

A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAM ON THE KNOWLEDGE OF PRIMARY SCHOOL TEACHERS REGARDING AUTISM SPECTRUM DISORDER IN SELECTED PRIMARY SCHOOLS

1. Mrs. Anshika Yadav , 2.Mrs. Rajani Karsayal

1.M.Sc. Nursing Student, 2. Professor

Mental Health Nursing

Bora Institute of Allied Health Sciences , Lucknow , India

Abstract : Introduction :

Autism spectrum disorder begins in early childhood. Over time, it can cause difficulty functioning in society. For example, people with autism spectrum disorder may have problems being social or when in school or at work. Often children show symptoms of autism within the first year of life. A small number of children with the condition appear to develop as expected in the first year. Then between 18 and 24 months of age, they may lose some skills and develop autism symptoms.

There is no cure for autism spectrum disorder. But getting treatment early, during the preschool years, can make a big difference in the lives of many children with the condition.

Problem of the statement:

A pre-experimental study to assess the effectiveness of a structured teaching program on the knowledge of primary school teachers regarding autism spectrum disorder in selected primary schools

Objectives:

1. To assess the pre-test level of knowledge of primary school teachers regarding autism spectrum disorder (ASD).
2. To assess the post-test level of knowledge of primary school teachers regarding ASD after administration of Structured Teaching Program.
3. To evaluate the effectiveness of Structured Teaching Program by comparing pre-test and posttest knowledge scores.
4. To find the association between the pre-test knowledge scores of primary school teachers and their selected demographic variables.

METHOD

The study will use a pre-experimental one-group pre-test and post-test design. The data was generated by using structured knowledge questionnaire. A purposive sampling technique is used to selected 30 sample.the data was obtained from the study.subject for analusis and interpretation in term of the objective and hypothesis of study.

RESULT:

1. 60% of teachers had poor knowledge in the pre-test, while 40% had moderate knowledge.

2. After the Structured Teaching Programme, 82.5% of teachers had good knowledge and 17.5% had moderate knowledge.
3. The mean knowledge score increased from 9.57 (pre-test) to 22.90 (post-test).
4. The improvement was statistically significant ($t = 24.103$, $p < 0.001$), proving the programme was effective.
5. Educational qualification and previous exposure to children with ASD were significantly associated with baseline knowledge, while age, gender, teaching experience, and school type were not.

CONCLUSION:

The study revealed that the knowledge of primary school teacher regarding autism spectrum disorder.

INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder characterized primarily by persistent deficits in social communication and social interaction, along with restricted, repetitive patterns of behavior, interests, or activities. These features begin in the developmental period, usually in early childhood, although they may become more clearly visible when the child is exposed to increasing social and academic demands in school and community environments. ASD affects multiple domains of functioning, including language development, peer relationships, emotional reciprocity, adaptive behavior, and classroom participation, making it one of the most important developmental conditions encountered in child health and education settings. One of the notable language characteristics seen in ASD is echolalia, which refers to the repetition of words, phrases, or sentences heard from others, television, songs, or prior conversations. Echolalia may be immediate or delayed. Earlier literature often regarded echolalia as meaningless repetition, but more recent work suggests that in many cases it may serve communicative, regulatory, or processing functions, especially in children with limited spontaneous language. Still, persistent echolalia can interfere with functional communication and may make classroom conversation difficult if teachers are not aware of its significance. The second major domain of ASD involves restricted, repetitive behaviors and interests. These behaviors are characterized by repetition, inflexibility, invariance, and a tendency to interfere with adaptive functioning when severe. They may include repetitive motor actions such as hand flapping, rocking, finger flicking, spinning, pacing, or repetitive manipulation of objects. Some children line up toys, spin wheels, repeatedly open and close doors, or become intensely preoccupied with specific routines or object features. These behaviors may appear purposeless to observers, but they can reflect sensory regulation, anxiety reduction, self-stimulation, or rigid cognitive style.

NEED OF THE STUDY

Rising Prevalence of ASD

ASD has shown a significant increase in prevalence over recent decades, making it one of the most important neurodevelopmental conditions affecting children worldwide. The rising number of identified cases has drawn considerable attention from healthcare professionals, educators, and policymakers. This increase is attributed to multiple factors, including improved awareness, advancements in diagnostic criteria, better screening practices, and enhanced reporting systems. However, some researchers also suggest that a true increase in incidence may be contributing to the observed trend. The increasing prevalence of ASD has important implications for educational systems, particularly at the primary school level. As more children with ASD are enrolled in mainstream schools, teachers are increasingly required to address diverse learning needs within the classroom. Children with ASD may present with challenges related to communication, social interaction, behavior, and adaptability to structured environments, all of which can affect their academic performance and participation.

3.1 Population and Sample

A population is the entire aggregation of cases that meet designated set off criteria, the need of defining population for research project rise from the requirement to specify the group to which the end result of the study is applied.

For the present study population consisted of The target population of the present study comprised primary school teachers teaching classes from grade 1 to grade 5 in selected schools.

In the prevailing study, the sample size the sample size will be 30 primary school teachers.

3.2 Data and Sources of Data

Instruments, developed to gather necessary data for study were divided in three sections:

Section A: Description of the demographic Performa.

Section B: The structured knowledge questionnaire consisted of (30 items), which were carefully developed to ensure comprehensive coverage of all essential aspects of ASD. The number of items was determined based on the need to balance adequacy of content coverage with feasibility and practicality for the participants.

3.3 Theoretical framework

Variables of the study contains dependent and independent variable. The study used pre-specified method for the selection of variables.

RESEARCH METHODOLOGY

The methodology section outline the plan and method that how the study is conducted. This includes Universe of the study, sample of the study, Data and Sources of Data, study's variables and analytical framework. The details are as follows;

3.1 Population and Sample

A population is the entire aggregation of cases that meet designated set off criteria, the need of defining population for research project rise from the requirement to specify the group to which the end result of the study is applied.

For the present study population consisted of The target population of the present study comprised primary school teachers teaching classes from grade 1 to grade 5 in selected schools.

In the prevailing study, the sample size the sample size will be 30 primary school teachers.

3.2 Data and Sources of Data

Instruments, developed to gather necessary data for study were divided in three sections:

Section A: Description of the demographic Performa.

Section B: The structured knowledge questionnaire consisted of (30 items), which were carefully developed to ensure comprehensive coverage of all essential aspects of ASD. The number of items was determined based on the need to balance adequacy of content coverage with feasibility and practicality for the participants.

The prepared research tool along with problem statement, objectives, operational definition, criteria checklist were distributed to 5 experts from Mental Health Nursing, 3 from psychiatrist and 1 from English expert and 1 from Hindi expert for content validation. The item level content validity index (CVIs) for demographic variable ranged from 1 to 0.8 & the scale level CVI using the averaging approach was 0.83. The item level content validity index (CVIs) for structured knowledge Questionnaire ranged from 1 to 0.8 & the scale level CVI using the averaging approach was 0.93. Reliability was found out by using test – retest method for knowledge and the tool was found reliable ($r = 0.94$).

3.3 Conceptual Framework

The conceptual framework of the present study is based on the idea that knowledge enhancement through a structured educational intervention can bring measurable improvement in teacher preparedness regarding Autism Spectrum Disorder. In this framework, the input consists of the primary school teachers' baseline characteristics and their existing knowledge regarding ASD. The throughput is the structured teaching program administered by the investigator, which includes information about the meaning, symptoms, early identification, classroom challenges, and support strategies related to ASD. The output is the post-test knowledge level of the teachers after exposure to the program.

The framework assumes that teachers enter the study with varying levels of prior knowledge influenced by demographic and professional variables such as age, qualification, teaching experience, and previous exposure to special education content. The structured teaching program acts as the intervention designed to bridge the knowledge gap. Improvement in post-test scores compared to pre-test scores indicates the effectiveness of the program. Thus, the conceptual framework highlights a direct relationship between educational intervention and gain in knowledge, while also recognizing the possible influence of demographic variables on pre-test knowledge levels.

3.4 Statistical tools

This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

3.4.1 Descriptive Statistics

Frequency and Percentage distribution of socio-demographic variable.

- The age-wise distribution of primary school teachers shows that the largest proportion of respondents belonged to the 31-40 years age group, comprising 15 teachers (37.5%). Equal representation was observed in the 21-30 years and 41-50 years age groups, with 10 teachers (25.0%) in each category. Only 5 teachers (12.5%) were aged above 50 years.
- The gender distribution reveals that the majority of the participants were female teachers, accounting for 25 respondents (62.5%), while male teachers constituted 15 respondents (37.5%).
- The distribution of educational qualifications shows that more than half of the participants, 21 teachers (52.5%), had completed B.Ed, making it the most common qualification in the sample. D.El.Ed was reported by 9 teachers (22.5%), followed by M.Ed among 7 teachers (17.5%). Only 3 teachers (7.5%) belonged to the 'Other' qualification category..
- The distribution of teaching experience shows that 16 teachers (40.0%) had 5-10 years of teaching experience, forming the largest group. Teachers with more than 10 years of experience accounted for 14 respondents (35.0%), while 10 teachers (25.0%) had less than 5 years of experience
- The distribution according to type of school shows that 22 teachers (55.0%) were from private schools, while 18 teachers (45.0%) were from government schools.
- The table shows that 16 teachers (40.0%) had previous exposure to a child with Autism Spectrum Disorder, whereas 24 teachers (60.0%) reported no such exposure.
- The distribution of previous inclusive education workshop attendance shows that only 12 teachers (30.0%) had attended such a workshop, while 28 teachers (70.0%) had not received prior workshop exposure.
- The pre-test knowledge assessment shows that 24 teachers (60.0%) had poor knowledge and 16 teachers (40.0%) had moderate knowledge regarding Autism Spectrum Disorder. None of the participants achieved the good knowledge category before the intervention. The mean pre-test score was 9.57 ± 3.19 , suggesting that baseline knowledge was largely inadequate to moderate.
- The post-test knowledge assessment shows a marked improvement after administration of the structured teaching programme. A total of 33 teachers (82.5%) achieved good knowledge, while 7 teachers (17.5%) remained in the moderate category. Importantly, none of the respondents remained in the poor knowledge category after the intervention. The mean post-test score increased to 22.90 ± 2.74 , indicating substantial improvement in understanding of Autism Spectrum Disorder.

3.4.2.1 t- test

Parameter		Pre-test	Post-test	Knowledge gain	
N		40	40	40	
Mean		9.57	22.9	13.32	
Median		9.0	23.0	13.0	
Standard deviation		3.19	2.74	3.5	
Minimum		4	18	5	
Maximum		15	28	21	
Comparison	Mean difference	SD difference	t value	df	p value
Post-test minus pre-test	13.32	3.5	24.103	39	<0.001

3.4.2.2 Chi Square test

The association analysis indicates that most demographic variables did not show a statistically significant relationship with pre-test knowledge level. Age group, gender, teaching experience, type of school, and previous inclusive education workshop were not significantly associated with baseline knowledge. However, educational qualification showed a significant association (chi-square = 8.519, $p = 0.036$), and previous exposure to a child with ASD was also significant (chi-square = 4.171, $p = 0.041$). These findings suggest that formal qualification and direct experience with children having ASD may influence teachers' initial knowledge. The result partially supports the hypothesis regarding association with selected demographic variables.

IV. RESULTS AND DISCUSSION

4.1 Domain-wise Improvement

The domain-wise analysis shows improvement across all areas of the questionnaire after the structured teaching programme. The highest mean gain was observed in educational management and classroom role (4.05), followed by signs and symptoms (3.15), definition and characteristics (2.38), diagnosis and early identification (2.08), and causes and risk factors (1.68). This pattern suggests that the intervention improved both theoretical and practical knowledge. The greater gain in classroom management is important because teachers are expected to support children with ASD in daily classroom situations. Overall, the improvement confirms that the teaching content was relevant.

Table-11 Domain-wise Improvement

Domain	No. of items	Pre-test mean	Post-test mean	Mean gain
Definition and characteristics	6	2.12	4.5	2.38
Causes and risk factors	4	1.32	3	1.68
Signs and symptoms	8	2.77	5.92	3.15
Diagnosis and early identification	4	1.1	3.17	2.08
Educational management and classroom role	8	2.25	6.3	4.05

4.2 Association between pre-test knowledge and demographic variables

Demographic variable	Chi-square value	df	p value	Inference
Age group	1.944	3	0.584	Not significant
Gender	0.111	1	0.739	Not significant
Educational qualification	8.519	3	0.036	Significant
Teaching experience	2.344	2	0.31	Not significant
Type of school	0.038	1	0.846	Not significant
Previous exposure to child with ASD	4.171	1	0.041	Significant
Previous inclusive education workshop	3.616	1	0.057	Not significant

I. ACKNOWLEDGMENT

I am grateful to my guide, faculty, and institution for their support, to the participants and families for their cooperation, and to my peers and loved ones for their encouragement throughout this study..

REFERENCES

1. Hodges H, Fealko C, Soares N. Autism spectrum disorder: definition, epidemiology, causes, and clinical evaluation. Translational pediatrics. 2020 Feb;9(Suppl 1):S55.
2. Hirota T, King BH. Autism spectrum disorder: a review. Jama. 2023 Jan 10;329(2):157-68.
3. Oberman LM, Kaufmann WE. Autism spectrum disorder versus autism spectrum disorders: Terminology, concepts, and clinical practice. Frontiers in psychiatry. 2020 May 25;11:484.
4. Posar A, Visconti P. Autism spectrum disorder in 2023: a challenge still open. Turkish archives of pediatrics. 2023 Nov 1;58(6):566.

Copyright & License:

© Authors retain the copyright of this article. This work is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.