

# Assessment of Knowledge Regarding Attention Deficit Hyperactivity Disorder among Teachers in Selected Government Schools: A Cross-sectional Study

Lata Kusum Shah<sup>1\*</sup> | Arpana Kamati<sup>1</sup><sup>1</sup>National Human Resource Development Academy Pvt. Ltd, Janakpur, Nepal

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## \*Correspondence:

Mrs. Lata Kusum Shah

Principal

National Human Resource

Development Academy Pvt. Ltd,

Janakpur, Nepal

## E-mail:

latakusumshah@gmail.com

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## ABSTRACT

**INTRODUCTION:** Attention deficit hyperactivity disorder (ADHD) is a neuro-developmental disorder that typically first manifest early in childhood and often persist into adulthood which can affect the academic achievement, well-being and social interactions of children. The objective of this study was to assess knowledge about ADHD among the government school teacher and to find the association between ADHD knowledge with their demographic variables. **MATERIALS AND METHODS:** A cross section descriptive research design was adopted. A total of 112 numbers of samples were selected from government schools of Janakpurdham, Nepal by use of purposive sampling. The information was collected through the use of the Knowledge Attention Deficit Disorder Scale (KADDS) tool, and subsequently, data were analyzed using Statistical Package for Social Sciences (SPSS). **RESULTS:** The result revealed that 43.8% demonstrated insufficient knowledge, while only 56.2% possessed adequate knowledge. There was significant association of gender and the ADHD knowledge among the government school teachers ( $p = 0.016$ ). **CONCLUSIONS:** Insufficient knowledge about ADHD was noted among school teachers, indicating a need for the government to provide targeted training and in-service education in this field.

**Keywords:** ADHD, Government Schools, Knowledge, Teacher



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## INTRODUCTION

Attention deficit disorder is a neuro-developmental disorder that typically first manifest early in childhood and often persist into adulthood [1]. This condition is directly associated with one of the strongest predictors of adult life outcomes and life satisfaction [2]. Attention deficit hyperactivity disorder is one of the greatest common neurobehavioral disorders of childhood and can affect the academic achievement, well-being and social interactions of children [3]. The Diagnostic and Statistical Manual of Mental Disorders – 5th edition (DSM-5) defines ADHD as a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development as characterized by six or more symptoms from either or both the inattention group of criteria and the hyperactivity and impulsivity criteria [4]. Children spend the greatest amount of their time in classrooms, they are likely to follow guidelines, behave in socially

proper ways, participate in educational activities and withdraw from disturbing the learning development or activities of others [5]. The ADHD symptoms are usually evident in the classroom, placing teachers in a unique position to identify and refer such students for further assessment [6]. The psychologist or medical practitioner needs thorough information from the teachers to assist in making a diagnosis [7]. Different studies found that teachers have limited and inaccurate knowledge and often provide inappropriate information about the condition to parents [8]. One of the developing nations is Nepal, where teachers have very little access to ADHD knowledge. In addition, there aren't many scientific literatures available to support the teachers. Moreover, there is scanty information of ADHD and no such type of studies had been conducted before among teachers at Madhesh Province in Nepal. Since today's children are

tomorrow's decision-makers, it is critical to assess teachers' awareness of ADHD in order to better assist and support the students who identify as having the ADHD. Therefore, the objective of the study was designed to assess the knowledge regarding ADHD among the teachers and the association between ADHD knowledge with their demographic variables of selected government school, Janakpurdham, Madhesh Province, Nepal.

## MATERIALS AND METHODS

### Study design and setting

A descriptive cross sectional research design was adopted to conduct this study. The study was conducted in government schools of Janakpurdham of Dhanusha district, Madhesh Province, Nepal. The government schools selected for study were Janaki Madhyamik Vidyalaya, Saraswati Madhyamik Vidyalaya, Sakal Bhawan Kanya Madhyamik Vidyalaya, Shree Tribhuwan Aadarsha Madhyamik Vidyalaya, Bindhi, Shree Sankat Mochan DevSaran Ramrati Madhyamik Vidyalaya, Shree Janak Rastriya Prathamik Vidhyala, Shree Yagyavalkya Sanskrit Madhyamik Vidhyala, and Shree Rastriya Prathamik Vidhyala.

### Participants, sample size and sampling technique

The participants in this study were government school teachers. The sample size was 112 teachers, who were selected using a purposive sampling technique. The sample size of 112 was determined by the researchers based on various considerations, including participant availability and the feasibility of conducting the study. The participants included in this study were current government school teachers and willing to participate in the study.

**Data collection procedure and study variables** The KADDS tool was used to collect the data [9]. The questionnaire was self administered. Data was collected from 22nd July 2022 to 20th August 2022. This self administration method was selected as this is one of the best available methods to achieve the aim of this study. The Attention Deficit Disorders Scale (KADDS) tool was developed by Mark Scitutto and his colleagues. It is a 36 items rating scale to measure knowledge and misperception of Attention Deficit /Hyperactivity Disorder (Supplementary Materials-1). These items are categorized into 3 categories; Cat-I which contain 15 items related to symptoms/ diagnosis of ADHD, Cat-II which contain 9 items related to the treatment of ADHD and Cat-III which contain 12 items

about the nature, causes and outcome of ADHD. The items of KADDS questionnaire phrased as statements about ADHD with three option responses that are true, false and don't know. Out of total 36 questions asked, one mark was given for correct answer and zero mark for wrong answer and not marked for don't know responses. So, the maximum possible score was 36, and the minimum was zero. Firstly mean was calculated and then it was differentiated. Below mean inadequate knowledge and above and equal mean adequate knowledge. Mean Score was 14.64.

### Statistical analysis and data management

The data were analyzed by Statistical Package for Social Sciences (SPSS). The qualitative data were expressed as frequency and percentage. Chi square test was computed to investigate the relationship between teacher's levels of knowledge about ADHD with their demographic variables. A p-value of < 0.05 was considered statistically significant.

**Ethical considerations** Ethical approval was taken from Institutional Review Committee (IRC), of Janaki Medical College (Ref. IRC/13/2079-080). The purpose of the study was well explained and confidentiality was maintained. Verbal as well as written consent was taken from all the participants.

## RESULTS

Table 1 represent that majority of participants were from the age group of 35-44 (43.75%), other were 25-34 years 16 (14%), 45-54 years 38 (38%), 55-64 years 9 (8.03%). Among the participants majority were female 61 (54.4%) and male were 51 (45.5%). 110 (98.2%) participants were belongs to the Hindu religion where as only 2 (1.8%) were Buddhist. Regarding educational qualification, 51 (45.5%) were master degree holders, 34 (30.4%) were bachelor degree holder and only 27 (24.1%) were intermediate. Among the participants 108

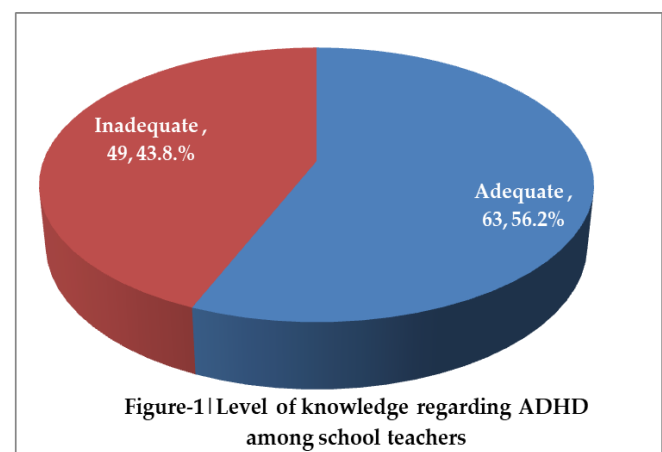


Figure-1| Level of knowledge regarding ADHD among school teachers

(96.4%) were married, 02 (1.8%) were unmarried, 01 (0.9%) was divorced and 01 (0.9%) was widow.

Among the participants, more than half (57.1%) participants having two children while few (9.8%) were having no child and 22.4% participants had more than two children. The participants of 94 (84.8%) were used to spend 4 hour per day in the class and other 1 hour 2 hour and 3 hours were spend by 3 (2.7%), 6 (5.4%) and 8 (7.1%) respectively. Only 8 (7.1%) well having satisfactory salary but other 104 (92.85%) were having very manageable salary. These participants have attained training but these are not specific to ADHD. Among them 46 (41.1%) have had attained pre-service teachers' training and 12 (10.7%) have not attained any training. approximately 90% of the participants (100 individuals) had more than 6 years of experience in the teaching field. Additionally, 9

participants (8%) had 2-4 years of experience, and 3 participants (2.7%) had 4-6 years of experience.

Figure 1 shows that, whereas 63 participants (56.3%) had adequate knowledge of attention deficit hyperactivity disorder, nearly half of the participants, 49 individuals (43.8%), had adequate knowledge. The mean score was 14.64 for assessment of level of knowledge on ADHD.

The study demonstrates that, only gender is significantly associated with knowledge about ADHD ( $p=0.016$ ). Other factors, such as age, educational status, number of hour worked or year of experience, have no significance on knowledge about ADHD ( $p>0.05$ )(Table-2).

**Table 1|**Demographic characteristics of the participants (n=112)

Characteristics	Frequency	Percentage
<b>Age</b>		
25-34	16	14
35-44	49	43.75
45-54	38	33.92
55-64	9	8.03
<b>Gender</b>		
Male	51	45.5
Female	61	54.5
<b>Religious</b>		
Hindu	110	98.2
Buddhist	2	1.8
<b>Educational Status</b>		
Intermediate	27	24.1
Bachelor Degree	34	30.4
Master Degree	51	45.5
<b>Marital Status</b>		
Married	108	96.4
Divorced \ Widow	02	1.8
Unmarried	02	1.8
<b>No. of Child</b>		
0	11	9.8
1	12	10.7
2	64	57.1
3	20	17.9
4	5	4.5

**Table 1|**Continued.....

No. of hour spend		
1	3	2.7
2	6	5.4
3	8	7.1
4	95	84.8
Income per month		
35000-40000	87	77.7
40000-45000	10	8.9
45000-50000	7	6.3
50000 & above	8	7.1
Training they have attained		
Pre-service teacher's training	46	41.1
Professional development in-service	43	38.4
Refreshment training	6	3.6
New policy & curriculum orientation	7	6.3
None	12	10.7
Year of experience (Years)		
2-4 year	9	8
4-6 year	3	2.7
6 year & Above	100	89.3

**Table 2** Association between level of knowledge and demographic variables

Characteristics	Knowledge on ADHD		P- value
	Inadequate	Adequate	
<b>Educational Status</b>			
Intermediate	10(37.0%)	17 (63.0%)	0.697
Bachelor	15 (44.1%)	19 (55.9%)	
Master	24 (47.1%)	27 (52.9%)	
<b>Gender</b>			
Female	33 (54.1%)	28 (45.9%)	0.016*
Male	16 (31.4%)	35 (68.6%)	
<b>Marital Status</b>			
Married	48 (44.4%)	60 (55.6%)	
Single#	1 (25.0%)	3 (75.0%)	0.797**
<b>No. of hour worked</b>			
<2 hour	4 (44.4%)	5 (55.6%)	0.535**
3 hour	5 (62.5%)	3 (37.5%)	
4 hour	40 (42.1%)	55 (57.9%)	
<b>Year of experience</b>			
2-4	3(33.3%)	6 (66.7%)	0.595
4-6	2 (66.7%)	1 (33.3%)	
6 and above	44 (44%)	56 (56%)	
#include Unmarried/Divorced/ Widow	*Significant	**Likelihood Ratio	

## DISCUSSION

Majority of participants were from the age group of 35-44. Among the participants majority were female belongs to the Hindu religion. If we look into educational data, less than half were master degree holders, and bachelor degree holder and only (24.1%) were intermediate. Among the participants 108 (96.4%) were married, 64 (57.1%) were having two number of children. But only 8 (7.1%) well having satisfactory salary where as other 104 (92.85%) participants were having very manageable salary. Around 90 % (100) participants were having the more than 6 years of experience in the teaching field. This result is similar with one of the study which was conducted at Egypt in the year of 2018, where 95.8% were married and mean age 45.82 years [10]. Among the participants 63 (56.3%) were having adequate knowledge but still nearly half of the participants 49 (43.8%) were having inadequate knowledge. Similar result was found in the study which was conducted in Chitwan Nepal in the year of 2019. The score was 68.3%, having inadequate knowledge and 31.7% having adequate knowledge regarding attention deficit hyperactivity disorder [11]. One more similar result has been found conducted at Lalitpur metropolitan city, where 75.8% had poor knowledge and 30 24.2% had fair knowledge about attention deficit hyperactivity disorder [12]. Once again our study is lined up with another study which

was conducted in the year of 2017 in Egypt, where researcher has found 85.3% participants had poor knowledge, 12.6% were having average knowledge and 2.1% were had good knowledge score regarding ADHD [10]. Similar result was found in Basra, Iraq in 2018 where 50.5% were having poor knowledge, 36% were fair knowledge and 13.5% were having good knowledge regarding ADHD [13]. Our study revealed that teachers' level of knowledge is significantly associated with gender. But other variables like age, educational status, year of experience, number of hour spend; income status does not significantly associated with level of knowledge about ADHD. This finding is lined up with the study conducted in 2018 which shown significant relation between level of knowledge with their gender but with others variables are not associated significantly.

Again our study is similar to one study which was conducted at New Zealand where 2013 where the level of knowledge and gender of the participants were significantly associated that means female were answer more correctly than male participants [14]. The study was limited to government schools and teachers because of this, the result could not generalize.

## CONCLUSIONS

The study concludes that the teachers had inadequate

knowledge about ADHD. There was a strong correlation between ADHD knowledge level and gender. However, the relationship between level of

knowledge with age, educational qualification, number of hours worked, year of experience was not significantly associated.

#### ADDITIONAL INFORMATION AND DECLARATIONS

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**Data Availability:** Data will be available upon request to corresponding authors after valid reason.

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#### Supplementary Material-I:

##### KADDS TOOL:

Category – I which contains 15 items		True	False	Don't know
1	Most estimates suggest that ADHD occurs in approximately 15% of school age children			
2	ADHD children are typically more compliant with their fathers than with their mothers			
3	ADHD is more common in the 1st degree biological relative (i.e. mother, father) of children with ADHD than in the general population.			
4	It is possible for an adult to be diagnosed with ADHD.			
5	Symptoms of depression are found more frequently in ADHD children with in non-ADHD children.			
6	Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.			



7	If an ADHD child is able to demonstrate sustained attention to videogames or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.			
8	A diagnosis of ADHD by itself makes a child eligible for placement in special education.			
9	ADHD children generally experience more problems in novel situations than in familiar situations.			
10	There are specific physical features which can be identified by medical doctors (eg paediatrician) in making a definitive diagnosis of ADHD.			
11	In school age children, the prevalence of ADHD in males and females is equivalent.			
12	In very young children (less than 4 years old), the problem behaviours of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age appropriate behaviours of non-ADHD children.			
13	Children with ADHD are more distinguishable from normal children classroom in a classroom setting than in a free play situation.			
14	The majority of ADHD are children evidence some degree of poor school performance in the elementary school years.			
15	Symptoms of ADHD are often seen in non-ADHD are often seen in non- ADHD children who come from inadequate and chaotic home environments.			
<b>Category- II which include 9 items pertain to symptoms/diagnosis of ADHD</b>				
1	ADHD children are frequently distracted by extraneous stimuli.			
2	In order to be diagnosis with ADHD, the child's symptoms must have been present before age 7.			
3	Once symptoms of ADHD children is that they have been physical cruel to other people.			
4	ADHD children often fidget or squirm in their seats.			
5	It is common for ADHD children to have an inflicted sense of self esteem or grandiosity.			
6	ADHD children often have a history of stealing or destroying other people's things.			
7	Current wisdom about ADHD suggests two clusters of symptoms: one of inattention and another consisting of hyperactivity impulsivity.			
8	In order to be diagnosed as ADHD a child must exhibit relevant symptoms in two or more settings (e.g.home,school)			
9	ADHD children often have difficulties organizing tasks and activities.			
<b>Category – III which includes 12 items pertain to the treatment</b>				
1	Current research suggests that ADHD is largely the result of ineffective parenting skills.			
2	Antidepressants drugs have been effective in reducing symptoms for many ADHD children.			
3	Parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment.			
4	When treatment of an ADHD child is terminated, it is rare for the child's symptoms of return.			
5	Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction.			
6	Individual psychotherapy is usually sufficient for the treatment of most ADHD children.			
7	In severe cases of ADHD, medication is often used before other behaviour modification techniques are attempted.			
8	Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.			
9	Stimulants drugs are the most common type of drug used to treat children with ADHD.			
10	Behavioural/ psychological interventions for children with ADHD focus primarily on the child's problem with inattention.			
11	Electroconvulsive Therapy (i.e. shock therapy) has been found to be an effective treatment for severe cases of ADHD.			
12.	Treatments for ADHD which focus primarily on punishment have been found to be most effective in reducing the symptoms of ADHD.			