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Efficacy of Video-Assisted Teaching on Learning Needs of Children And Literacy of Attention Deficit Hyperactivity Disorder Among Teacher Trainees in South India

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ABSTRACT

Context: Traditional teaching approaches prove to be a viable alternative to video-assisted learning. Teachers are under-informed about the illness and learning needs of children with mental disorders, notably attention deficit hyperactivity disorder.

Aim: This study aimed to examine how effectively video-assisted teaching meets the learning needs and literacy of attention deficit hyperactivity disorder among teacher trainees in South India.

Settings and Design: Institution-based longitudinal study.

Material and Methods: Before and one week after video-assisted teaching about ADHD, 30 randomly selected trainee teachers were examined using questionnaires on ADHD literacy and learning need.

Statistical Analysis Used: descriptive statistics, ANOVA, and paired-samples t-test.

Results: On paired-samples t-test, there was a statistically significant difference in the score of ADHD literacy [t (29) = -18.46, p =.001] and learning needs [t (29) = -32.66, p =.001] pre and post scores.

Conclusions: Using video-assisted teaching improves ADHD literacy and the learning needs of children.

Keywords: Attention deficit hyperactivity disorder, video-assisted teaching, learning needs, literacy.

INTRODUCTION

Though video-assisted teaching has been around for a long time, it has recently become popular in India in the mental health field [1]. It has been utilized for mental disorders in general [3,4]. Few reports use this instrument when it comes to childhood mental illnesses. In India, almost 9.5 percent of the child and adolescent population has attention deficit hyperactivity disorder (ADHD) [5]. Teachers have the greatest chance of noticing odd behavior in students and identifying children with ADHD [6,7]. However, the literature suggests that Indian teachers have low ADHD literacy, making it difficult to accurately diagnose it as a specific diagnosis [7,8,9,10,11-], though they frequently refer to mental health professionals as abnormal behavior and due to academic difficulty [7-12,14]. Improving ADHD literacy among potential teachers is particularly important since there are school-

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based interventions that may be used to help students with the disorder achieve academic parity with their peers [13].

ADHD literacy refers to the knowledge and beliefs regarding ADHD that can help with diagnosis, management, and prevention. It includes the ability to diagnose illnesses so that help may be sought; knowledge of professional services and therapies; knowledge of effective self-help tactics; knowledge and abilities to provide first aid and support; and information on ways to prevent ADHD [14]. As seen by the 84 percent treatment gap for mental diseases [15], there appears to be a lack of mental health literacy, notably among teachers who failed to recognize and refer in India [16]. The report reveals that teachers have a poor understanding of ADHD [17]. In India, more than half of teachers are likely unaware of ADHD [9]. Thus, there is a need to establish cost-effective educational approaches to promote literacy among them.

The gap between a learner's current level of knowledge and skills and the amount of knowledge and skills required to complete a task or a set of activities is referred to as learning needs. The actual requirements vary, as do the methods used to meet them. Children with ADHD have a variety of characteristics that make it difficult for them to learn and complete tasks [18,19]. Most children with attention deficit hyperactivity disorder (ADHD) are educated in general education classes [19,20]. Unfortunately, general educators may not be equipped to assist children with ADHD [20,21]. Educational intervention, classroom management tactics, behavior modification strategies, organizational strategies, and other strategies are among the learning needs of children with attention deficit hyperactivity disorder. Traditional didactic lectures about ADHD have been tried, effectively boosting knowledge and the ability to recognize ADHD. However, due to a scarcity of mental health specialists in India, an alternative teaching strategy must be devised to enable them to understand ADHD literacy better.

Based on the preceding, the purpose of this study was to see how effective video-assisted teaching is at improving ADHD literacy and learning needs. We expected that video-assisted teaching would improve ADHD literacy and learning needs.

MATERIAL AND METHODS

Thirty students from St. Alphonse College of Education in Hyderabad, India, participated in this study. Subjects were recruited using simple random selection after informed consent was obtained. Students enrolled in a B Ed course for at least six months met the inclusion criteria, but those with a psychology background did not. All participants were first assessed using demographic and academic proforma, an ADHD literacy questionnaire, and an ADHD learning needs questionnaire, followed by video-assisted instruction. An ADHD literacy assessment and an ADHD learning needs questionnaire were administered one week after the video-assisted instruction. The assessment tool consisted of

1. Demographic and academic characteristics: Age, education, Source of information about ADHD, educational background.
2. ADHD literacy questionnaire: There were ten questions in this questionnaire. The concept, demographic factors, clinical symptoms, causation, and treatment of ADHD were all addressed in the items. There was just one correct response. The lowest possible score was 0, and the highest possible score was 10. More points imply a higher level of literacy.
3. ADHD learning need questionnaire: The questionnaire included 20 questions about educational intervention, teaching methods, instructional practices, time management, skill development, strategies to reduce inattention, hyperactivity, and impulsivity, language and reading comprehension, dealing with the lesson, taking care of individual subjects, organizational skills, and behavioral

techniques. There was just one correct response. The lowest possible score was 0, and the highest possible score was 20. A higher score suggests better learning needs awareness.

Development of tools

Based on the relevant literature, a ten-item ADHD literacy survey was designed [22,23,24]. Each item would focus on a different component of ADHD, such as the concept, epidemiology, clinical features, treatment, and the role of the teacher.

After consulting a psychiatry textbook and pertinent published research, a 20-item learning needs survey was designed [25,26,27,28]. It featured teaching methods and skill development, measures for dealing with inattention and hyperactivity, lessons, homework and daily assignment planning, time management, and effective behavioral interventions.

- **Teaching Video:** After consulting a psychiatry textbook and journal papers, a 40-minute teaching video was created in English that included ideas, epidemiology, etiology, clinical features, management, comorbidities, teachers' roles, and learning demands of children with ADHD.

Thirteen specialists in the field of psychiatry, including psychiatric nurses, psychiatrists, and clinical psychologists, assessed the tool to determine its content validity. Their important recommendations were implemented after they were obtained, and as a result, appropriate improvements were made. A pilot study in a sample of 10 subjects was administered with these tools among randomly selected students pre- and post-training with teaching video in the interval of one week. The spearman-Brown formula is used to assess the tool's reliability, accuracy, and feasibility. The ADHD literacy questionnaire had reliability of r=.94, whereas the learning requirement was r=.92. A structured questionnaire is feasible and comprehensive for data collection, according to the pilot study.

Statistical analysis

Demographic and academic variables were analyzed using descriptive statistics. The ANOVA test was used to examine demographic variables' pre-and-post scores on literacy and learning needs. To compare the score of ADHD literacy and learning need before and after video-assisted teaching, a paired-samples t-test was used. The significance level was kept at.05.

RESULTS

The sample's demographic and academic characteristics were the majority aged 20-25 years, Undergraduate, unheard-of ADHD, and belonging to the mathematics subject.

On the ANOVA test, there were no statistically significant group differences on the score of the demographic variable on literacy and learning need except score of literacy by education (F=6.388; df=1; p=.017) and subject background (F= 3.295; df=3; p=.036) (Table 1).On the ANOVA test, there were no group differences in learning needs and literacy scores by any demographic and academic variables (Table 2).

A paired-samples t-test was conducted to compare the score of literacy before and after video-assisted teaching. There was a significant (not a significant) difference in the pretest scores for literacy (M=4.60, SD= 1.47) and posttest scores for literacy (M=9.40, SD=.62) conditions; t (29) = -18.46, p = .001 (Table 3).

Similarly, the paired-samples t-test of comparison on the score of learning needs before and after video-assisted teaching. There was a significant (not a significant) difference in the pretest scores for literacy (M=6.56, SD= 1.85) and posttest scores for literacy (M=16.8, SD=1.15) conditions; t (29) = -32.66, p = .001 (Table 3).

Table 1: Pretest score of the demographic variable on needs and literacy					
	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Pretest literacy score * Age	2.798	2	1.399	.625	.543
Pretest learning need score * Age	4.961	2	2.480	.709	.501
Pretest literacy score * Education	11.740	1	11.740	6.388	.017
Pretest learning need score * Education	.129	1	.129	.036	.850
Pretest literacy score * Information source	4.756	2	2.378	1.098	.348
Pretest learning need score * Information source	5.978	2	2.989	.864	.433
Pretest literacy score * Subject background	17.408	3	5.803	3.295	.036
Pretest learning need score * Subject background	14.467	3	4.822	1.477	.244

Table 2: Posttest score of the demographic variable on needs and literacy					
	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Posttest literacy score * Age	.316	2	.158	.392	.680
Posttest learning needs score * Age	.137	2	.068	.048	.953
Posttest literacy score * Education	.311	1	.311	.800	.379
Posttest learning need score * Education	2.292	1	2.292	1.758	.196
Posttest literacy score * Information source	1.367	2	.683	1.876	.173
Posttest learning needs score * Information source	6.744	2	3.372	2.840	.076
Posttest literacy score * Subject background	1.323	3	.441	1.161	.344
Posttest learning needs score * Subject background	4.708	3	1.569	1.197	.330

Table 3: Efficacy of video-assisted training

	Paired Differences							
				95% Confidence Interval of the Difference				
Variables	*Mean*	*Std. Deviation*	*Std. Error Mean*	*Lower*	*Upper*	*t*	*df*	*Sig. (2-tailed)*
Pretest – posttest literacy score	-4.80000	1.42393	.25997	-5.33171	-4.26829	-18.463	29	.001
Pretest– posttest learning needs score	-10.23333	1.71572	.31325	-10.87399	-9.59267	-32.669	29	.001

Pretest literacy score: Mean = 4.60, SD = 1.47; Posttest literacy score: Mean = M = 9.40, SD = .62. Pretest learning need score: Mean = 6.56, SD = 1.85; Posttest learning need score: Mean = 16.8, SD = 1.15

DISCUSSIONS

The B Ed course participants were chosen because they were potential teachers who would be able to detect and comprehend the needs of students with ADHD. Most students were between the ages of 20 and 25, had a bachelor's degree, had never heard of ADHD, and were studying mathematics.

The demographic and academic characteristics are comparable to those found in another study in south India using a similar methodology for other illnesses [29]. The results show that trainees with a PG and a science background score are statistically considerably higher. This could be because there are more opportunities to obtain knowledge from various sources.

This could be because most of the higher-scoring trainees had a science background and thus had more opportunities to learn about medical or illness-related knowledge. It's possible that there's no difference in post-test scores for demographic and academic characteristics on literacy and learning needs since video-assisted teaching has an equivalent impact on learning.

The study's main finding was a substantial difference in pre-post literacy and learning needs scores. Surprisingly, the mean value increased twofold after video-assisted instruction. This form of teaching has gained popularity in India over the years and has been utilized by teachers, carers, and nursing professionals. It appears beneficial in teaching and learning other topics [5,6,29,30-,]. We couldn't find any research on video-assisted teaching for ADHD thus far.

Teachers' ADHD literacy appears to be low in India [9,10,11,12], and they may have a negative attitude toward ADHD students [9,10,11,12]. They may be unable to recognize the condition [13]. As a result, there is a need to educate prospective teachers about such illnesses, as they can play an important role in the academic development of students with ADHD using various strategies in the Indian context [15] and are the primary source of referral to appropriate care [14].

There has been no research into the learning needs of children with ADHD in India so far. This is especially important because teachers can help students with ADHD in the classroom using various empirical evidence-based strategies such as (a) technical-support mediated strategies; (b) classroom strategies; (c) activity-based strategies; (d) peer tutoring strategies; and (e) homework strategies [15,]. This is significant given that the prevalence of ADHD in school-aged children ranges from 30% to 28.9% [7].

Based on the findings, it can be stated that video-assisted teaching helps improve literacy and meet the learning needs of ADHD students. However, because the sample size was small and the study was a cross-sectional and single center, the results should be considered cautiously. To corroborate the findings, more research is required.

Conflict of Interest: None.

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Ethical clearance: Taken from the institutional ethics committee, JMJ College of Nursing, Hyderabad.

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