05 levels. Hence, the research hypothesis ( $H_1$ ) is accepted that there is significant difference between pre-test and post-test knowledge score. The comparison of knowledge score showed that the pre-test knowledge scores of parents (7.53) were comparatively higher than that of the preprimary teachers (7.23) but, on the other hand, it was the opposite that is the post-test knowledge scores of the pre-primary teachers (15.67) were comparatively higher than that of the parents (14.80). Demographic variable educational qualification was found to have significant association with knowledge score for parents' group. **Conclusion:** The health teaching on knowledge regarding autism in children was found to be effective in increasing the knowledge in preprimary teachers and parents and also helps in early diagnosis and treatment of autistic children. The samples had a highly significant gain in knowledge after the planned teaching program. If it was to compare the knowledge of pre-primary teachers and parents it was found that the post-test scores of the teachers were higher than that of the parents, but it was the opposite as to that in the pretest scores. The planned teaching on knowledge of autism in children was found to be effective in enhancing to become aware of the disorder and early diagnosis and treatment.

**Keywords:** Assess, Parents, Knowledge, Pre-primary teachers, Autism

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## Introduction

Autism itself is not an enemy the barriers to development that are included with autism are the enemy. The retardation that springs from a lack of development is the enemy. The sensory problems that are often themselves the barrier are the enemy. These things are not part of who the child is. They are barriers to who the child is meant to be.<sup>[1]</sup>

According to the development blueprint work with the child strength to overcome the weakness and work within the autism not against it. You don't have to wipe all of us out to solve the problems that the non-functioning autistics face. As I see autistics are the other type of persons almost like another species that has an unfortunately high rate of sensory dysfunction and resultant mental retardation in the children.<sup>[2]</sup>

Autism is the fastest growing developmental disorder today being the third most common developmental disorder with 1 in 250 school children affected it is more common than down syndrome there is an alarming rise in the incidence of autism to epidemic proportions, that is, 1/150 (2005) as compared to 1/2500 (1995) the annual growth rate of autism is 10–17% the child is diagnosed with autism every 20 min.<sup>[3]</sup> It is estimated that there are 40 lakh individuals in India using the incidence figures of 1/250 Statistics show that boys are affected more than girls and the ratio is four males to one female though the reason for this is still unknown (Lancet retracts Wakefield's MMR paper. Dyer C. BMJ 2010; 2 February 2010).<sup>[4]</sup>

Autistic spectrum disorder represents a continuum of cognitive and neurobehavioral disorders including autism. The prevalence of autism varies considerably with case ascertainment, ranging from 0.7 to 21.1/10,000 children while the prevalence of autistic spectrum disorder is estimated to be 1–6/1000 (Geier, Global Advisory Committee, WHO).<sup>[5]</sup> There has been a marked increase in the incidence of autism in the past few decades. In the USA, it is said to be 1 in 166 making it the third most prevalent developmental disorder in the world (Cure Autism Now, 2004).<sup>[6]</sup>

Demands for diagnostic and intervention services in childhood developmental and behavioral disorders (CDABD) have increased in Singapore. With earlier enrolment of some 50,000 children in pre-schools, early childhood educators must be well-versed in normal development and CDABD, to help detect children with potential difficulties and refer for early diagnosis and intervention.<sup>[7]</sup>

This study demonstrated educational deficits in CDABD among our pre-school teachers. Yet, most care and want to improve their skills to aid integration and improve education, calling for more training and resource support. Necessary changes in policy and resource allocation should occur to allow better-integrated adults of tomorrow (Lian and Yingsh).<sup>[8]</sup>

This study showed teachers could not identify the disability in children hence interventional and educational

services are needed. Community surveys in china have found prevalence rates of 2/10,000 increasing to 20/10,000 where individuals with severe autistic features are included (Lotter, 2006).<sup>[9]</sup>

Reports of autism cases per 1000 children grew dramatically in the U.S. from 1996 to 2007. It is unknown how much, if any, growth came from changes in autism's prevalence (Klein, 2009).<sup>[10]</sup>

Most recent reviews tend to estimate a prevalence of 1–2/1000 for autism the number of reported cases of autism increased dramatically in the 1990s and early 2000s. This increase is largely attributable to changes in diagnostic practices, referral patterns, availability of services, age at diagnosis, and public awareness (Lissa *et al.*).<sup>[11]</sup>

As per the news published in the Indian express dated on April 2 2010, "It states that an autistic child looks normal hence it is important to create awareness about their condition" says Padmaja Godbole who is the present chairperson of the Padmapurush Foundations Prasanna Autism Centre which was set up in 2000 (Chandrakala).<sup>[12]</sup>

In the same news she also says that autism is not a rare disorder being the third most common developmental disorder more common than Down syndrome typically about 20 in a population of 10000 will have autistic symptoms (Nguyen *et al.*).<sup>[13]</sup>

In the same news it also says that on world autism day the Prasanna autism center which was set up to understand the problem of these special children set up an awareness campaign of which about 20 teachers met members of several laughter clubs early in the morning to talk about autism (Yasodha *et al.*).<sup>[14]</sup>

## Assumption

1. The pre-primary teachers and parents may have some knowledge regarding autism in children.
2. Health education is useful strategy to improve the knowledge of teachers and parents.
3. Selected demographic variables may influence the knowledge of teachers and parents regarding autism in children.

## Material and Method

### Research approach

Quasi experimental approach.

### Research design

Two group pre- test – post-test design.

### Setting of the study

Selected schools of Udaipur city (Divine child public school, Alok sr. sec. school, Shishubharti sr. sec. school, Udaipur).

### Description of tools: Tools consist of two parts

Section—I: Demographic data

Section—II: Structured self-administered knowledge questionnaires

Section—I: Consisted of six items on demographic data separate for parents and pre-primary teachers such as age, education qualification, years of teaching experience for pre-primary teachers, working sectors for parents, monthly family income previous knowledge about autism in children, and source of knowledge.

Section —II: Comprised 20 items to assess the knowledge of pre-primary teachers and parents regarding autism in children. It comprised questions on following broad aspects:

- Meaning of autism
- Incidence of autism
- Causes of autism
- Signs and symptoms of autism
- Diagnostic evaluation for autism
- Management of autism which includes ideal environment

#### Population of the study

The population of the study comprises of parents and pre-primary teachers.

#### Sample size

The sample size comprises 60samples (30 parents and 30 pre-primary teachers).

#### Sampling technique

Non probability convenient sampling technique.

#### Procedure for data collection

The data collection for study was from 09 March to 05 April 2019.

#### Reliability of tools

The reliability coefficient was calculated using “Cronbach’s Alpha method.” The items were coded and the reliability was calculated. The reliability coefficient was found and it was 0.869. Hence, the tool was reliable.

### Results

The collected data are tabulated, analyzed, organized, and presented under the following headings:

Section I: It deals with the analysis of the demographic data of the samples.

Section II: To determine pre-test and post-test knowledge related to autism in children among the pre-primary teachers and parents

**Table 1:** Description of samples (parents group) according to demographic personal/characteristics by frequency and percentage n=30

Demographic variable	Sample characteristics	Frequency	Percentage
Age	21–30 years	19	63.3
	31–40 years	11	36.7
	41–50 years	0	0.0
	51–60 years	0	0.0
Education	Secondary	10	33.0
	Higher secondary	6	20.0
	Graduate	13	43.7
	Postgraduate	1	3.3
Working sector	Private sector	19	63.33
	Govt. sector	1	3.3
	Freelancer	8	26.66
	Business	2	6.66
Monthly Family Income	Below 5000	7	23.3
	5000–10,000	10	33.3
	10,000–15,000	10	33.3
	15,000 and above	3	10.0
Previous knowledge about autism	Yes	14	46.7
	No	16	53.3
Source of knowledge	Magazines newspaper	3	10.0
	Radio television internet	8	26.7
	Health professionals	1	3.3
	Awareness campaign	2	6.7

**Table 2:** Description of samples (teachers group) according to demographic personal/characteristics by frequency and percentage n=30

Demographic variable	Sample characteristics	Frequency	Percentage
Age	21–30 years	13	43.3
	31–40 years	12	40.0
	41–50 years	3	10.0
	51–60 years	2	6.7
Education	Secondary	3	10.0
	Higher secondary	4	13.3
	Graduate	21	70.0
	Postgraduate	2	6.7
Teacher’s experience	<5 years	19	63.37
	6–10 years	7	23.3
	11–15 years	1	3.33
	16 years and above	3	10.0
Monthly Family Income	Below 5000	5	16.7
	5000–10,000	11	36.7
	10,000–15,000	5	16.7
	15,000 and above	9	30.0
Previous knowledge about autism	Yes	21	70.0
	No	9	30.0
Source of knowledge	Magazines newspaper	5	16.7
	Radio television internet	15	50.0
	Health professionals	0	0.0
	Awareness campaign	1	3.3

Section III: It deals with the analysis of data related to knowledge scores of pre-primary teachers and parents and effect of planned health teaching regarding knowledge of autism in children.

Section IV: An Analysis of data to correlate relationship between knowledge and selected demographic variables for teachers and the parents group.

### Section-I

It was found that 19 (63.3%) of the parents were from the age group of 21–30 years and 11 (36.7%) of them were from the group of 31–40 years.

It was found that 13 (43.7%) of them were graduates, 6 (20%) of them had completed higher secondary education, 10 (33.0%) of them had secondary education, and remaining 1 (3.3%) parents were postgraduates.

It was found that 19 (63.33%) of the parents were working in private sector, 1 (3.3%) of them had government job, 2 (6.66%) of them were having business, and remaining 8 (26.66%) of them were freelancer.

It was found that 10 (33.3%) of them were from monthly family income group 5000–10,000 rupees, 3 (10.0%) of them were from income group above 15,000 rupees, 10 (33.3%) of them were from income group 10,000–15,000, and remaining 7 (23.3%) of them were having income below rupees 5000.

It was found that 14 (46.7%) of them had previous knowledge about autism, and remaining 16 (53.3%) of them did not had.

It was found that among those 14 who had previous knowledge about autism, 8 (26.7%) of them had it from radio television internet, 3 (10%) of them had it from magazines newspaper, 1 (3.3%) of them had it from health professionals, and remaining 2 (6.7%) of them had it from awareness campaign [Table 1].

It was found that 13 (43.3%) of the teachers were from the age group of 21 to 30 years, 12 (40%) of them were from group 31 to 40 years, 3 (10%) of them were from 41 to 50 years, and remaining 2 (6.7%) of them were from the age group of 51 to 60 years.

It was found that 21 (70%) of them were graduates, 4 (13.3%) of them had completed higher secondary education, 3 (10%) of them had secondary education, and remaining 2 teachers were postgraduates.

It was found that 19 (63.37%) of the teachers were having experience <5 years, 7 (23.3%) of them had 6–10 years of experience, 3 (10%) of them were having more than 15 years of experience, and remaining 1 (3.33%) of them were having above 16 years' experience.

It was found that 11 (36.7%) of them were from monthly family income group 5000–10,000 rupees, 9 (30%) of them were from income group above 15,000 rupees, 5 (16.7%) of them were from income group 10,000–15,000, and remaining 5 (16.7%) of them were having income below rupees 5000.

It was found that 21 (70%) of them had previous knowledge about autism, and remaining 9 (30%) of them did not had.

It was found that among those 21 who had previous knowledge about autism, 15 (50%) of them had it from radio television internet, 5 (16.7%) of them had it from magazines newspaper, and remaining 1 (3.3%) of them had it from awareness campaign [Table 2].

### Section II

Analysis of data related to knowledge autism in children before and after health teaching to the pre-primary teachers. Table 3 shows that majority, that is, 63.3% of teachers in pre-test had poor knowledge score (0–7), 36.7% of teachers in pre-test had average knowledge score (8–13) and not a single teacher had good knowledge score (14–20), whereas in post-test majority 83.3% of the teachers had good knowledge score (14–20) and 16.7% of them in post-test had average knowledge score (8–13), which indicates that the health teaching was effective.

Table 4 above shows that 50% of parents in pre-test had poor knowledge score (0–7), 50% of parents in pre-test had average knowledge score (8–13) and not a single parent had good knowledge score (14–20), whereas in post-test majority 63.3% of the parents had good knowledge

**Table 3:** Distribution of overall knowledge score in frequency and percentage obtained by the teachers' group  $n=30$

Grade	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Poor (0–7)	19	63.3	0	0.0
Average (8–13)	11	36.7	5	16.7
Good (14–20)		0.0	25	83.3
Total	30	100.0	30	100.0

**Table 4:** Distribution of overall knowledge score in frequency and percentage obtained by the parents' group  $n=30$

Grade	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor (0–7)	15	50		0.0
Average (8–13)	15	50	11	36.7
Good (14–20)		0.0	19	63.3
Total	30	100	30	100.0

**Table 5:** Analysis of data related to the effect of health teaching on the knowledge score based on correct answers in teachers' group  $n=30$

Test	Mean	SD	<i>t</i>	df	<i>P</i>
Pre-test	7.23	2.05	17.89	29	0.0000
Post-test	15.67	2.45			



score (14–20) and 36.7% of them in post-test had average knowledge score (8–13), which indicates that the health teaching was effective.

### Section III

There were 30 teachers in a sample. Each of them had answered 20 questions. Their pre- and post-test correct answers were recorded and mean and standard deviation of the test scores is obtained as below:

Researcher applied paired *t*-test to compare difference between average scoring of before and after health teaching. Since  $P < 0.05$  ( $P = 0.000$ ) difference in average scores is statistically significant. Researcher concluded at 5% level of significance and 29° of freedom that the above data give sufficient evidence to conclude that teachers after received [Table 5]

**Table 6:** Blue print sections analysis of the teachers group n=30

Area	Test	Mean	Mean difference	SD	<i>t</i>	df	<i>P</i>
Definition and incidence and causes of autism	Pre-test	1.13	2.63	0.78	13.53	29	0.0000
	Post-test	3.77		0.94			
Sign and symptoms of autism in children	Pre-test	2.83	2.50	1.02	7.79	29	0.0000
	Post-test	5.33		1.45			
Diagnostic evaluation of autism in children	Pre-test	1.77	0.90	0.82	4.96	29	0.0000
	Post-test	2.67		0.55			
Management strategies for autism in children	Pre-test	1.50	2.40	1.04	9.36	29	0.0000
	Post-test	3.90		0.92			

**Table 7:** Analysis of data related to the effect of health teaching on the knowledge score based on correct answers in parents' group

Test	Mean	SD	<i>t</i>	df	<i>P</i>
Pre-test	7.53	2.37	19.42	29	0.0000
Post-test	14.80	2.43			

**Table 8:** Blue print sections analysis of the parents group

Area	Test	Mean	Mean Difference	SD	<i>t</i>	df	<i>P</i>
Definition and incidence and causes of autism	Pre-test	1.43	2.60	1.14	10.51	29	0.0000
	Post-test	4.03		0.89			
Sign and symptoms of autism in children	Pre-test	2.63	2.07	1.00	8.31	29	0.0000
	Post-test	4.70		1.37			
Diagnostic evaluation of autism in children	Pre-test	1.27	1.17	0.98	7.00	29	0.0000
	Post-test	2.43		0.63			
Management strategies for autism in children	Pre-test	2.20	1.43	1.19	6.74	29	0.0000
	Post-test	3.63		1.03			

health teaching regarding autism in children had higher mean knowledge scores in post-test than in pre-test. Hence, we reject null hypothesis and accept research hypothesis. It can be concluded that, the health teaching regarding autism in children is proved to be effective in delivering the knowledge and awareness [Table 6].

Researcher applied paired *t*-test to each area. *P*-values for each of the areas are  $<0.05$ . Researcher concluded at 5% level of significance and 29° of freedom that the above data give sufficient evidence to conclude that teachers after receiving health teaching regarding autism in children had higher mean knowledge scores in post-test than in pre-test for each of these areas [Table 7].

There were 30 parents in a sample. Each of them had answered 20 questions. Their pre- and post-test correct answers were recorded and mean and standard deviation of the test scores are obtained as below: N=30

Researcher applied paired *t* test to compare difference between average scoring of before and after health teaching. Since  $P < 0.05$  ( $P = 0.000$ ) difference in average scores is statistically significant. Researcher concluded at 5% level of significance and 29 degrees of freedom that the above data give sufficient evidence to conclude that parents after received health teaching regarding autism in children had higher mean knowledge scores in post-test than in pre-test. Hence, we reject null hypothesis and accept research hypothesis. It can be concluded that, the health teaching regarding autism in children is proved to be effective in delivering the knowledge and awareness.

Researcher applied paired *t*-test to each area. *P*-values for each of the areas are  $<0.05$ . Researcher concluded at 5% level of significance and 29° of freedom that the above data give sufficient evidence to conclude that parents after receiving health teaching regarding autism in children had higher mean knowledge scores in post-test than in pre-test for each of these areas.

The comparison of the knowledge scores showed that the pre-test knowledge scores of the parents (7.53) were comparatively higher than that of the preprimary teachers (7.23) but, on the other hand, it was the opposite that is the post-test knowledge scores of the preprimary teachers (15.67) were comparatively higher than that of the parents (14.80).

Following is the visual representation of the comparison of the two groups.

#### Section IV

The relationship between knowledge score and demographic variables of teachers' group was assessed using ANOVA. Following Table 9 gives the summary of ANOVA results:  $n = 30$ .

None of the demographic variables was found to have significant relationship with knowledge score in the teachers group.

The relationship between knowledge score and demographic variables of parents' group was assessed using ANOVA. Following Table 10 gives the summary of ANOVA results:  $N=30$

Demographic variable Educational qualification was found to have significant relationship with knowledge score for parents' group [Table 8].

From the above ANOVA Table 11, it is clear that educational qualification is marginally significantly relationship with pre-test knowledge scores of parents.

Higher the education more is the knowledge.

#### DISCUSSION

The findings of the study have been discussed with reference to the objectives and hypothesis stated in chapter- I and with findings of other studies.

Analysis of the first phase revealed that the majority (63.3%) of samples in the parents' group were between the age group of 21 and 30 years. Majority of samples (43.3%) were graduates. Majority of the samples in the parents' group had no previous knowledge about autism (53.3%) while those who had previous knowledge (46.7%) had majorly received it through radio television and internet media (26.7%) while, on the other hand, majority (43.3%) of samples in the teachers group were between the age group of 21 and 30 years. Majority of samples (70%) were graduates. Most of the samples of the teachers group had work experience of <5 years (63.3%) majority of the samples in the teachers group had previous knowledge about autism (70%) and have majorly received it through radio television and internet media (50%) (Renuka).<sup>[15]</sup>

Majority of 63.3% of teachers in pre-test had poor knowledge score (0–7), 36.7% of teachers in pre-test had average knowledge score (8–13) and not a single teacher had good knowledge score (14–20), whereas in post-test majority 83.3% of the teachers had good knowledge score (14–20) and 16.7% of them in post-test had average knowledge score (8–13) but, on the other hand, 50% of parents in pre-test had poor knowledge score (0–7), 50% of parents in pre-test had average knowledge score (8–13), and not a single parent had good knowledge score (14–20), whereas in post-test majority 63.3% of the parents had good knowledge

**Table 9:** An analysis of data to correlate relationship between knowledge and selected demographic variables for teachers' group

Demographic variable	Frequency (F)	P
Age in years	0.72	0.739
Educational qualification	0.7	0.558
Teaching experience	0.09	0.967
Monthly family income	1.4	0.266
Previous knowledge	1.98	0.171
Source of knowledge	0.93	0.438

**Table 10:** An analysis of data to correlate relationship between knowledge and selected demographic variables for parents' group

Demographic variable	F	P
Age in years	1.02	0.473
Educational qualification	2.37	0.094
Work Experience	0.59	0.733
Monthly family income	0.2	0.893
Previous knowledge	2.8	0.105
Source of knowledge	1.62	0.188

**Table 11:** One-way ANOVA: Pre-test parents versus educational qualification  $n=30$

Source	df	Sum of the square	Mean square	Frequency	"P" value
Educational qualification	3	35.06	11.69	2.37	0.094
Error	26	128.41	4.94		
Total	29	163.47			

**Table 12:** Average pre test score of educational qualification ( $n=30$ )

Educational Qualification	Average Pre-test score
Secondary	6.5
Higher secondary	6.8
Graduate	8.4
Postgraduate	11.0

score (14–20) and 36.7% of them in post-test had average knowledge score (8–13) (Majeed and Shambhavi).<sup>[16]</sup>

The comparison of the knowledge scores showed that the pre-test knowledge scores of the parents (7.53) were comparatively higher than that of the preprimary teachers (7.23) but on the other hand it was the opposite that is the post-test knowledge scores of the pre-primary teachers (15.67) were comparatively higher than that of the parents (14.80). Majority of the samples both pre-primary teachers and parents scored high in post-test than that of pre-test and the mean percentage score of samples regarding knowledge of autism in children was higher in post-test than that of pre-test. The post-test scores obtained were significantly higher than the pre-test scored 0.05 level of significance. This suggests that the planned teaching on knowledge of autism in children was effective. The findings on relationship between

knowledge regarding knowledge of autism in children and selected variables show that there is no significant association between any of the demographic variables of the teachers group but educational qualification in the parents' group had significant association with the knowledge scores [Table 12] (American Psychiatric Association. [1994]. Diagnostic and statistical manual of mental disorders [4<sup>th</sup> ed.]. Washington, DC: Author. pp-107–109).<sup>[17]</sup>

## CONCLUSIONS

When the samples were taken for the study the samples had decreased knowledge about autism. The health teaching on knowledge regarding autism in children was found to be effective in increasing the knowledge in pre-primary teachers and parents.

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