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A pre-experimental study to assess the effectiveness of informational booklet on knowledge regarding attention deficit hyperactivity disorder (ADHD) among primary school teachers in selected schools of Jammu

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Abstract

Background: ADHD is among the most frequently reported behavioral disorders in children younger than 12 years, with a global prevalence estimated between 3% and 10%. The study aimed to evaluate primary school teachers' baseline knowledge of ADHD, determine the impact of an informational booklet on improving their understanding, and examine whether pre and post-intervention knowledge levels were associated with selected socio-demographic variables. A quantitative approach was adopted, employing a one-group pre-test/post-test pre-experimental design. Using a non-probability convenience sampling method, 80 primary school teachers were recruited. Knowledge levels were measured using a self-developed questionnaire. Results revealed that, prior to the intervention, most participants (63.8%) demonstrated inadequate knowledge of ADHD, while 35% showed moderate knowledge and only 1.3% displayed adequate understanding. Following the intervention, 55% of participants achieved adequate knowledge and 45% demonstrated moderate knowledge, with none remaining in the inadequate category. The mean post-test score (15.78±2.025) was notably higher than the mean pre-test score (9.73±2.714). Overall, the study concluded that primary school teachers initially possessed limited awareness of ADHD, and the informational booklet effectively enhanced their knowledge.

Keywords: Adolescents, effectiveness, informational booklet, attention deficit hyperactivity disorder (ADHD), knowledge, primary school teachers

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is linked to widespread irregularities in brain structure and function, which contribute to difficulties in cognition and daily functioning. Although the exact cause of ADHD is not yet clearly defined, current evidence suggests that both hereditary influences and environmental factors-such as head injuries and exposure to toxins like lead-play significant roles in its development.

The disorder is primarily characterized by three groups of symptoms: hyperactivity, inattention, and impulsive behaviour. While these behaviours can sometimes be seen in many children, in ADHD they become persistent and severe enough to hinder academic performance, interfere with social interactions, disrupt play or school activities, and create challenges in organizing tasks.

In the school setting, children with ADHD often struggle to sustain attention, regulate their behaviour, and may frequently interrupt classroom routines. For this reason, it is essential that parents and teachers are knowledgeable and adequately trained to recognize early signs of ADHD and respond appropriately. Their awareness can greatly benefit children and families, as early identification and timely intervention can significantly improve symptom management. Understanding teachers' level of knowledge about ADHD is therefore an important step toward effective support.

Management of ADHD usually involves a combination of medication, behavioural counselling, and modifications to the child's daily routine. If symptoms continue to interfere with functioning, parent-management training, medication, or psychotherapy-particularly cognitive behavioural therapy (CBT)-may be recommended depending on the child's age. Research also indicates that ADHD tends to run in families, with parents and siblings of affected children showing a higher likelihood of having the condition themselves. Additionally, maternal anxiety during pregnancy has been associated with complications such as preeclampsia, foetal distress, low birth weight, preterm delivery, and an increased possibility of ADHD in the child.

Diagnosis is based on strict clinical criteria. A child must exhibit six or more symptoms of inattention, or six or more symptoms of hyperactivity-impulsivity, and these must persist for at least six months to a degree that impairs functioning.

Additional treatments include social skills training, which is

beneficial for children who face challenges in social settings. Similar to CBT, this approach focuses on developing appropriate behaviours to improve social interactions. Parenting skills training can also support caregivers by offering methods to better understand and manage their child's behaviour.

Practical strategies for supporting children with ADHD include creating structured environments and using reward systems to reinforce positive behaviour. Time-outs may help children calm down when overwhelmed, and regular one-on-one time can strengthen relationships while providing opportunities to praise the child's strengths. Adjusting situations-for example, limiting playdates to one or two friends-can help prevent overstimulation. Stress management techniques such as meditation, relaxation exercises, and physical activity may also be beneficial.

Support groups provide valuable opportunities for individuals and families affected by ADHD to connect with others who share similar challenges. These groups foster a sense of community, offer emotional support, and provide practical advice for coping with the condition. Healthcare professionals can help families locate appropriate support groups in their area.

Objectives
1. To assess the pre-test level of knowledge regarding Attention Deficit Hyperactivity (ADHD) Disorder among primary school teachers.
2. To assess the effectiveness of informational booklet on the level of knowledge regarding Attention Deficit Hyperactivity Disorder (ADHD) among primary school teachers.
3. To find out the association between the pre-test and post-test level of knowledge regarding Attention Deficit Hyperactivity Disorder (ADHD) among primary school teachers with their selected socio-demographic variables.

Methodology
Research methodology refers to the overall framework used to systematically collect dependable and accurate information for a study. In the present investigation, a quantitative research approach was employed, and knowledge related to Attention Deficit Hyperactivity Disorder (ADHD) was measured using a self-structured questionnaire.

Research Design
In this study, a pre-experimental one-group pre-test and post-test design was employed to determine the effectiveness of an informational booklet on enhancing primary school teachers' knowledge about Attention Deficit Hyperactivity Disorder (ADHD) in selected schools of Jammu. A total of 80 primary school teachers were chosen from the accessible population using a non-probability convenience sampling method.

Inclusion criteria: Primary school teachers who were:
Able to read and understand English.
Who were teaching in selected primary schools of Jammu city namely Anuradha Mission School, Anuradha Higher Secondary School, Scientia International School, St. Xavier Convent Senior Secondary School, Coventry Scholars School and R.P High School Jammu.

Exclusion criteria: Primary school teachers who:
Had children diagnosed with ADHD or any other psychiatric condition. Declined to participate in the research.

Development of the Tool
A structured teaching program was developed that included information on the definition, risk factors, clinical features, diagnostic methods, preventive measures, and complications of Attention Deficit Hyperactivity Disorder (ADHD). Following content validation and necessary revisions, a self-designed knowledge questionnaire was prepared to evaluate the impact of the informational booklet on teachers' understanding of ADHD. The reliability of the tool was assessed using Karl Pearson's correlation coefficient, yielding a value of $r = 0.92$, indicating high reliability. The final questionnaire consisted of 20 multiple-choice items.

Results
The results of the study indicated that most participants (33.8%) were between 26 and 35 years of age. A large proportion of the sample (85%) consisted of female teachers. With regard to religion, the majority (95%) identified as Hindu. Most participants (40%) had more than 11 years of teaching experience. In terms of marital status, 77.5% were married. Concerning educational background, 40% held B.Ed. or M.Ed. degrees. All participants (100%) were employed in private schools. Based on the Kuppuswamy socioeconomic scale, over half of the participants (55%) reported a monthly income below ₹6,174. A majority (56.3%) lived in joint families, and 76.3% resided in urban areas.

In the pre-test, 63.8% of teachers demonstrated inadequate knowledge about Attention Deficit Hyperactivity Disorder (ADHD), 35% had a moderate level of knowledge, and only 1.3% showed adequate understanding. Following the intervention, 55% displayed adequate knowledge and 45% moderate knowledge, with none remaining in the inadequate category. The mean post-test score (15.78 ± 2.025) was significantly higher than the mean pre-test score (9.73 ± 2.714), indicating a statistically meaningful improvement at the 0.05 significance level.

Regarding the association between knowledge levels and demographic characteristics, the study found a significant relationship between pre-test knowledge and the variables of age, gender, religion, years of experience, and marital status. However, no significant association was identified between pre-test knowledge and educational qualification, type of family, or place of residence at the 0.05 level of significance.

Discussion
In the current study, the pre-test results showed that most primary school teachers (63.8%) had inadequate knowledge about Attention Deficit Hyperactivity Disorder (ADHD), while 35% demonstrated a moderate level of understanding and only 1.3% possessed adequate knowledge. These findings align with the results reported by Lata Bhattarai and Mamata Sharma (2019), who conducted research

among 124 primary school teachers in 19 government schools in Lalitpur Metropolitan City. Their study similarly revealed that 94 teachers (75.8%) had poor knowledge of ADHD. In the present study, pre-test outcomes indicated limited knowledge among teachers, whereas post-test results showed a marked improvement. After the intervention, 55% of participants achieved adequate knowledge, 45% demonstrated moderate knowledge, and none remained in the inadequate category. Pre-test and post-test knowledge percentages were 48.63% and 78.88%, respectively, reflecting an improvement of 30.25%. These findings are consistent with the study by Jayesh Patidar (2016), which reported that in the pre-test, 68% of participants had average scores (7-13) and only 12% had good knowledge; post-test results showed that 64% attained good scores (14-20), and just 2% scored poorly. The mean knowledge score increased from 10.84 in the pre-test to 16.24 in the post-test.

The present study also found no statistically significant association between teachers' pre-test or post-test knowledge levels and demographic factors such as age, gender, religion, years of experience, marital status, educational qualifications, monthly income, family type, or place of residence. These results correspond with the study conducted by Sangeeta M. Satwekar and Afreen A. Mangalware (2022), where the mean post-test score was substantially higher than the pre-test mean. The observed mean difference was 14.53, with standard deviations of 2.731 for the pre-test and 2.389 for the post-test. The calculated t-value of 32.992 was highly significant at $p < 0.0001$, and no significant association was found between knowledge scores and selected socio-demographic variables.

Frequency and distribution of study subjects

Table 1: Demographic profile of the subjects, N = 80

Socio-Demographic Variables	N (Frequency)	% (Percentage)
Age (years)		
18–25	11	13.8%
26–35	27	33.8%
36–50	21	26.3%
>51	21	26.3%
Gender		
Male	12	15%
Female	68	85%
Other	0	0%
Religion		
Hindu	76	95%
Muslim	3	3.8%
Sikh	1	1.3%
Christian	0	0%
Years of Experience		
<3 years	21	26.3%
4–6 years	12	15%
7–10 years	15	18.8%
>11 years	32	40%
Marital Status		
Married	62	77.5%
Unmarried	18	22.5%
Divorced	0	0%
Widow	0	0%
Educational Qualification		
Diploma / Certificate	2	2.5%
Graduation	20	25%
Post-Graduation	26	32.5%
B.Ed. / M.Ed.	32	40%
Type of School		
Private	80	100%
Government	0	0%
Monthly Income (INR) (Kuppuswamy Scale)		
<6,174	44	55%
6,175–18,496	36	45%
18,497–30,830	0	0%
30,831–46,128	0	0%
46,129–61,662	0	0%
61,663–123,321	0	0%
>123,322	0	0%
Type of Family		
Joint Family	45	56.3%
Nuclear Family	35	43.8%
Place of Living		
Rural	19	23.8%
Urban	61	76.3%

The tabulated data presented in Table 1 Majority of study subjects (33.8%) belonged to the age group 26-35 years, (26.3%) of the study subjects belonged to the age group 36-50 years as well as in >51 years and (13.8%) of the study subjects belonged to the age group 18-25 years. As per the gender, majority (85%) of the study subjects were female, (15%) of the study subjects were male and (0%) of the study subjects were other. As per religion of subjects, majority (95%) of the study subjects were Hindu, (3.8%) of the study subjects were Muslims, (1.3%) of the study subjects were Sikh and none of the study subjects were Christian. As per years of experience, majority (40%) of the study subjects were having >11 years of experience, (26.3%) of the study subjects were having <3 years of experience, (18.8%) of the study subjects were having 7-10 years of experience and (15%) of the study subjects were having 4-6 years of experience. As per marital status, majority (77.5%) of the study subjects were married, (22.5%) of the study subjects were unmarried and none of the study subjects were divorced and widow. As per educational qualification, majority (40%) of the study subjects were B.Ed./M.Ed., (32.5%) of the study subjects were post-graduate, (25%) of the study subjects were graduate and (2.5%) of the study subjects were having diploma/certificate. As per type of school, all of the study subjects were in private school and none of the study subjects were in government school. As per monthly income in rupees (Acc. To Kuppuswamy scale), majority (55%) of the study subjects were having <6,174 income, (45%) of the study subjects were having 6,175-18,496 income and none of the study subjects were having 18,497-30,830 income, 30,831-46,128 income, 46,129-61,662 income, 61,663-123,321 income and >123,322 income. As per type of family, majority (56.3%) of the study subjects were living in joint family and (43.8%)

of the study subjects were living in nuclear family. As per place for living, majority (76.3%) of the study subjects were living in urban area and (23.8%) of the study subjects were living in rural area.

Table 2: Frequency and percentage distribution of study subjects according to their pre-test knowledge score regarding prevention of urinary tract infection. N= 80

Criterian for measurement	Frequency	Percentage%
Inadequate knowledge (<10)	51	63.8%
Moderate knowledge (11-15)	28	35%
Adequate knowledge (16-20)	1	1.3%

Maximum score: 20
Minimum score: 0

TABLE 2 depicts that on pre-test majority of the study subjects (63.8%) had inadequate knowledge, (35%) of the study subjects had moderate knowledge and (1.3%) of the study subjects had adequate knowledge.

Table 3: Frequency & percentage distribution of post-test level of knowledge, N= 80

Criterian for measurement	Frequency	Percentage%
Inadequate knowledge (<10)	00	00%
Moderate knowledge (11-15)	36	45%
Adequate knowledge (16-20)	44	55%

Maximum score: 20
Minimum score: 0

Table 3 depicts that on post-test majority of the study subjects (55%) had adequate knowledge, (45%) of the study subjects had moderate knowledge and none of the study subjects had inadequate knowledge.

Table 4: Comparison of frequency & percentage distribution of pre-test and post-test level of knowledge, N= 80

Criterion of measurement	Pre-test Frequency	Pre-test percentage	Post-test frequency	Post-test percentage
Inadequate knowledge (<10)	51	63.8%	00	0%
Moderate knowledge (11-15)	28	35%	36	45%
Adequate knowledge (16-20)	1	1.3%	44	55%

Maximum score= 20
Minimum score= 0

Table 4 depicts that on mean pre-test, majority of the study subjects (63.8%) had inadequate knowledge, (35%) of the study subjects had moderate knowledge and (1.3%) of the study subjects had adequate knowledge whereas on mean post-test, majority of the study subjects (55%) had adequate knowledge, (45%) of the study subjects had moderate knowledge and none od the study subjects had inadequate knowledge regarding the effectiveness of informational booklet on knowledge regarding Attention Deficit Hyperactivity Disorder among primary school teachers. This indicates that the majority of the subjects gained adequate knowledge after the administration of informational booklet.

Table 5: Showing association of pre - test knowledge score of primary school teachers with their selected socio-demographic variables

Association of pre-test knowledge scores with selected socio-demographic variables									
Variables	Opts	Adequate knowledge	Moderate knowledge	Inadequate knowledge	Chi Test	P Value	df	Table Value	Result
Age	18-25	0	0	11	10.740	0.097	6	12.592	Not Significant
	26-35	0	12	15					
	36-50	1	9	11					
	>51	0	7	14					
Gender	Male	0	4	8	0.207	0.902	2	5.991	Not Significant
	Male	1	24	43					
	Other	0	0	0					
Religion	Hindu	1	28	47	2.394	0.664	4	9.488	Not

Variables	Opts				Chi Test	P Value	df	Table Value	Result
	Muslim	0	0	3					Significant
	Sikh	0	0	1					
	Christian	0	0	0					
Years of Experience	<3 years	0	4	17	5.979	0.426	6	12.592	Not Significant
	4-6 years	0	6	6					
	7-10 years	0	7	8					
	>11 years	1	11	20					
Marital Status	Married	1	24	37	2.091	0.352	2	5.991	Not Significant
	Unmarried	0	4	14					
	Divorced	0	0	0					
	Widow	0	0	0					
Educational Qualification	Diploma/ certificate	0	0	2	7.369	0.288	6	12.592	Not Significant
	Graduation	1	8	11					
	Post-graduation	0	12	14					
	B Ed/M Ed	0	8	24					
Type of School	Private	1	28	51		N.A		N.A	
	Government	0	0	0					
Monthly Income	< Rs 6,174	0	8	36	14.131	0.001	2	5.991	Significant
	Rs 6,175-18,496	1	20	15					
	Rs 18,497-30,830	0	0	0					
	Rs 30,831-46,128	0	0	0					
	Rs 46,129-61,662	0	0	0					
	Rs 66,663-123,321	0	0	0					
	> Rs123,332	0	0	0					
Type of Family	Joint family	0	16	29	1.303	0.521	2	5.991	Not Significant
	Nuclear family	1	12	22					
Place of Living	Rural	0	4	15	2.599	0.273	2	5.991	Not Significant
	Urban	1	24	36					

Table 6: Showing association of post - test knowledge score of primary school teachers with their selected socio-demographic variables

Association of post-test knowledge scores with selected socio-demographic variables									
Variables	Opts	Adequate knowledge	Moderate knowledge	Inadequate knowledge	Chi Test	P Value	df	Table Value	Result
Age	18-25	7	4	0	3.487	0.322	3	7.815	Not Significant
	26-35	17	10	0					
	36-50	12	9	0					
	>51	8	13	0					
Gender	Male	4	8	0	2.678	0.102	1	3.841	Not Significant
	Male	40	28	0					
	Other	0	0	0					
Religion	Hindu	41	35	0	1.017	0.601	2	5.991	Not Significant
	Muslim	2	1	0					
	Sikh	1	0	0					
	Christian	0	0	0					
Years of Experience	<3 years	11	10	0	1.050	0.789	3	7.815	Not Significant
	4-6 years	6	6	0					
	7-10 years	10	5	0					
	>11 years	17	15	0					
Marital Status	Married	32	30	0	1.277	0.258	1	3.841	Not Significant
	Unmarried	12	6	0					
	Divorced	0	0	0					
	Widow	0	0	0					
Educational Qualification	Diploma/ certificate	0	2	0	4.555	0.207	3	7.815	Not Significant
	Graduation	13	7	0					
	Post-graduation	16	10	0					
	B Ed/M Ed	15	17	0					
Type of School	Private	44	36	0		N.A		N.A	
	Government	0	0	0					
Monthly Income	< Rs 6,174	24	20	0	0.008	0.928	1	3.841	Not Significant
	Rs 6,175-18,496	20	16	0					
	Rs 18,497-30,830	0	0	0					
	Rs 30,831-46,128	0	0	0					
	Rs 46,129-61,662	0	0	0					
	Rs 66,663-123,321	0	0	0					
	> Rs123,332	0	0	0					
Type of Family	Joint family	26	19	0	0.321	0.571	1	3.841	Not Significant
	Nuclear family	18	17	0					
Place of Living	Rural	10	9	0	0.056	0.812	1	3.841	Not Significant
	Urban	34	27	0					

Conclusion

The results revealed that, in the pre-test, 63.8% of teachers had inadequate knowledge, 35% had a moderate level of knowledge, and only 1.3% demonstrated adequate understanding. After receiving the informational booklet on Attention Deficit Hyperactivity Disorder (ADHD), the post-test findings showed a clear improvement: none of the teachers fell into the inadequate category, 45% had moderate knowledge, and 55% achieved adequate knowledge. The mean pre-test score was 9.73 ± 2.714, whereas the mean post-test score increased to 15.78 ± 2.025, indicating a substantial enhancement in knowledge following the intervention.

With respect to the association between pre-test knowledge scores and selected socio-demographic variables, the Chi-square analysis indicated a significant relationship only with monthly income. No significant association was identified for other variables, including age, gender, religion, years of experience, marital status, educational qualification, type of family, or place of residence, as the calculated Chi-square values were below the critical value at the 0.05 level of significance.

Similarly, the analysis of post-test knowledge scores showed no significant association with any of the socio-demographic variables assessed (age, gender, religion, years of experience, marital status, educational qualification, monthly income, family type, or place of residence). All calculated Chi-square values remained lower than the table value at the 0.05 significance level.

Conflict of Interest

Not available.

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Not available.

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