

THE IMPACT OF A PLANNED TEACHING PROGRAM ON PRIMARY SCHOOL TEACHERS' UNDERSTANDING OF ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD): A PRE-EXPERIMENTAL STUDY CONDUCTED IN BHATIMUNDA, ODISHA

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Abstract

This research examined primary school teachers' knowledge of ADHD and the efficiency of a Planned Teaching Programme to improve it. The pre-experimental investigation used a one-group pre- and post-test paradigm. A simple purposive sampling method selected 40 primary school teachers from two Tangi, Cuttack, schools. A standardised questionnaire and the Knowledge of Attention Deficit Disorder Scale were used to collect data. A large 60% of individuals had little ADHD knowledge. The pre-test showed 20% of teachers had inadequate knowledge, 75% moderate knowledge, and 5% adequate knowledge. After the intervention, all participants had appropriate knowledge. Statistical analysis showed that the average score after the test (18.6) was substantially higher than before (9.68). The "t" value of 15.02 exceeded the critical value of 2.023. These findings demonstrate that the Planned Teaching Programme improved primary school teachers' ADHD knowledge and awareness.

Key Words: Effectiveness, Planned Teaching Program, Attention Deficit Hyperactivity Disorder, Knowledge, Primary School Teachers

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is a condition that causes problems with paying attention, being easily distracted, and being overly active. These challenges can make it hard for children to succeed in school and socialize with others. ADHD affects about 3% to 10% of school-aged children, making it one of the most common conditions diagnosed in students. Many children with ADHD also have other disorders; about two-thirds of them experience at least one additional condition. More than one-third of children with ADHD have three or more coexisting conditions, such as anxiety, conduct disorders, depression, and learning disabilities. Research shows that the overlap between speech problems and ADHD can range from 8% to 90%. Speech sound disorders often occur alongside ADHD, affecting about 40% to 60% of preschoolers with these issues. Additionally, around 11% to 15% of six-year-olds with speech sound disorders also struggle with language problems.(1)

There is a notable connection between ADHD, intellectual disability (ID), problem behavior, and autism spectrum disorder (ASD). The occurrence of ADHD in individuals with ID and ASD is significantly more prevalent than in the general population, with rates estimated

between 10% and 28%. Diagnosing ADHD in individuals with ID and low-functioning ASD can be challenging due to the limitations of categorical diagnostic criteria, which may not be suitable for those experiencing severe cognitive and communication difficulties. To assess symptoms of inattention in persons with ID, observing distractibility that doesn't align with their developmental level can be useful. Additionally, hyperactivity and impulsivity can be indicated by behaviors such as constant fidgeting, a tendency to be excessively active, and difficulties remaining seated or waiting for one's turn. These behaviors may sometimes lead to verbal or physical aggression, irritability, mood swings, or self-harm.(2)

Understanding ADHD is crucial for educators, as they frequently serve as the initial observers of its symptoms in children. Their awareness and knowledge can play a significant role in early identification and intervention, which can positively impact a child's educational experience and development.(3)

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that significantly impacts children's academic and social functioning. Educators play a crucial role in the assessment and management of ADHD, as they are often the first to recognize and support students experiencing this condition. Their involvement is essential in identifying challenges and implementing strategies that foster a conducive learning environment for these students. However, research suggests that there is a concerning gap between the crucial role teachers play and their actual knowledge and understanding of ADHD.(4)

Research indicates that teachers often serve as a primary resource for diagnosing ADHD in children. With over half of primary care paediatricians anticipated to integrate school reports into their diagnostic procedures, it will be noteworthy to observe the evolution of this trend and its potential impact on child healthcare in the future (Carey, 1999). This highlights the necessity for educators to have precise and thorough knowledge of ADHD to effectively engage in assessment and treatment decision-making. Studies indicate that educators commonly have a restricted comprehension of ADHD and frequently maintain substantial misconceptions about its characteristics, causes, development, and consequences (Barbaresi & Olsen, 1998; Jerome et al., 1994; Sciutto et al., 2000; Snider et al., 2003; Vereb & DiPerna, 2004; West et al., 2005; Weyandt et al., 2009).(5–11)

The existing knowledge deficit is significantly influenced by the insufficient training of educators in the field of Attention Deficit Hyperactivity Disorder (ADHD) (Busing et al., 2002; Jerome et al., 1994; Sciutto et al., 2000; Kos et al., 2004). (6,7,12,13)

To address these concerns and build upon previous research, this study aims to investigate three key questions: (1) the extent of primary school teachers' knowledge about ADHD, (2) the evaluate the effectiveness of structured teaching program on ADHD knowledge (3) the association between teachers' ADHD knowledge and their socio-demographic variables. By exploring these aspects, this research seeks to provide valuable insights that can inform teacher education programs and professional development initiatives, ultimately improving the support and outcomes for students with ADHD in educational settings.

Methodology

A pre-experimental one-group pre-test post-test design was implemented to assess the effectiveness of a structured teaching program on ADHD knowledge among primary school teachers in selected schools in Bathimunda, District Cuttack, Odisha. The study included a sample of 40 participants recruited through non-probability purposive sampling methods. Data were collected using a knowledge questionnaire created by the researchers, which underwent extensive literature review for development.

The structured knowledge questionnaire comprised 30 multiple-choice questions, focusing on various aspects of ADHD, including etiology, epidemiology, and its course. Additionally, the questionnaire addressed the signs and symptoms of ADHD and assessed the knowledge regarding its diagnosis and management strategies. Validation of the tool was achieved through expert review from five professionals—three specializing in psychiatric nursing and two in child health nursing.

Prior to the main study, a pilot test was conducted with four participants at the Government Primary School, Ramgarh, Tangi, to evaluate the questionnaire's effectiveness. The reliability of the tool was determined using the test-retest method, yielding a reliability coefficient of 0.80 via the Pearson correlation coefficient.

Data collection occurred from the second week of April to the first week of May 2023. The self-reporting questionnaire method was employed for data gathering, following the acquisition of formal permissions from school principals and informed consent from the primary school teachers. On Day 1, a pre-test was administered, after which the structured knowledge questionnaire was presented via a PowerPoint lecture for 45 minutes. The post-test evaluation took place on the seventh day.

Statistical analysis of the collected data was conducted utilizing both descriptive and inferential statistics to determine the effectiveness of the educational intervention.

Results

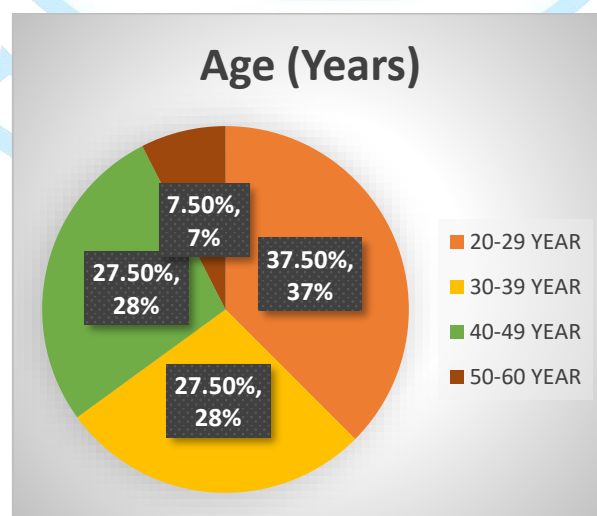


Figure – 1: Percentage Distribution of Samples According to Age (years)

The age distribution of primary school teachers reveals some interesting trends. Among them, a significant portion, accounting for 37.5%, belongs to the younger age group of 20 to 29 years. This suggests a vibrant influx of new educators into the profession. Following closely, 27.5% of teachers are in the 30 to 39 age range, indicating that many are gaining valuable experience during these crucial years. Similarly, another 27.5% of teachers fall within the 40 to 49 age bracket, reflecting a mature workforce that brings depth of knowledge and expertise. Lastly, a smaller segment of just 7.5% represents those aged 50 and above, hinting at the eventual transition out of the profession for some of these seasoned educators.

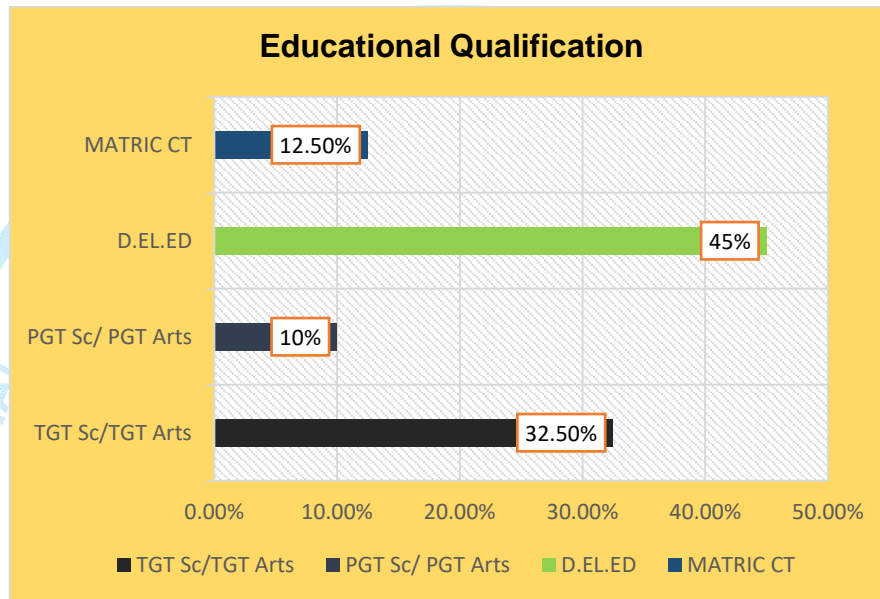


Figure – 2: Percentage Distribution of samples according to Educational Qualification

The percentage distribution of primary school teachers based on their educational qualifications is as follows: 32.5% hold a TGT (Trained Graduate Teacher) degree in Science or Arts, 10% possess a PGT (Post Graduate Teacher) degree in Science or Arts, 45% have completed a D.El.Ed (Diploma in Elementary Education), and 12.5% have a Matric CT (Matriculation Certificate in Teaching) qualification.

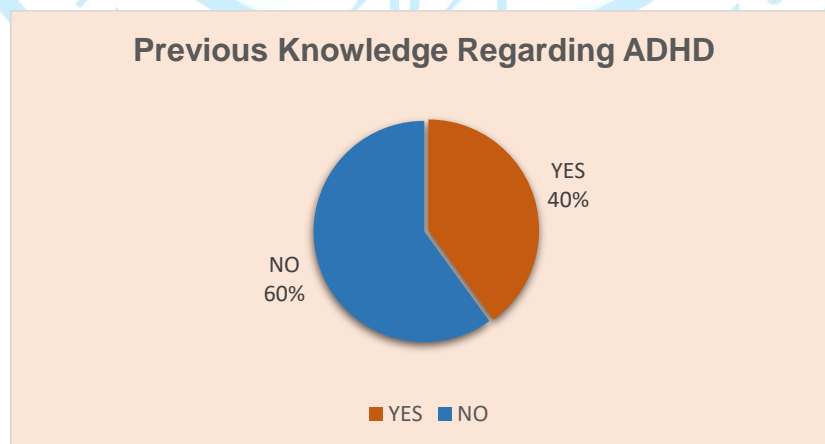


Figure – 3: Percentage Distribution of Samples According to Previous Knowledge Regarding ADHD

The distribution of primary school teachers based on their professional experience reveals an interesting divide in their understanding of ADHD. Specifically, 40% of these teachers possess prior knowledge about ADHD, equipping them with the tools to recognize and support students who may be affected by this condition. In contrast, a significant 60% of the teachers lack any previous knowledge regarding ADHD, which may impact their ability to effectively identify and address the needs of such students in their classrooms.

Table – I Sample Frequency and Percentage by Knowledge Level

(n = 40)

Level Of Knowledge	Pre-Test		Post-Test	
	F	%	F	%
Inadequate Knowledge	8	20.00	0	0.00
Moderate Knowledge	30	75.00	0	0.00
Adequate Knowledge	2	5.00	40	100.00

The data presented in Table I indicates the frequency and percentage of knowledge levels regarding Attention Deficit Hyperactivity Disorder (ADHD) before and after the implementation of a planned teaching program. The pre-test assessment reveals that the majority of participants (75%) possessed a moderate level of knowledge about ADHD, while 20% demonstrated inadequate knowledge, and only 5% exhibited adequate knowledge. Following the administration of the planned teaching program, the post-test assessment demonstrates a significant improvement, with 100% of participants achieving an adequate level of knowledge. Notably, there were no participants who remained with inadequate or moderate knowledge levels concerning ADHD after the intervention.

Table - II: Comparison of ADHD knowledge pre-and post-test scores

(N = 40)

Group	Test	Mean	Sd	Paired 'T' Value
Experimental group	Pre-Test	9.68	3.29	*15.02 DF=39 P=2.023
	Post-Test	18.6	1.37	

*Significant at 0.05 level of significance, df =39 (P=2.023)

The data presented in Table II indicates that the comprehensive post-test mean score of knowledge regarding ADHD (18.6) was noticeably higher than the pre-test mean score (9.68). The standard deviation (SD) for knowledge about ADHD during the post-test was recorded at 1.37, while the pre-test had a standard deviation of 3.29. The calculated 't' value when comparing the pre-test and post-test scores was 15.02. This value, when compared to the table value of 2.023, demonstrated a highly significant difference at the 0.05 level. With a paired 't' test score of 15.02 and degrees of freedom of 39, the results were statistically significant with a 'p' value of less than 0.05. Consequently, we accept the alternative hypothesis and reject the null hypothesis. Since the calculated value of 15.02 exceeded the table value of 2.023 at the 0.05 significance level, we can conclude that there was a significant improvement in knowledge as a result of the planned teaching program.

Table – III: Association Between Pre-Test Scores Of Knowledge Regarding ADHD With Selected Demographic Variables

(n = 40)

Sl.no	Background factor	Inadequate	Moderate	Adequate	Total	Chi-square
Age of the teacher						
a.)	20-29 years	4	10	1	15	4.783 DF=6 P=12.59 NS
b.)	30-39 years	0	10	1	11	
c.)	40-49 years	3	8	0	11	
d.)	50-60years	1	2	0	3	
Total		8	30	2	40	
Marital Status						
a.)	Married	4	20	2	26	1.884 DF=2 P=5.99 NS
b.)	Unmarried	4	10	0	14	
Total		8	30	2	40	
No. Of children						
a.)	1 child	4	2	13	19	12.566 DF=6 P=12.59 NS
b.)	2 children	0	0	8	8	
c.)	More than 2	2	0	0	2	
d.)	None	2	0	9	11	
Total		8	2	30	40	
Educational Qualification						
a.)	TGT Sc/TGT Arts	5	6	2	13	18.846 DF=6 P=12.59 SS
b.)	PGT Sc/PGT Arts	0	4	0	4	
c.)	D.EL.ED	0	18	0	18	

d.)	Matric CT	3	2	0	5	
Total		8	30	2	40	
Monthly Income						
a.)	<15,000	4	6	2	12	9.692 DF=6 P=12.59 NS
b.)	15,000-20,000	2	8	0	10	
c.)	20,000-25,000	0	10	0	10	
d.)	>25,000	2	6	0	8	
Total		8	30	2	40	
Previous knowledge about ADHD						
a.)	Yes	6	10	0	16	5.96 DF=2 P=5.99 NS
b.)	No	2	20	2	24	
Total		8	30	2	40	

SS – Statistically Significant, NS – Not Significant

The data illustrated in Table 3 provides a comprehensive analysis of the relationship between pre-test knowledge and various demographic variables of teachers. Notably, the findings indicate that there is no statistically significant association between pre-test knowledge and several selected baseline factors, including the teacher's age, marital status, number of children, monthly income, and previous knowledge about Attention Deficit Hyperactivity Disorder (ADHD).

In contrast, a significant association was found between pre-test knowledge and the educational qualifications of the teachers. To explore these associations, a Chi-square analysis was conducted on the selected demographic variables. The results are as follows:

For age, the calculated Chi-square value ($\chi^2 = 4.783$) was notably lower than the table value of 12.59.

For marital status, the Chi-square value ($\chi^2 = 1.884$) also fell short of the table value of 5.99.

With respect to the number of children, the calculated Chi-square value ($\chi^2 = 12.566$) was very close to the table value of 12.59, yet did not reach significance.

In terms of educational qualifications, a strikingly high calculated Chi-square value ($\chi^2 = 18.846$) surpassed the table value of 12.59, indicating a significant association.

Regarding prior knowledge about ADHD, the calculated Chi-square value ($\chi^2 = 5.96$) was slightly below the table value of 5.99.

Overall, the analysis reveals that for all the chosen demographic variables, with the exception of educational qualifications, the tabulated Chi-square values at a P-value greater than 0.05 were significantly higher than the corresponding calculated values. This clearly indicates a lack of significant associations between pre-test knowledge regarding ADHD and the selected

demographic factors, highlighting the unique role of educational qualification in influencing knowledge levels.

Discussion

The research investigates the demographics of primary school educators and their understanding of ADHD. Principal discoveries encompass: Age distribution: 37.5% aged 20-29, 27.5% each in 30-39 and 40-49 ranges, and 7.5% over 50. Educational qualifications: 32.5% TGT, 10% PGT, 45% D.El.Ed, and 12.5% Matric CT. ADHD knowledge: 40% had prior knowledge, 60% lacked it. Pre-intervention: 75% moderate, 20% inadequate, and 5% adequate ADHD knowledge. Post-intervention: 100% achieved adequate knowledge. Significant improvement in ADHD knowledge after planned teaching program ($p < 0.05$).

Several studies conducted in the past have supported the findings of the present research. Notably, a study by **Kamble YS, Gole R, Sable A, Jogdand S, Dere R, Jadhav S, and colleagues (2023)** aimed to evaluate the effectiveness of a structured teaching program focused on Attention Deficit Hyperactivity Disorder (ADHD) among primary teachers in selected primary schools in Pune City. The research employed a robust methodological approach to assess the knowledge levels of teachers before and after the intervention. The results revealed a significant improvement in the post-test knowledge scores of the teachers in the experimental group. Specifically, an unpaired t-test was conducted to compare the knowledge scores between the experimental group and a control group. The calculated t-value for the post-test knowledge scores in the experimental group was found to be 7.412, which is significantly higher than the critical table value of 2.262 at a significance level of $p = 0.05$ and 3.250 at $p = 0.01$. This analysis indicates a highly significant difference in the post-test scores, demonstrating that the structured teaching program was effective in enhancing the teachers' understanding and knowledge regarding ADHD. The findings underscore the importance of targeted educational interventions for teachers to improve their ability to support students with ADHD.(14)

In 2022, Venkateswarlu C, Jyothi BN, and Suneetha A conducted a study focused on assessing the impact of a video awareness program concerning attention deficit hyperactivity disorder (ADHD) on primary school teachers and the parents of primary school children in designated schools situated in Mangalagiri, Guntur district, Andhra Pradesh. The results demonstrated that primary school educators displayed a markedly higher mean knowledge score in the post-test (31.5 ± 2.74) concerning ADHD when compared to their pre-test mean knowledge score (16.78 ± 3.78). The calculated 't' value reached 20.84, exceeding the tabulated 't' value of 2.02. The post-test mean knowledge score for ADHD among parents of primary school children exhibited a notable increase, recorded at 28.11 ± 4.35 , compared to the pre-test mean of 15.06 ± 3.91 . The computed 't' value stood at 20.84, surpassing the tabulated 't' value of 2.02. The results substantiate the alternative hypothesis (H_1), revealing a notable disparity in pre-test and post-test knowledge scores concerning ADHD among primary school educators and the parents of primary school children.(15)

Conclusion

A study was done to see how well a teaching tool helped primary school teachers in Tangi, Cuttack understand ADHD (Attention-Deficit/Hyperactivity Disorder). This was done. The teachers had a better understanding of ADHD after the program started, which was shown by the fact that they did better on a test given after the training. Because of this good result, the researcher chose to reject the initial thought that the program would not have any effect and instead accept the idea that it did increase knowledge about ADHD.

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