e - ISSN – 2349-0691

AMERICAN JOURNAL OF ADVANCES IN NURSING RESEARCH

Journal homepage: www.mcmed.us/journal/ajanr

A CROSS-SECTIONAL STUDY ON KNOWLEDGE REGARDING ATTENTION DEFICIT HYPERACTIVITY DISORDER AMONG PRIMARY SCHOOL TEACHERS

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Article Info

Received 25/03/2020
Revised 15/04/2020
Accepted 27/06/2020

Key word:knowledge, primary school teachers, attention deficit hyperactive disorder.

ABSTRACT

Attention deficit hyperactivity disorder (ADHD) is one of the most common neurobehavioral problem arises in school age children.Teachers can play a key role in identifying and supporting students with ADHD. The study aimed to assess knowledge regarding ADHD among primary school teachers. Methods: Descriptive cross-sectional study design was used in six schools of Bharatpur Metropolitan ofChitwandistrict.Non-probability purposive sample technique was used for the selection of the primary level teachers. Self-administered,semi-structured questionnaires were used to collect the data. Descriptive and inferential statisticswere used for analyzing the data using SPSS version 20. Results: The study revealed that majority (64.8%) were in age group of 20-30 years and 72.5% were female. Similarly, 73.6% were Brahmins followed by Hinduism (91.2%). Majority (67.0%) of the respondents were married. The main findings of the study showed that majority (69.2%) of the respondents had good knowledge on ADHD and 61.5% had watched television program and internet for obtaining the information. There is no association between the levels of knowledge with socio-demographic variables as $p>0.05$. Conclusion: The study concludes that primary school teachers tend to have adequate knowledge regarding ADHD and teachers go predominantly to unofficial sources of information to expand their knowledge about the disorder.

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is the most common neurobehavioral disorder of childhood and can profoundly affect the academic achievement, well-being, and social interactions of children (American Academy of Pediatrics, 2011) [1].

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 and hyperactivity/ impulsivity criteria. The symptoms presenting in two or more settings (e.g. at home, school, in other activities) and the symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and adversely effects directly on social, academic or occupational functioning, before age 12 years[2].

Children spend the greatest amount of their time in classrooms, they are likely to follow guidelines, behave in socially proper ways, participate in educational

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activities and withdraw from disturbing the learning development or activities of others. Teachers do not only must teach learners the skills abilities and knowledge that form part of the curriculum but also they must teach them to act in a manner that meets organizational, social and cultural expectations [3]. Children with ADHD require greater amounts of attention than their colleagues, a succession of organizational and structural modifications, and greater contribution by teachers [4].

The prevalence of ADHD among primary school children in India was found to be 11.32% where males (66.7%) found in greater number as compared to that of females (33.3%) and highest in the age group 9 and 10 years [5]. In case of Nepal a study conducted with sample size 350 among them prevalence of Attention Deficit Hyperactivity Disorder being 41(11.7%) [6].

ADHD is a major public health concern as it has marked long-term impairment on academic performance, vocational success and social-emotional development, which have a profound impact on individuals, families, schools and society[7].

METHODOLOGY

Descriptive cross-sectional study design was used for the study which was conducted at Bharatpur metropolitan of Chitwan district. It lies in southwestern part of Province 3.The study population were primary school teachers involving in Class I-V.For the selection of school, total schools present in Chitwanmetropolitan was listed from Private and Boarding Schools of Nepal (PABSON).Names of schools were selected by simple randomsampling technique by using lottery method and primary school teachers were selected by non-probability purposive sampling technique having experience of minimum of 2 years.Sample size was calculated by the Solvins Formula. Total estimated population (N)=1011. Confidence level of 90 percent (giving an alpha level of 0.1)i.e., (e) =0.1Now using formula:n = N / (1 + N e2) =1011/1+1011x0.1^2 =90.99

Therefore, the sample size was 91.Before data collection,research proposal approval was taken from the research committee andInstitutional Review Board (IRC) of NAIHS, CON. Written permission was taken from Bharatpur Metropolitan of Chitwan by submitting a request letter from NAIHS-CON. Permission for data collection was taken from concerned authority of selected schools. Self-introduction and the objectives of the study was explained to all the respondents before data collection. Written consent was obtained from all participants. Anonymity was maintained by coding the numeric numbers and confidentiality was maintained by assuring that information collected will only be used for the study purpose. None of the participants were forced to participate in the study and freedom was given to withdraw from it at any time. Data was collected by using semi-structured self-administered questionnaire. Time given was 25-30minutes for each participant. Respondents were requested to fill the questionnaire in their leisure period. Researcher herself was present during data collection.Data was collected from 2076-05-01 to 2076-05-13.

Questionnaire included two parts. Part I included socio-demographic data covering age, sex, ethnicity, religion, marital status, educational level of the teachers and teaching experience with ADHD students and part II includes questionnaire related to ADHD i.e nature and its causesof ADHD containing 9 items,its signs and symptoms related to Inattention containing 9 items, sign and symptoms related to Hyperactivity/Impulsivity containing 9 items, diagnosis and treatment had 6 items and the consequences of ADHD had 5 items.Knowledge score was computed as the score 1 for the correct answer and score 0 was given to the incorrect answer for each item.Total score and score percent were computed for each participants.The score of knowledge items will be sum up and categorized as follows:

- Good knowledge level =>75%
- Fair knowledge level = (50-75%)
- Poor knowledge level = Below 50%

(Deo, 2018).

After the data collection, it was reviewed to ensure the completion. Coding was done. Collected data was entered, analyzed using Statistical Package for Social Science (SPSS) version 20.Descriptive statistical like frequency, mean, percentage and standard deviation wereused and in inferential statistics i.e. chi-square test was used to determine the association betweenlevel of knowledge of the respondents on ADHD withsocio-demographic variables.Findings were presented in tables and figures.The tool of the study has only two options (i.e Yes/No) which bound the respondents either with Yes or No which is one of the limitation of this study.

RESULT

The presentation and description of the findings obtained from the analysis of the data collected from 91 teachers regarding **"Knowledge regarding Attention Deficit Hyperactivity Disorder among Primary School Teachers".**

Major Finding Of The Study

Table 1. Respondents' Socio-Demographic Information(N=91)

Characteristics	Frequency	Percentage
Age in years*		
20–30	59	64.8
31 – 40	17	18.7
41 and above ***Mean age=30.81, S .D=±7.450**	15	16.5
Sex		
Male	25	27.5
Female	66	72.5
Ethnicity		
Brahmin/Chhetri	67	73.6
Janajati	20	22.0
Dalit	4	4.4
Religion		
Hinduism	83	91.2
Buddhism	2	2.2
Christianity	3	3.3
Others	3	3.3
Marital status		
Married	61	67.0
Unmarried	28	30.8
Widow/Widower	1	1.1
Divorce	1	1.1
Educational level		
+2 level	16	17.6
Bachelor level	64	70.3
Masters level	11	12.1
Teaching experience		
<= 4	23	25.3
4 – 8	29	31.9
8 – 12	18	19.8
12 above	21	23.1

Table 2.Respondents' information related to ADHD (N=91)

Characteristics	Frequency	Percentage
Training course/in-service workshop about ADHD		
Yes	34	37.4
No	57	62.6
Experience in teaching to a child with ADHD		
Yes	54	59.3
No	37	40.7
Read any book or articles about ADHD		
Yes	39	42.9
No	52	57.1
Watched any television program about ADHD		
Yes	56	61.5
No	35	38.5
Searched the internet for information on ADHD		
Yes	56	61.5
No	35	38.5

Teacher feels confident in his ability to support student with ADHD		
Yes	68	74.7
No	23	25.3
Need training on ADHD		
Yes	84	92.3
No	7	7.7

Table 3.Respondents' Knowledge regarding the Nature and Causes of ADHD(N=91)

Characteristics	Frequency	Percent
ADHD is a group of behavioral and emotional problems of school age children.		
Yes	77	84.6
No	14	15.4
Key features of ADHD are inattentionand hyperactivity/impulsivity.		
Yes	86	94.5
No	5	5.5
The ADHD is more common in male than in female.		
Yes	67	73.6
No	24	26.4
Poor parenting practices can increase the risk of having ADHD in children.		
Yes	80	87.9
No	11	12.1
ADHD children are typically more compliant with their fathers than with their mothers.		
Yes	46	50.5
No	45	49.5
It is possible for an adult to be diagnosed with ADHD		
Yes	67	73.6
No	24	26.4
Children with ADHD are more distinguishable from normalchildren in a classroom setting than in a free play situation.		
Yes	68	74.7
No	23	25.3
The majority of ADHD children have evidence of some degree of poorschool performance in the elementary school years.		
Yes	75	82.4
No	16	17.6
Teachers play an important role in detecting and treating children with ADHD.		
Yes	86	94.5
No	5	5.5

Table 4.Respondents' knowledge regarding sign and symptoms related to Inattention(N=91)

Characteristics	Frequency	Percentage
Children with ADHD….often fails to give close attention to details or makes careless mistakesin schoolwork or during other activities.		
Yes	86	94.5
No	5	5.5
often has difficulty sustaining attention in different activities (e.g.,has difficulty remaining focused during lectures).		
Yes	83	91.2
No	8	8.8
often does not seem to listen when spoken to directly (e.g., mind seems elsewhere).		
Yes	86	94.5
No	5	5.5

often does not follow through on instructions and fails to finish schoolworks (e.g., starts tasks but quickly loses focus).		
Yes	80	87.9
No	11	12.1
often have difficulty organizing tasks and activities (e.g., difficultymanaging sequential tasks).		
Yes	80	87.9
No	11	12.1
often avoids, dislikes, or is reluctant to engage in tasks that requiresustained mental effort(e.g. schoolwork or homework).		
Yes	73	80.2
No	18	19.8
often loses things necessary for tasks or activities (e.g., schoolmaterials, pencils, books etc.		
Yes	80	87.9
No	11	12.1
is often easily distracted by extraneous stimuli		
Yes	65	71.4
No	26	28.6
is often forgetful in daily activities.		
Yes	70	76.9
No	21	23.1

Table 5.Respondents' Knowledge Regarding Sign and Symptoms related to Hyperactivity /Impulsivity(N=91)

Characteristics	Frequency	Percentage
Often fidgets with or taps hands or feet or squirms in seat		
Yes	75	82.4
No	16	17.6
Often leaves seat in situations when remaining seated is expected(e.g., leaves his or her place in the classroom).		
Yes	77	84.6
No	14	15.4
Often runs about or climbs in situations where it is inappropriate.		
Yes	66	72.5
No	25	27.5
Often unable to play or engage in leisure activities quietly.		
Yes	69	75.8
No	22	24.2
Is often "on the go," acting as if "drive by a motor" (e.g., uncomfortable being still for extended time).		
Yes	73	80.2
No	18	19.8
Often talks excessively.		
Yes	74	81.3
No	17	18.7
Often blurts out an answer before a question has been completed(e.g., cannot wait for turn in conversation).		
Yes	67	73.6
No	24	26.4
Often has difficulty waiting his or her turn (e.g., while waiting in line).		
Yes	80	87.9
No	11	12.1
Often interrupts or intrudes on others (e.g., butts into conversations,games, or activities)		
Yes	76	83.5
No	15	16.5

Table 6.Association of Knowledge regarding ADHD with socio-demographic variables(N=91)

Variables	Level of knowledge		P-value
	Good	Poor and fair	
Age			
<=30	41(68.49%)	18(30.51%)	0.942
30 above	22(68.75%)	10(32.35%)	
Sex			
male	17(68%)	8(32%)	0.876
female	46(69.69%)	20(30.30%)	
Ethnicity			
Brahmin/Chhetri	43(64.18%)	24(35.82%)	0.121*
Others	20(83.33%)	4(4.17%)	
Religion			
Hinduism	56(67.47%)	27(32.53%)	0.427*
others	7(87.5%)	1(12.5%)	
Marital status			
married	45(71.43%)	18(28.57%)	0.496
unmarried	18(64.29%)	10(35.71%)	
educational level			
+2	13(81.25%)	3(18.75%)	0.373*
bachelor and masters	50(66.67%)	25(33.33%)	
Teaching experience			
<12	49(70%)	21(30%)	0.772
>12	14(66.67%)	7(33.33%)	

***Value of Fischer exact**

Figure 1: Distribution of subscales knowledge levels of primary school teachers about ADHD

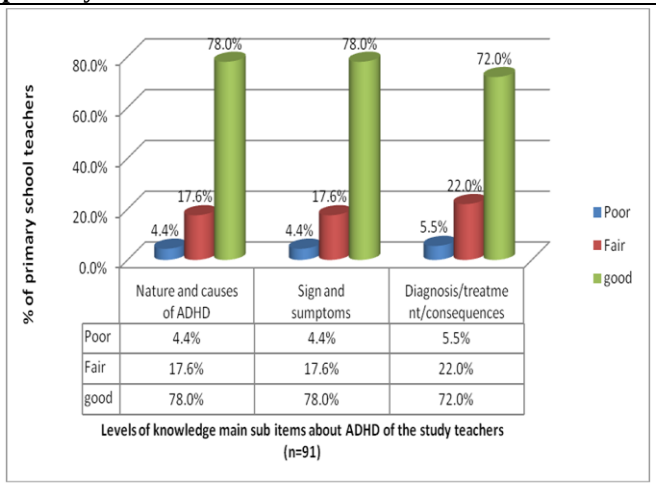

Figure 2: Respondents level of knowledge regarding ADHD

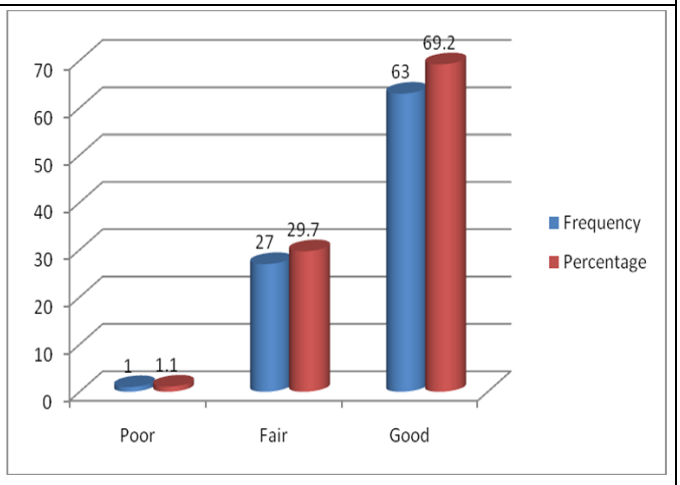

Table 1 represents the socio-demographic characteristics of the respondents. It shows that majority (64.8%), were in age group 20 – 30 years with mean age 30.81 and SD ±7.450. Majority 72.5% of the respondents were female. Similarly, majorities (73.6%) were Brahmin and least (4.4%) were Dalit. Almost all (91.2%) of the respondents followed Hinduism. Majorities (67.0%) of the respondents were married. Moreover, most (70.3%) of the respondents had completed bachelor level. Similarly, nearly one-third (31.9%) of the respondents had up to 4.01-8.00 years of teaching experience.

Table 2 interprets that the majority (62.6%) of respondents had not done training course/in-service on ADHD whereas 59.3% had experienced a child with

ADHD. Majority (57.1%) of the respondents did not read any books or articles about ADHD but 61.5% had watched television program and internet about ADHD.Majority (74.7%) feels confident in their ability to support students with ADHD. Almost all (92.3%) felt the need of training on ADHD.Table 3 shows that the respondents (79.59%)gavecorrect answer in nature and causes on ADHD and 20.14% gave incorrect answer on nature and causes of ADHD.Table 4 showed that the sign and symptoms related to inattention, the respondents (85.82%) gave correct answer and 14.18 gave incorrect answer on sign and symptoms related to inattention.

In the table 5, sign and symptoms related to hyperactivity/impulsivity, the responded (80.2%) gave correct answer and 19.8% gave incorrect answer.

On analyzing the diagnosis and treatment, the respondents gave 71.62 % correct answer and 28.38% gave incorrect answer.On the part of consequences on ADHD, the respondents (82.84%)gave correct answer and 17.16% gave incorrect answer.

Figure 1 illustrates that teachers had good knowledge regarding ADHD nature and causes subscale and regarding sign and symptoms subscale (78%) followed by the responses regarding diagnosis/treatment /consequences subscale (72%) on ADHD. Figure 2 illustrates that majority (69.2%) of the studied primary school teachers had good knowledge about ADHD followed by fair(29.7%) and poor knowledge (1.1%).

Association between poor, fair, and good level of knowledge and socio- demographic variables are shown in above table using Pearson Chi square test to establish the association of level of knowledge with different socio-demographic variables.There was no significant association between level of knowledge with socio-demographic variables as $p>0.05$.

DISCUSSSION

Socio-demographic Information

The findings of the study showed thatmajority (64.8%), were in age group 20 – 30 years with mean age 30.81 and SD ±7.450. Majority (72.5%) of therespondents were female belongs to Brahmin(73.6%)and almost all (91.2%) followed Hinduism. Majorities (67.0%) of the respondents were married and 70.3% had completed bachelor level. Similarly, nearly one-third (31.9%) of the respondents had up to 4.01-8.00 years of teaching experience.

Information related to ADHD

Present study revealed that themajority (62.6%) of respondents had not done training course/in-service on ADHD. A similar study conducted at Egypt [15] revealed that 81.4% of teachers had not received any training course. ADHD had been taken as a minor problem so higher level management had not focus on it.Majority (59.3%) had experience in teaching to a student diagnosed with ADHD. Similar findings seen in the study conducted at Caribbean region[9] where48% of teachers responded that they had taught a child with ADHD.This showed that ADHD has been one of the common problem we are neglecting which has to be given a great importance.

Majority (61.5%) had watched television program and internet about ADHD which is similar with the study conducted on elementary school teachers in Iran[10] .They found that "Iranian teachers acquired most of their knowledge about ADHD from television and internet.Majority (73.6%) correctly answered that ADHD is more common in male which is very similar with the study conducted at New Zealand [11] who found that 92% males had ADHD.Most (87.9%) of the respondents knew that poor parenting practices can increases the risk of having ADHD. This result is in agreement with the study conducted at New Zealand[11] which showed that (82.1%) agreed that poor parenting can increases the risk of having ADHD. Similarly, the study conducted at Shrilanka[13] showed that 80% had knew that poor parenting practices can increases the risk of ADHD.

The present study revealed that most (82.4%) of the respondents answered correctly that often fidgets with or taps hands or feet or squirms in seat which is consistent with the study conducted at New Zealand[11]which showed that most (86.7%) of the respondents agreed that the children with ADHD often fidget or squirms in their seats. Majority (71.4%) has correctly responds that child with ADHD is often easily distracted by extraneous stimuli .The study conducted at New Zealand[11] showed that most (88.1%) children with ADHD are frequently distracted by external stimuli.

The present study showed that (87.9%) answered correctly that in order to be diagnosing as ADHD, a child must exhibit relevant symptoms in two or more settings. This finding is inconsistent to the study conductedat Riyadh, Saudi Arabia[12], in which (15.9%) said that child must exhibit the symptoms in two settings. This disparity between studies might be due to difference in question model.The present study revealed that most (85.7%) of the respondents knew that ADHD can cause family disruption while contrast findings was seen in the study conductedat Caribbean[9] region found that 28.7% knew that ADHD causes family disruption. This finding is in contrast with present study. This variation might be due to small sample and different study area.

The present study showed that most (87.9%) of the respondents knew that ADHD can be treated by behavioral therapy which is in contrast with the study conducted [13] at Srilanka which showed that 74.2% had the knowledge that ADHD can be treated with behavioral therapy. This variation might be due to different study

setting.Most (87.9%) of the respondents knew that parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment and 79.1% knew that if not controlled ADHD can result in academic failures which is somehow consistent to the study conducted at Srilanka[13] which showed that 75.7% knew that parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment and 71.3% knew that ADHD can results in academic failures.

Present study showed that majority (69.2%) of the respondents had good level of knowledge regarding ADHD which is supported by the similar study conducted at Riyadh Saudi Arabia[14] which also showed 72% of theteachers had good level of knowledge about ADHD while contrast finding seen in the study conducted in Egypt[15] which revealed thatonly 10.2% had good knowledge about attention deficit hyperactivity disorder.

Association between Level of Knowledge and Socio-demographic variables

This study found no significant association between socio-demographic variables with the level of knowledge regarding ADHD at 0.05 level of significance. This finding is supported by the similar study conducted at Riyadh Saudi Arabia [14]which showed there found no significant association with overall knowledge with socio-demographic variables. Similarly a study conducted at Egypt [15] showed that there was significant association between level of knowledge regarding ADHD and socio-demographic variables. This variation might be due to difference in study setting.

CONCLUSION

Based on the findings of the present study it can be concluded that primary school teachers had good knowledge about Attention deficit hyperactivity disorder but found no association between levels of knowledge with socio-demographic variables. Only knowledge is not enough it should also be equally practicable to the students who spend most of the time in the school.

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