

ORIGINAL RESEARCH ARTICLE

KNOWLEDGE REGARDING ATTENTION DEFICIT HYPERACTIVITY DISORDER OF CHILDREN AMONG SCHOOL TEACHERS AT LALITPUR

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ABSTRACT

Background: Attention deficit hyperactivity disorder (ADHD) is one of the most common mental disorders affecting children. ADHD knowledge among teachers helps managing such children. This study aimed to assess the knowledge regarding ADHD of children among school teachers at Lalitpur, Nepal.

Methods: A descriptive cross-sectional study was conducted among 124 primary school teachers in 19 government schools of Lalitpur Metropolitan City. A standard tool "Knowledge of Attention Deficit Disorders Scale (KADDS)" was used, which is valid and reliable tool designed by Scitutto and colleagues. Data were collected from 2017/06/20 to 2017/07/20. Data were analyzed using descriptive (frequency, percentage, mean and standard deviation) and inferential statistics (chi square test) for frequency distribution and association between levels of knowledge regarding ADHD with selected variables.

Results: Eighty-five (68.5%) female and 39 (31.5%) male teachers with the mean age 41.85 ± 8.80 years (range 18 to 58 years) were enrolled. Majority teachers were married (94.4%) and from urban area (75%) with bachelor's degree (37.9%) as their educational qualification and 11 to 20 years of teaching experiences (42.74%). The significant influencing variables were educational qualification ($p = 0.009$), type of service ($p = 0.018$), teaching experiences ($p = 0.002$), in-service education on ADHD ($p = 0.004$) and experience with ADHD students ($p = 0.001$). The study showed that 94 (75.8%) teachers had poor knowledge.

Conclusions: It was concluded that three fourth of the teachers had poor knowledge about ADHD. Teachers knowledge will help to identify, refer and help in management of children with ADHD.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is one of the most common mental disorders affecting children and is characterized by sustained inattention, impulsivity, and hyperactivity with prevalence rate of 5.29%.¹ The ADHD symptoms are usually evident in the classroom, placing teachers in a unique position to identify and refer such students for further assessment.² The psychologist or medical practitioner needs thorough information from the teachers to assist in making a diagnosis.³ Different studies found that teachers have limited and inaccurate knowledge and often provide inappropriate information about the condition to parents.⁴⁻¹⁴ Thus it is important to assess the accuracy of teacher's knowledge of ADHD in order to help and support children identification with ADHD in the best possible way. So, this study attempted to find out knowledge regarding ADHD of children among school teachers at Lalitpur, Nepal.

METHODS

A descriptive cross-sectional study was conducted among school teachers in 19 government schools of Lalitpur

Metropolitan City who were teaching from grade 1 to 5. Simple random sampling technique was used to select the 124 samples from the total population of teachers teaching in government school at Lalitpur Metropolitan City.

Structured self-administered questionnaire (SAQ) was developed. Knowledge of Attention Deficit Disorders Scale (KADDS)¹¹ was used to find out the knowledge regarding ADHD among school teachers.

Knowledge of Attention Deficit Disorders Scale (KADDS): This is a standard, valid and reliable tool designed by Scitutto and colleagues, used to identify the knowledge of school teachers. The responses have three option namely incorrect, correct and don't know responses. KADDS total scale have 36 items with three subscales namely associated features, symptoms/diagnosis, and treatment. The reliability of the research instrument was checked by conducting pretest among 10% of total sample size in a similar situation. The internal consistency of instrument was established by Cronbach Alpha, which was 0.79.

Ethical approval was taken from Chitwan Medical College (CMC) Institution Research Committee (CMC-IRC). The data collection was done from 2017/06/20 to 2017/07/20. The pur-

pose of data collection was explained and written informed consent was obtained from each teacher. The data were reviewed, checked for accuracy, completeness and then organized. They were entered into the Statistical Package for Social Science (SPSS) version 20 for analysis.

Data were analyzed using descriptive statistics such as frequency, percentage, mean, standard deviation and inferential statistics i.e. chi square test was used to find association between level of knowledge with selected variables. The p-value less than 0.05 was considered statistically significant. Level of knowledge: KADDS scale consists of 36 items scale with dichotomous answer, so researcher took a mid-value dividing 36 item scale by two which was 18. Fair knowledge with scores ≥ 18 whereas poor knowledge with scores < 18 .

RESULTS

The Table 1 showed out of 124 teachers, 45 (36.3%) were between 31-40 years' age group, similarly another 45 (36.3%) were between 41-50 years'. The majority of teachers were female (68.5%) and married (94.4%). Most of the teachers were from the urban region (75%) with bachelor's (37.9%) and intermediate (25%) degree, having permanent job (73.4%). Regarding teaching experiences, 53 (42.74%) teachers had 11-20 years of experiences whereas 40 (32.26%) teachers had more than 20 years of experiences.

Table 1: Socio-demographic characteristics of the teachers

Variables	Frequency (%)
Age (years)	
≤ 30	14 (11.3%)
31-40	45 (36.3%)
41-50	45 (36.3%)
≥ 51	20 (16.1%)
<i>Mean \pmSD 41.85\pm8.80 Min.:18yrs, Max.:58yrs</i>	
Sex	
Male	39 (31.5%)
Female	85 (68.5%)
Marital status	
Married	117 (94.4%)
Unmarried	7 (5.6%)
Residence	
Rural	31 (25%)
Urban	93 (75%)
Educational qualification	
School Leaving Certificate (SLC)	16 (12.9%)
Intermediate	31 (25%)
Bachelor's degree	47 (37.9%)
Master's degree	30 (24.2%)
Type of service	
Permanent	91 (73.4%)
Temporary	33 (26.6%)
Teaching experiences (years)	
≤ 10	31 (25%)
11-20	53 (42.74%)
>20	40 (32.26%)
<i>Mean \pmSD 17.17\pm8.64 Min.:1yr, Max.:36yrs</i>	
Subject teaching	
Health	7 (5.6%)
Others*	117 (94.4%)

* Others = English, nepali, math, social studies, science

Table 2: Teachers' previous information, education and experiences of dealing ADHD children

Variables	Frequency (%)
Sources of ADHD information	
Radio	14 (11.3%)
Television	13 (10.5%)
Magazines	6 (4.8%)
Internet	6 (4.8%)
Multiple sources	70 (56.5%)
Others*	9 (7.3%)
Undisclosed	6 (4.8%)
In-service education on ADHD	
Yes	33 (26.6%)
No	91 (73.4%)
Experiences in dealing with ADHD children	
Yes	34 (27.4%)
No	90 (72.6%)
Suspected ADHD students in classroom	
Yes	63 (50.8%)
No	61 (49.2%)
* Others = colleagues	

Table 2 showed that majority of the teachers have heard of ADHD from multiple sources (56.5%). Regarding in-service education of ADHD, 91 teachers (73.4%) did not have any formal educational training. Majority (90; 72.6%) of the teachers did not have experiences in dealing with ADHD children but 63 (50.8%) teachers mentioned that they suspected ADHD students in their classroom.

Table no. 3: Teachers' scores on sub-scales on KADDS

Scales	Responses		
	Correct (%)	Incorrect (%)	Don't know (%)
Associated (general) features subscale	30.48	37.36	32.16
Symptoms/Diagnosis subscale	52.14	24.19	23.67
Treatment subscale	43.05	28.51	28.44
Total scores	40.09	31.11	28.80

Table 3 showed the mean percentages of correct, incorrect and don't know responses where the highest mean score 52.14% as well as least mean scores (incorrect-24.19% & don't know-23.67%) on Symptoms/Diagnosis subscale among all subscales and KADDS total scores. Teachers scored the lowest correct (30.48%) responses and highest incorrect responses (37.36%) on the associated features subscale.

Table no. 4: Teachers' Level of Knowledge on ADHD

Level of Knowledge	Frequency (%)
Fair (≥ 18)	30 (24.2%)
Poor (< 18)	94 (75.8%)
Total	124 (100%)

Table 4 showed among 124 teachers, 94 (75.8%) had poor knowledge while 30 (24.2%) had fair knowledge on ADHD.

Table 5: Association between level of knowledge and socio-demographic variables

Variables	Level of Knowledge		χ^2	p-value
	Poor No. (%)	Fair No. (%)		
Age group (in years)				
<40	41(69.5)	18 (30.5)	2.447	0.118
>41	53 (81.5)	12 (18.5)		
Sex				
Male	29(74.4)	10 (25.6)	0.065	0.799
Female	65(76.5)	20 (23.5)		
Marital status				
Married	87 (74.4)	30(25.6)	1.176	0.278¥
Unmarried	7 (100)	-		
Residence				
Rural	24 (77.4)	7(22.6)	0.059	0.809
Urban	70 (75.3)	23 (24.7)		
Educational qualification				
SLC	16 (100)	-		
Intermediate	27 (87.1)	4(12.9)	15.212	0.009*
Bachelor	30(63.8)	17 (36.2)		
Masters	21 (70.0)	9 (30.0)		
Types of service				
Permanent	64 (70.3)	27 (29.7)	5.592	0.018
Temporary	30 (90.9)	3 (9.1)		
Subject taught				
Health	6 (85.7)	1 (14.3)	0.031	0.860 ¥
Others	88(75.2)	29 (24.8)		
Teaching Experiences (in years)				
≤ 10	27 (87.1)	4 (12.9)		
11-20	32 (60.4)	21(39.6)	12.016	0.002
>20	35 (87.5)	5(12.5)		

*Likelihood ratio

¥ Yates correction

Table 5 showed there was no statistical significance association between level of knowledge and age group, sex, marital status and residence of teachers. Association of educational level of teachers with level of knowledge, where 100% teachers having only the education level of SLC had poor knowledge on ADHD. Similarly, 90.9% teachers who had temporary job on the school had poor knowledge and 87.1% of teachers who had less than 10 years of experience had poor knowledge.

Table 6: Association between Level of Knowledge and ADHD variables

Variables	Level of Knowledge		χ^2	p-value
	Poor No. (%)	Fair No. (%)		
In-service education on ADHD				
Yes	19 (57.6)	14 (42.4)	8.149	0.004
No	75 (82.4)	16 (17.6)		
Experience with ADHD students				
Yes	13 (38.2)	21 (61.8)	36.055	<0.001
No	81 (90.0)	9 (10.0)		
Suspected ADHD students in classroom				
Yes	52 (82.5)	11 (17.5)	3.166	0.075
No	42 (68.9)	19 (31.1)		

Table 6 showed that 82.4% of teachers who had not taken in-

service education had poor knowledge and 61.8% of teachers who had experience with ADHD students had fair knowledge.

DISCUSSION

The demographic characteristics of the teachers in this study were comparable to those of teachers in different studies that have examined teachers' knowledge of ADHD.^{4,5,9,10,15-17} Female teachers (68.5%) were more than male that may be attributed to the reasons that the females have empathy towards children than males and more contact with her children at home. Most of the teachers were teaching more than two subjects in a same or different classroom. This might be due to the less number of teachers available in government schools at developing countries like ours, so a single teacher had to cover multiple subjects.

In this study, 73.4% teachers did not have attended in-service education on ADHD during their teaching career. Only 26.6% teachers claimed to have attended such education. However, some studies like Topkin, Roman and Mwaba¹⁸ showed higher percentage of teachers (82.2%) with ADHD training. So far the knowledge of the researcher of this study, there is no formal training program was available for the government school teachers regarding ADHD. Most of the in-service educations were based on the behavioral problems of the school children which includes ADHD. In line with the findings of Aly⁵ as well as Sfaan, Ali, Nagar and Saleh¹⁰, 72.6% of all the teachers in our study did not have any experiences of dealing with ADHD children during their teaching career. But Youssef et al.¹⁷ and Bradshaw and Kamal¹⁹ reported 48% and 54.5% respectively, of their participants who had experience dealing with students with ADHD. This difference might be due to the majority teachers did not have any in-service education and training which caused difficulty in identifying such behavioral problems. Although most of the teachers did not have formal in-service education or training, 50.8% teachers marked "yes" in the questionnaire regarding ADHD students in their classroom. This finding is in contrast to the previous data regarding experiences of dealing with ADHD. This contradictory finding might be due to the teachers' misconception regarding ADHD or they considered other childhood behavioral and emotional disorders as ADHD. Our finding is in contrast with Shetty and Rai¹², in which they reported 73% of teachers, denied presence of suspected ADHD students.

The correct responses indicated having knowledge, whereas incorrect and don't know responses pointed a lack of knowledge in total KADDS questionnaires. This study showed that three fourth of teachers (75.8%) had poor level of knowledge whereas only 24.2% had fair knowledge on ADHD. Other different studies had also shown similar result.^{4,5,9,10,12,16-18,20}

In this study, there were no statistical association between the level of knowledge and socio-demographic variables. But the teachers with less than 40 years of age had highest fair rate (30.5%) which might be due to their enthusiasm to acquire up-to-date knowledge regarding childhood behavior problems.

These findings were supported with the studies by Tyagi et al.²⁰ Similarly, there was no statistical significant association of the level of knowledge with subject teaching ($p = 0.860$) and presence of suspected ADHD students in the classroom ($p = 0.075$).

There were statistically significant association of the level of knowledge with educational qualification of the teachers ($p = 0.009$), type of service ($p = 0.018$), teaching experiences ($p = 0.002$), in-service education ($p = 0.004$) and experiences of dealing with ADHD children ($p < 0.001$). These findings were supported with the results shown by Perold et al.⁹ ($p = 0.00$), Safaan, Ali, Nagar and Saleh¹⁰ ($p = 0.0001$) and Tyagi et al.²⁰ ($p = 0.004$). The most bachelor degree holder teachers (36.2%) had fair knowledge as compared to the other qualifications. All teachers who had only qualification of SLC had poor knowledge. The permanent job holder teachers had the highest fair knowledge level (29.7%) which might be due to the reason that whenever government planned any education programs, the permanent job holders used to get the first priority than teachers working on temporary basis. The teachers who had long duration of teaching experiences had fair knowledge which might be because of their interaction with large number of children during teaching career. The teachers who claimed to have in-service education and experience with dealing ADHD children in their classroom had fair knowledge which might be because of their previous acquired knowledge.

There were certain limitations in this study. First, this study

was done only among primary school teachers. Second, only government schools of Lalitpur metropolitan city were included. So, the findings of this study could not be generalized to the other districts and private schools.

CONCLUSION

It was concluded that three fourth of the teachers had poor knowledge on ADHD. The knowledge was related to the educational qualification, type of service, teaching experience, in-service education and experiences with dealing ADHD children in their classroom. Every schools have to make arrangements for all the teachers to provide in-service education regarding behavioral problems including ADHD with frequent updates. An adequate knowledge will help to identify, refer and help in management of children with ADHD.

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CONFLICT OF INTEREST

None

FINANCIAL DISCLOSURE

None

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