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“EFFECT OF COMPUTER ASSISTED TEACHING REGARDING KNOWLEDGE ON AUTISM AMONG SCHOOL TEACHERS IN SELECTED SCHOOL, PUDUCHERRY”

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Abstract : Introduction: The increasing number of students with ASD (Autism Spectrum Disorder) in mainstream education environments require teachers to know how to identify their needs, being capable to adapt their education processes. Therefore the initial and continuous training of teachers include content and skills related to the education of children with Autism. Research results carried out on this topic suggest that teachers' knowledge on ASD is poor. The aim of study was to assess and the effect Computer Assisted Teaching regarding knowledge on Autism among School Teachers in selected School, Puducherry.

Methods: A Pre-Experimental study was used to assess the level of knowledge regarding on Autism among School Teachers in Selected Schools, Puducherry. After taking a written consent 63 School Teachers were selected using Non probability total enumerative sampling technique. The level of knowledge on Autism among School Teachers was assessed by semi structured questionnaire. The data was analyzed by using frequency, percentage, mean and Standard Deviation. Comparison between pre-test and post-test level of knowledge was analyzed by using Wilcoxon Signed Rank test. The association between the demographic variables and pre-test level of knowledge was analyzed by using Fisher's exact test.

Result: The results show the overall knowledge on Autism among 63 School teachers in pre & post test. 11 (17.5%) of them had average knowledge and 52 (82.5%) of them had poor knowledge on Autism in pre-test. All of them 63 (100%) had Good knowledge in Post-test. Mean of posttest knowledge score (26.62) of the School Teachers was higher than the pretest knowledge score (12.22), z score -6.91, and the p value is <0.001 which was statistically significant. There was no statistically significant association between the pre-test level of knowledge with Age, Education, Class handled, Residence, Religion, Years of experience and Previous knowledge on Autism at the significance level of $p < 0.05$.

Conclusion: The current findings suggest that the Computer Assisted Teaching is an effective teaching method and it can be easily administered to the School teachers which in turn will improve the knowledge and they will acquire the skills to identify the children with Autism.

Index terms: Autism, knowledge, Computer Assisted Teaching, School Teachers.

1.INTRODUCTION

“Knowledge empowers”. Having a child with Autism necessitates finding out as much as possible about all aspects of the condition, treatment, and services that are available. It also helps parents to understand their child's reactions and can contact more appropriate professionals and service providers without delay.¹

Autism is a developmental disorder characterized by impaired social interaction, communication, restricted and repetitive behavior. It can be noticed during the first three years of life. Autism is associated with genetic, environmental factors, certain infections like rubella, toxins, alcohol, cocaine, pesticides, lead and air pollution, fetal growth restriction and auto immune diseases. Mostly Autistic children have difficulty in speech & language. Many children with Autism are highly intelligent and learn to read and write at an early age. Each child is distinct and should not be labeled based on his or her place on the bell-shaped curve. A child labeled low functioning

today with proper therapy can move up the spectrum. Every child with Autism has his or her own strengths and weaknesses. Teachers must use learning styles that fit the child's strengths.²

Aggressive behavior is a very serious problem for children with Autism spectrum disorders (ASD). Though little clinical data exists to show how often aggression is observed in children with ASD, reports from parents, teachers, and other professionals suggest that aggression is not uncommon.³

School Teachers play major role in dealing with the children in early childhood since the children spend most of the time in the school. They must have the knowledge about Autism to provide special concentration to the child affected with Autism.⁴ The fact that teachers have the knowledge about ASD is beneficial in order to provide an adequate social and educational setting in which students with ASD are included. Constructive knowledge positively impacts daily practices in mainstream and special education settings. In general, teachers in every single stage of education (no matter of their specialization) need some professional and scientific training on inclusive education. Knowledge is a relevant predictor of teachers' ability and awareness to provide inclusive learning to pupils with ASD, helping them better access to the early screening and identification process.⁵

School Teachers play major role in dealing with the children in early childhood since the children spend most of the time in the school. So the teachers should know about the autism to identify early the children with Autism and refer them if needed to the special school. Also to understand them and guide them with more concern.

II. STATEMENT OF THE PROBLEM

A Study to assess the Effect of Computer Assisted Teaching regarding knowledge on Autism among School Teachers in selected School, Puducherry.

III. AIM

The aim of the study was to assess the Effect of Computer Assisted Teaching regarding knowledge on Autism among School Teachers in selected School, Puducherry.

IV. OBJECTIVES

1. To determine the effect of Computer Assisted Teaching on Autism among School Teachers.
2. To find out the association between the pretest level of knowledge on Autism among School Teachers with selected socio demographic variables.

V. RESEARCH HYPOTHESES

H₁-There will be a significant difference in the level of knowledge on Autism among School Teachers before and after Computer Assisted Teaching.

H₂-There will be a significant association between pretest level of knowledge on Autism among School Teachers with selected socio demographic variables.

VI. RESEARCH METHODOLOGY

6.1. RESEARCH APPROACH –

Quantitative experimental approach was adopted for conduction of the study.

6.2. RESEARCH DESIGN

In this study pre experimental one group pretest posttest design was used.

6.3. SETTING OF THE STUDY

The research setting is that the location where the researcher will collect the information for the study participants. This study was conducted in Selected Girls Higher Secondary School, Mission Street, Puducherry.

6.4. SAMPLING

The sample of the present study was 63 school teachers from selected school, Puducherry. who were teaching in kindergarten and primary school.

6.5. Sample size calculation

Sample size was calculated from the study conducted to assess the effectiveness of Structured Teaching Programme (STP) on knowledge of School Teachers regarding Learning disability in children in selected Primary English Medium Schools at Yeola city, Maharashtra(2018) in which the good knowledge level in pretest was 25% and in post-test 78%. Estimated sample size is 27 with power 80%, significance 5%, and accounting for 10% dropout sample size is increased to 30. In this study Sample size is 63.

6.6. SAMPLING TECHNIQUE

In this study Non probability Total enumerative sampling technique was used. All the school teachers from kindergarten to 5th standard (63) were selected for the present study.

6.7. DATA COLLECTION TOOL

- Demographic variables of School Teachers such as Age, Educational qualification, Classes handled, Religion, Residence, Years of experience and Previous knowledge on Autism.
- Semi-structured knowledge questionnaire on Autism: It consists of 30 multiple choice questions to assess the knowledge regarding Autism. Each question has three options, with one correct answer and two incorrect answers.

6.8. Data Collection Process:

After obtaining Formal permission from The Director Principal, Principal–College of Nursing, Internal Scientific Committee (ISC), PIMS and The Principal, Selected Girls“ Higher Secondary School, Puducherry. Obtained ethical clearance from Institutional Ethical Committee (IEC),PIMS. The nature and purpose of the study was explained to the school teachers and informed consent was obtained from the selected 63 participants. The School Teachers (63) who fulfilled the inclusion criteria were selected. Day 1: Pre-test using semi structured questionnaire and 15 minutes given to fill the questionnaire. Computer assisted teaching on Autism was given to the participants for 45 minutes. Handouts on referral services, ways to deal Children with Autism and model form of assessment of Autism were given. On 14th day Post-test was conducted for the study participants by using the same tool. Data were collected and compiled for data analysis. Confidentiality was assured to all study participants.

VII. ANALYSIS

SECTION A: DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF SCHOOL TEACHERS.

Table 1: Frequency and percentage distribution of demographic variables of School Teachers. (n=63)

S.No.	Demographic Variables	Frequency	Percentage
1.	Age (In Years)		
	a. 21 – 30	8	12.7
	b. 31 – 40	28	44.4
	c. 41 – 50	23	36.5
	d. 51 – 60	4	6.3
2.	Education		
	a. D.T.Ed & U.G	17	27.0
	b. U.G & B.Ed.	17	27.0
	c. P.G & B.Ed.	26	41.3
	d. Others	3	4.8
3.	Class Handled		
	a. Nursery	12	19.0
	b. 1 to 5	51	81.0
4.	Residence		
	a. Rural	18	28.6
	b. Urban	45	71.4
5.	Religion		
	a. Hindu	6	9.5
	b. Christian	57	90.5
6.	Experience (In Years)		

	a. 1 – 5	14	22.2
	b. 6 – 10	10	15.9
	c. 11 – 15	16	25.4
	d. Above 15	23	36.5
7.	Previous knowledge on Autism		
	a. Yes	12	19.0
	b. No	51	81.0

SECTION B: PRE-TEST AND POST-TEST KNOWLEDGE SCORES OF SCHOOL TEACHERS. (n=63)

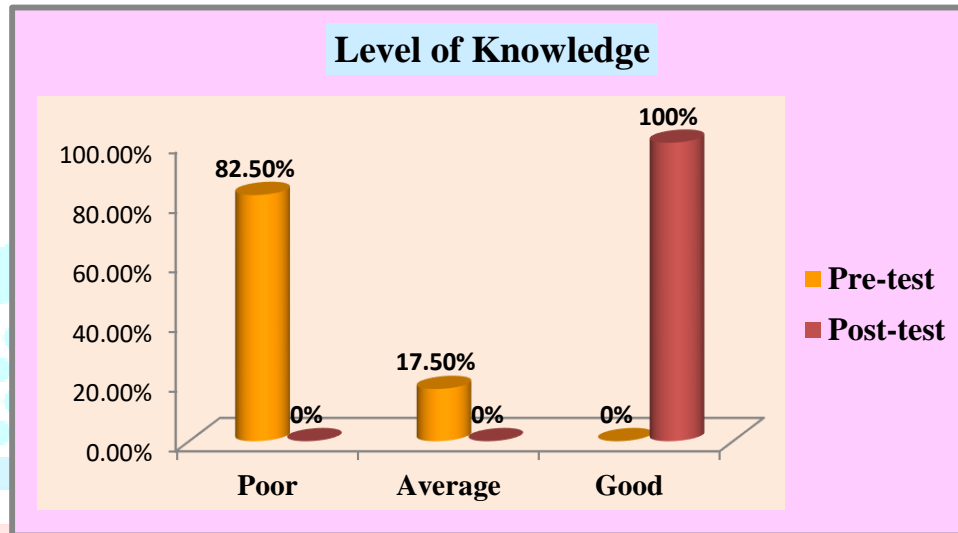


Fig 1: Distribution of Pre-test and Post-test level of knowledge regarding Autism

SECTION C: Comparison of Pre-test and Post-test Mean score knowledge on Autism among School Teachers.

Table 2: Effect of Computer Assisted Teaching Regarding Knowledge on Autism. (n=63)

Level of Knowledge on Autism	Mean	Standard Deviation	Median	Inter Quartile Range	z score	p value
Pre-test	12.22	3.28	12.0	10.0-15.0	-6.91	0.000* S
Post-test	26.62	1.67	27.0	26.0-28.0		

*Significant at the level of $p < 0.001$

Table 2 shows the Pre-test and Post-test Mean, Median, Inter Quartile Range, Standard deviation, z score and the p value of knowledge scores of school teachers. Mean of post-test knowledge score (26.62) of the School Teachers was higher than the pre-test (12.22), Median of post-test knowledge score (27.0) of the School Teachers was higher than the pre-test (12.0), Pre-test Inter Quartile Range was (10.0-15.0), Post-test Inter Quartile Range was (26.0-28.0), z score -6.91, and the p value < 0.001 which was calculated by using Wilcoxon signed Rank test was statistically significant.

SECTION D: Association of Pre-test level of Knowledge Regarding Autism with selected Demographic variables.**Table 3:** Association of pre-test level of knowledge regarding autism with selected demographic variables.

(n=63)

S.No.	Demographic Variables	Level of Knowledge				p Value
		Poor (0-50%)		Average (51-75%)		
		f	%	f	%	
1.	Age (in years)					0.662 NS
	a. 21 – 30	6	11.5	2	18.2	
	b. 31 – 40	22	42.3	6	54.5	
	c. 41 – 50	20	38.5	3	27.3	
	d. 51 – 60	4	7.7	0	-	
2.	Education					0.872 NS
	a. D.T.Ed & U.G	15	28.8	2	18.2	
	b.U.G & B.Ed	13	25.0	4	36.4	
	c.P.G & B.Ed	21	40.4	5	45.5	
	d.Others	3	5.8	0	-	
3.	Class Handled					0.425 NS
	a. Nursery	9	17.3	3	27.3	
	b.1 to 5	43	82.7	8	72.7	
4.	Residence					0.489 NS
	a.Rural	16	30.8	2	18.2	
	b.Urban	36	69.2	9	81.8	
5.	Religion					0.060 NS
	a.Hindu	3	5.8	3	27.3	
	b.Christian	49	94.2	8	72.7	
6.	Experience (inyears)					0.121 NS
	a.1 – 5	10	19.2	4	36.4	
	b.6 – 10	10	19.2	0	-	
	c.11 – 15	15	28.9	1	9.1	
	d.Above 15	17	32.7	6	54.5	
7.	Previous knowledge on Autism					0.197 NS
	a.Yes	8	15.4	4	36.4	
	b.No	44	84.6	7	63.6	

NS- Non Significant

Table 3 reveals the association of pre-test level of knowledge regarding autism with the demographic variables. It was found that there was no statistically significant association between the level of knowledge regarding autism with the demographic variables (like age, education, classes handled, residence, religion, years of experience and previous knowledge on Autism) at the level of p value < 0.05.

VII. DISCUSSION:**7.1. Major Findings of the Study:**

- Findings related to demographic variables of School Teachers.**

In this study Majority of them 28 (44.4%) belong to the age group of 31 – 40 years. Based on education 26 (41.3%) had completed P.G & B.Ed. With regard to teachers handling classes 51 (81%) were from 1 to 5 classes. Majority of School Teachers 45 (71.4%) were residing in Urban. According to religion 57 (90.5%) were Christian. With regard to years of experience 23 (36.5%) had more than 15 years, Most of them 51 (81%) had no previous knowledge on Autism.

- **Findings related to effect of Computer Assisted Teaching on Autism among School Teachers.**

- σ In this study it shows the effect of Computer Assisted Teaching regarding knowledge on Autism among School Teachers. With regard to the overall knowledge on Autism none of them had Good knowledge, 11(17.5%) of them had Average knowledge and 52(82.5%) of them had poor knowledge before intervention. In post-test all of them 63 (100%) gained Good knowledge on Autism.
- σ In this study it shows the effect of Computer Assisted Teaching on Autism among School Teachers. Pre-test and Post-test Mean, Standard deviation, z score and the p value of knowledge scores of school teachers. Mean of post-test knowledge score (26.62) of the School Teachers was higher than the pre-test Mean (12.22), z score -6.91, and the p value <0.001 which was calculated by using Wilcoxon signed Rank test was statistically significant.

- **Findings related to Association of pre-test level of knowledge regarding autism with the selected demographic variables.**

In this study it reveals the association of pre-test level of knowledge regarding autism with the demographic variables. It was found that there was no statistically significant association between the level of knowledge regarding autism with the demographic variables (like age, education, classes handled, residence, religion, years of experience and previous knowledge on Autism) at the level of p value < 0.05.

7.2. RECOMMENDATIONS:

On the basis of the study findings, the following recommendations were made for further research.

- Similar study can be replicated on a large sample to generalize the study findings.
- A comparative approach can be used to know the level of knowledge among School Teachers between the region/Schools.
- A similar study can be conducted in many schools.

VIII. CONCLUSION:

The findings are discussed in relation to the objectives of the study. The primary aim of the study was to assess the effect of Computer Assisted Teaching regarding knowledge level on Autism among School Teachers and to found out that there was no statistical association between the pretest level of knowledge on Autism among School Teachers with selected demographic variables. The current findings suggest that the Computer Assisted Teaching is an effective teaching method and it can be easily administered to the School teachers which in turn will improve the knowledge and they will acquire the skills to identify the children with Autism.

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