

## An Investigation of Primary Schools Teachers' Attitude and Awareness about Attention Deficit Hyperactivity Disorder (ADHD)

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### Abstract

Through survey research this study investigated teachers' knowledge of and attitude towards attention deficit hyperactivity disorder (ADHD) present in children. Objectives of the study were to explore teachers' knowledge about and attitude towards ADHD and examine the difference between male and female teachers' knowledge about and attitude towards ADHD. Research questions framed were what is the knowledge level of teachers about ADHD? And what is their attitude towards ADHD? For finding the differences null hypotheses of; H<sub>0</sub>1: there is no significance difference between the level of male and female teachers' knowledge about ADHD and H<sub>0</sub>2: there is no significance difference between male and female teachers' attitudes towards ADHD were stated. The study was delimited to the primary schools' teachers serving in the public schools of district Karak, Khyber Pakhtunkhwa only. Through cluster random sampling techniques, total 1358 teachers, 887 male and 471 female which was about half of the male and female teachers were chosen as sample. Data was collected through assistants from the teachers in their training centers during the conduct of their CPD training with prior permission of the concerned resource persons in each center school. The adapted versions instruments were translated into national language "Urdu" before being used in the field for data collection. Descriptive statistics of means, percentages and inferential statistics of an independent sample t-test were used for analysis of data. Inadequate knowledge of teachers about ADHD.

**Keywords:** primary schools' Teachers, attitude, attention deficit hyperactivity disorder (ADHD)

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## Introduction

Teachers in primary schools of Khyber Pakhtunkhwa, Pakistan use to teach various subjects to the students of different grades. They teach, keeping in view the abilities and needs of each student in the class. They are engaged in enhancing students' skills, knowledge and engaging them in a fruitful way for improving their learning. Teachers are responsible for supporting and educating students so that to achieve the desired learning objectives. They have to manage classroom behavior to create conducive learning environment for all sorts of learners. Despite all these efforts of teachers, some learners were left behind in reaching their specific grade level required benchmark. This may be due to various reasons as, students come to school with different family background accompanied by individual differences and having different learning preferences and difficulties.

Some students are good learners and show excellent performance in the class, some are slow learners and even some students have various learning difficulties. Learning difficulties encountered by students are fairly common in schools, however, these are different in different schools and countries. The learning difficulties may be because of several reasons, for instance learners may have emotional or psychological issues, problems of hearing or vision impairment, ineffective instructions, high absenteeism, and inadequate curricula. Among these, one of the most common factors that prevails globally (Gobel et al, 2018) due to which students face learning difficulties in schools and show poor academic progress is their attention deficit hyperactivity disorder (ADHD). Students having the symptoms of impulsivity, hyperactivity and inattention are the victims of ADHD (Sutcliffe, Bishop, & Houghton, 2006). About 7.2% children of the school age are identified with ADHD globally (American Psychiatric Association, 2022). The symptoms of ADHD have an impact on one's work (Thomas et al, 2013) and they face different problems in the classroom because of ADHD (Martel, 2013).

. Students with ADHD lack concentration and are not able to regulate their physical and emotional responses appropriately (DuPaul, 2011). They usually commit mistakes carelessly and avoid performing such tasks which need continued mental efforts due to which their educational practices are adversely affected (OSERS, 2003). They show poor academic progress in their subjects (Loe & Feldman, 2007), and about 95% of learners having ADHD are academically under-achievers (Barkley, 1990). The main source for accelerating the academic progress of all children including the students of ADHD is teachers.

In the process of treatment and diagnosis of the learners with ADHD the most influential individuals who can play an important role are teachers as they have frequent interactions with all kinds of children (Snider et al., 2003). Teachers are the major sources of referring children with ADHD to the pediatricians (Arnett et al., 2013). They need to have relevant knowledge and a positive attitude for successful role playing in diagnosing and coping with children having symptoms of ADHD.

## Literature Review

Teachers spend more time with children in school and are supposed to have maximum interaction time with them. They have an unavoidable role to

identify and treat students with ADHD in their classrooms (Khademi, et al. 2016; Alfageer HH et al; 2018). They need to have sufficient knowledge and an appropriate positive attitude towards these students to behave in an acceptable and recommendable way (Youssef MK, Hutchinson G, Youssef FF, 2015; Lewis E (2018). Teachers equipped with Knowledge and having positive attitude about ADHD treat the students fairly (Soroa, Gorostiaga, and Balluerka 2013). Teachers can successfully handle and teach efficiently to the students having ADHD subject to the conditions if they have positive attitude and sufficient knowledge about ADHD (Jadhav and Valvi, 2020).

Teachers' insufficient knowledge about ADHD is a major factor due to which ADHD is not appropriately diagnosed and treated fairly (Shapiro and DuPaul, 1993). Similarly, teachers' attitude towards ADHD has a significant role in treating the children having ADHD. The prejudice of teachers against ADHD creates further problems. Teachers' attitude and the way they treat the students with ADHD not only directly affect the children, but it may also shape the perceptions of other students about those children (Atkinson, Robinson and Shute, 1997). It has been reported that teachers in the classroom treat students unfairly with ADHD if they have lack of knowledge and false attitude about ADHD. It confers that teachers' knowledge of ADHD is highly important even than small research about ADHD has been conducted. Mixed results regarding teachers' level of knowledge of ADHD have been narrated in the literature (Sarah, Winnie and Andrew, 2020).

A study conducted by Fahad and Yousef (2021) investigating primary school teachers' knowledge and attitude of Attention-Deficit and Hyperactivity Disorder (ADHD) among male, in Riyadh City, Saudi Arabia. They have reported that elementary school teachers had deficient knowledge about ADHD in children. They have also mentioned that teachers had misunderstanding about the symptoms of ADHD. In another cross-sectional and descriptive study carried out on one hundred and twenty private and public schools' teachers as samples in Iran. The results of this study revealed that teachers had moderate level of attitude and knowledge about ADHD. The need to educate teachers regarding ADHD has been realized for treating the children having this disorder and its etiology (Maede, Maryam Amidi and Zahra, 2020).

Research comprising 596 government schools' teachers as samples of the study was conducted in New South Wales. The findings of this study show that positive attitude was shown by teachers towards the students having ADHD. However, the research has reported that because of teachers' lack of knowledge they need more knowledge regarding ADHD and also need to know the strategies for managing it in the classroom (Sarah Mulholland, Therese M. Cumming, and Jihyun Lee, 2023). Research for finding teachers' attitude and knowledge of students with ADHD and their treatment carried out in a district of Turkey. The research was completed through an online survey and data was collected from 227 teachers. Findings of the study showed that teachers had poor knowledge in certain areas about ADHD. Their non-supporting attitude and perceptions towards ADHD has also been reported. In this research

the need for enhancing teachers' knowledge and alleviating their negative attitude and perception towards ADHD has been felt (Akdag, 2023).

At national level, a study on the investigation of teachers' attitude, knowledge, and practices toward the students of ADHD through descriptive research was conducted by Faizan, Shah, Seema and Naz (2021). Population of the study comprised primary school teachers of public and private sector in the district Haripur, Khyber Pakhtunkhwa, Pakistan. Data was collected from total 600 participants, three hundred from each male and female teacher through self-developed questionnaire as instrument of the study. The results of the study revealed that both male and female of public as well as private sector institutions, teachers have low level of knowledge about ADHD. However, it is worth mentioning that both male and female teachers of public and private schools had good practices and attitude towards the students with ADHD. Another cross-sectional research study was carried out to find teachers' attitude, knowledge and their practices about ADHD in Karachi, Pakistan. The private schools' primary level teachers between the ages of 20-50 years were the population of the study. Purposive sampling technique was used, and information was gathered from 264 male and female teachers as being sample of the study. For collection of information, Conner's teachers rating scale (CTRS) was adapted with making some modifications keeping in view the cultural norms and values of the locality. Results of the study showed that teachers had good knowledge about ADHD and their attitude towards the children of ADHD was reported as positive. As compared to male teachers, the attitude of female teachers towards ADHD was negative (Mirza, Nisar & Ikram Z; 2017).

### **Objectives of the Study**

1. To explore teachers' knowledge about ADHD.
2. To investigate teachers' attitude towards ADHD.
3. To analyze the difference between male and female teachers' knowledge about ADHD.
4. To examine the difference between male and female teachers' attitude towards ADHD.

### **Research Questions**

1. What is the knowledge level of teachers about ADHD?
2. What is teachers' attitude towards ADHD?

### **Null Hypotheses**

H<sub>01</sub>: There is no significance difference between the level of male and female teachers' knowledge about ADHD.

H<sub>0</sub>2: There is no significance difference between male and female teachers' attitudes towards ADHD.

### **Limitations and Delimitations of the Study**

This study was delimited to the district Karak of the province of Khyber Pakhtunkhwa, Pakistan. Only primary school teachers of the district Karak were considered as population of the study. Generalizing the findings of this study to other areas of the province and other cadres of teachers are its limitations. Moreover, this study was delimited to the teachers of public primary schools only. Generalization of these results to the teachers of private and other types of institutions is also its limitation. So its findings are limited to the public primary school teachers only.

### **Methodology**

There are 349 and 433 government primary schools for girls and boys respectively in District Karak. A total of 2713 primary school teachers are working in these schools. Among them, 940 are female and 1773 are male teachers in these schools and hence it was population of the study. The cluster wise breakup of the population is as under in table 1.

**Table 1**

*Detail breakup of the population.*

| Name of cluster                            | Banda Daud<br>Shah | Karak | Takht-e-<br>Nasrati | Total |
|--|--------------------|-------|---------------------|-------|
| Total male primary<br>school teachers      | 378                | 656   | 739                 | 1773  |
| Total female<br>primary school<br>teachers | 157                | 412   | 371                 | 940   |
| Grand Total                                |                    |       |                     | 2713  |

About half of the teachers were selected from each cluster through cluster random sampling techniques. Sample of the study comprised total 1358 teachers. Among these, 887 were male teachers taken from government primary schools for boys and 471 were female teachers selected from government primary schools for girls. Detail of the sample selected from each cluster is presented in table 2 as follows.

**Table 2***Cluster wise breakup detail of the sample*

| Name of cluster                                 | Banda Daud<br>Shah | Karak | Takht-e-<br>Nasrati | Total |
|---|--------------------|-------|---------------------|-------|
| Number of male<br>selected sample<br>teachers   | 189                | 328   | 370                 | 887   |
| Number of female<br>selected sample<br>teachers | 79                 | 206   | 186                 | 471   |
| Grand Total                                     |                    |       |                     | 1358  |

**Data Collection Procedure**

Throughout the academic calendar in each month one day continuous professional development (CPD) training is arranged for all primary school teachers in the province of Khyber Pakhtunkhwa. The center for this training is one of High/Higher Secondary School in each circle of all the districts and it is mandatory for all primary school teachers. The data was collected through assistants from the teachers in their training centers during the conduct of their CPD training. For collection of data prior permission was taken from the concerned resource persons in each center school.

**Data Collection Instrument**

The Knowledge of Attention Deficit Disorders Scale (KADDS) being used internationally (Sciutto et al. 2000) and the attitude questionnaire used by Adamis et al. (2018) was adapted as data collection instruments. KADDS assesses teachers' knowledge about causes, symptoms, and diagnostics of ADHD. This scale comprises 15 items about the information of ADHD having the options of True, False and don't know. The questionnaire about attitude was 4-points Likert scale ranged from 1 = "strongly disagree" to 4 = "strongly agree". The adapted instruments were validated, and pilot tested. The reliability coefficients of KADDS and attitude scale were 0.81 and 0.79 respectively. For better understanding by the participants, the adapted versions of the scale and questionnaire were translated into national language "Urdu" before using in the field for data collection.

## **Analysis of Data**

Data regarding teachers' knowledge was analyzed through descriptive statistics of means and percentages. An independent sample t-test was used for analyzing difference between male and female teachers' knowledge and attitude towards ADHD.

## **Results of the Study**

Table 3 shows that over all above 40% of male teachers gave correct responses about knowledge of ADHD. In the remaining above 48% male teachers' responses were wrong and above 10% teachers had no information about ADHD and if the teachers have opted the no information option it reflects that they have no knowledge about ADHD. So, all together slightly less than 60% male teachers lack the knowledge about ADHD.

According to table 3 slightly less than 36% female teachers' response about knowledge of ADHD was correct and about 44% female teachers gave false response while, slightly above 20% female teachers had no information about ADHD. So, false responses and responses of no information given by female teachers about ADHD indicate that somewhat above 64% teachers had no knowledge about ADHD. Further, evidently as compared to male teachers, female teachers had very less knowledge about ADHD.

**Table 3***Results of teachers' responses about knowledge of ADHD (in percent)*

| Statement  |               | Correct Responses | False Responses | No information |
|--|---------------|-------------------|-----------------|----------------|
| Most estimates suggest that ADHD occurs in approximately 15% of school age children.   | Male          | 36.87             | 47.91           | 15.22          |
|  | Female        | 31.85             | 61.15           | 7.00           |
| ADHD children are typically more compliant with their fathers than with their mothers.   | Male          | 38.33             | 49.27           | 12.40          |
|  | Female        | 41.41             | 23.35           | 35.24          |
| ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.   | Male          | 39.57             | 48.70           | 11.73          |
|  | Female        | 40.76             | 25.05           | 34.19          |
| It is possible for an adult to be diagnosed with ADHD.   | Male          | 39.13             | 49.83           | 11.04          |
|  | Female        | 40.34             | 25.90           | 33.76          |
| Symptoms of depression are found more frequently in ADHD children than in non-ADHD children.   | Male          | 40.14             | 49.38           | 10.48          |
|  | Female        | 39.70             | 25.48           | 34.82          |
| Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.   | Male          | 40.81             | 46.11           | 13.08          |
|  | Female        | 26.12             | 58.17           | 15.71          |
| If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.             | Male          | 41.71             | 47.69           | 10.60          |
|  | Female        | 28.45             | 52.66           | 18.89          |
| A diagnosis of ADHD by itself makes a child eligible for placement in special education.   | Male          | 40.47             | 48.59           | 10.94          |
|  | Female        | 31.21             | 53.50           | 15.29          |
| ADHD children generally experience more problems in novel situations than in familiar situations.  | Male          | 40.25             | 49.72           | 10.03          |
|  | Female        | 32.06             | 50.53           | 17.41          |
| There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD.  | Male          | 40.70             | 48.93           | 10.37          |
|  | Female        | 31.42             | 51.17           | 17.41          |
| In school age children, the prevalence of ADHD in males and females is equivalent.   | Male          | 42.16             | 48.37           | 9.47           |
|  | Female        | 37.80             | 48.83           | 13.37          |
| In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children. | Male          | 40.92             | 49.27           | 9.81           |
|  | Female        | 38.22             | 53.50           | 8.28           |
| Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation.   | Male          | 44.09             | 47.91           | 8.00           |
|  | Female        | 38.22             | 44.80           | 16.98          |
| The majority of ADHD children evidence some degree of poor school performance in the elementary school years.  | Male          | 43.74             | 48.59           | 7.67           |
|  | Female        | 38.85             | 43.95           | 17.20          |
|  | Male          | 44.42             | 49.04           | 6.54           |
| Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments.   | Female        | 40.13             | 42.67           | 17.20          |
| <b>Over all Responses (in Percentage)</b>  | <b>Male</b>   | <b>40.89</b>      | <b>48.62</b>    | <b>10.49</b>   |
|  | <b>Female</b> | <b>35.77</b>      | <b>44.05</b>    | <b>20.18</b>   |



**Table 4***Teachers' responses about their attitude towards ADHD*

| Statement   |               | SDA          | DSA          | A            | SA           |
|---|---------------|--------------|--------------|--------------|--------------|
| ADHD is a clearly defined psychiatric disorder  | Male          | 16.57        | 33.48        | 25.93        | 24.02        |
|   | Female        | 38.64        | 25.48        | 18.47        | 17.41        |
|   |               |              |              |              | 28.86        |
| ADHD is a new, 'fashionable' disorder   | Male          | 14.89        | 26.83        | 29.42        |              |
|   | Female        | 29.51        | 27.60        | 26.54        | 16.35        |
| ADHD is society's excuse for badly behaved children   | Male          | 18.04        | 25.48        | 32.02        | 24.46        |
|   | Female        | 25.69        | 25.69        | 31.21        | 17.41        |
| An ADHD diagnosis is helpful for a child  | Male          | 16.81        | 32.24        | 27.39        | 23.56        |
|   | Female        | 37.58        | 27.81        | 18.90        | 15.71        |
| An ADHD diagnosis is stigmatizing for a child   | Male          | 18.04        | 30.44        | 28.86        | 22.66        |
|   | Female        | 17.62        | 37.37        | 27.39        | 17.62        |
| Children with ADHD misbehave because they do not want to follow the rules                       | Male          | 15.33        | 30.10        | 29.65        | 24.92        |
|   | Female        | 24.84        | 39.91        | 18.90        | 16.35        |
| Parents seek ADHD diagnosis as an excuse for their child's bad behavior                         | Male          | 12.51        | 28.86        | 30.78        | 27.85        |
|   | Female        | 11.25        | 20.81        | 26.96        | 40.98        |
| An ADHD diagnosis relieves families from stress and supports problem-solving                    | Male          | 18.71        | 30.10        | 28.07        | 23.12        |
|   | Female        | 22.93        | 39.70        | 21.02        | 16.35        |
|   |               |              |              |              | 22.43        |
| The etiology of ADHD lies in a predominantly genetically caused cerebral developmental disorder | Male          | 16.91        | 32.81        | 27.85        |              |
|   | Female        | 19.32        | 39.06        | 22.71        | 18.91        |
| Chaotic and dysfunctional family is the etiology of ADHD  | Male          | 18.15        | 30.55        | 26.61        | 24.69        |
|   | Female        | 14.86        | 38.22        | 25.90        | 21.02        |
| ADHD can be caused by poor parenting practices  | Male          | 17.59        | 30.10        | 27.39        | 24.92        |
|   | Female        | 24.20        | 25.27        | 26.54        | 23.99        |
| I feel confident in dealing with patients with ADHD   | Male          | 14.99        | 30.66        | 29.10        | 25.25        |
|   | Female        | 19.74        | 26.96        | 27.61        | 25.69        |
| <b>Over all Responses (in Percentage)</b>   | <b>Male</b>   | <b>16.54</b> | <b>30.14</b> | <b>28.59</b> | <b>24.73</b> |
|   | <b>Female</b> | <b>23.85</b> | <b>31.16</b> | <b>24.34</b> | <b>20.65</b> |

It is evident from table 4, that less than half of the male teachers have negative attitude towards ADHD and the attitude of above half of the male teachers is positive towards ADHD. On the other hand, above half of the female teachers have negative attitude towards ADHD and below half of them have positive attitude towards ADHD.

**Table 5**  
*Independent Samples Test*

|                |                                      | Levene's Test<br>for Equality<br>of Variances |      | t-test for Equality of Means |         |                 |                    |                          |  |  |
|----------------|--------------------------------------|---|------|------------------------------|---------|-----------------|--------------------|--------------------------|--|--|
|                |                                      | F   | Sig. | t                            | Df      | Sig. (2-tailed) | Mean<br>Difference | Std. Error<br>Difference | 95%<br>Lower<br>Confidence<br>Interval | 95%<br>Upper<br>Confidence<br>Interval |
| Attitude R     | Equal<br>variances<br>assumed        | .952  | .329 | 8.663                        | 1356    | .000            | .09382             | .01083                   | .07257                                 | .11506                                 |
|                | Equal<br>variances<br>not<br>assumed |   |      | 8.530                        | 917.516 | .000            | .09382             | .01100                   | .07223                                 | .11540                                 |
| Mean_Knowledge | Equal<br>variances<br>assumed        | 19.494  | .000 | 1.977                        | 1356    | .048            | -.07488            | .03787                   | -.14916                                | -.00060                                |
|                | Equal<br>variances<br>not<br>assumed |   |      | 1.906                        | 864.552 | .057            | -.07488            | .03928                   | -.15197                                | .00222                                 |

It is revealed from table 5, that regarding attitude of male and female teachers the p value  $0.000 < .05$  which tells us that there is significant difference between the attitude of male and female teachers towards ADHD. While p value 0.048 is near to significance value of 0.05, hence it can be said that there is no significant difference between female and male teachers' knowledge about ADHD.

## Discussion

The results of this study support the results of the studies conducted at international level. In a result of a study conducted in Saudi Arabia it has mentioned that elementary school teachers had less knowledge about ADHD (Fahad & Yousef, 2021), these results are in line with the results of the current study. Further, findings of study in hand about teachers' knowledge of ADHD confers the findings of the study done in New South Wales, where it has been mentioned that government schoolteachers had lack of knowledge about ADHD. However, regarding attitude towards ADHD, results of this study are contrary to the results of the study conducted in New South Wales, where positive attitude of teachers towards ADHD has been reported (Sarah Mulholland, Therese M. Cumming, and Ji Hyun Lee, 2023). Regarding teachers' attitude and knowledge of ADHD, findings of this study support the findings of the study conducted in Turkey that teachers have poor attitude and have less knowledge in certain areas about ADHD (Akdag, 2023). Moreover this, the results about knowledge and attitude towards ADHD of this study are

somewhat against the findings of the study carried out in Iran, where moderate knowledge and attitude of teachers towards ADHD has been reported (Maede, Maryam Amidi and Zahra 2020).

Results of the study in hand support as well as contradict the findings of some studies carried at national level. For instance, findings of this study regarding teachers' knowledge about ADHD support and its findings about teachers' attitude towards ADHD it contradicts the findings of the study conducted in the district of Haripur, Khyber Pakhtunkhwa (Faizan, Shah, Seema and Naz, 2021). On the other hand, results of this study regarding teachers' knowledge and attitude towards ADHD contradict the results of the study conducted in Karachi, where, it has been reported that teachers had good knowledge and positive attitude towards ADHD (Mirza N, Nisar N, Ikram Z; 2017). This contradiction may be because of several reasons. It may be due to huge difference in nature of the locality and population, as Karachi is the oldest and biggest city of Pakistan as compared to Karak, or it may be because of variation in data collection tool and nature of the study. On the other hand, regarding difference in the attitude of male and female teachers, female teachers have more negative attitude towards ADHD as compared to the male teachers. Hence findings of this study are similar to the findings of the study conducted by Mirza, Nisar and Ikram (2017) in Karachi. As, they have reported that in contrast to male teachers, female teachers' attitude towards ADHD was more negative.

## **Conclusions and Recommendations**

Based on findings, it was concluded that a large proportion of teachers of both genders had low level of knowledge regarding ADHD. Although as compared to male teachers' female teachers had very less knowledge about ADHD however statistically no significant difference was found between the knowledge of male and female teachers about ADHD. Significant difference between the attitudes of female and male teachers towards ADHD was found. Male teachers had moderate positive attitude while female teachers had moderate negative attitude towards ADHD. These results indicate that the need exists to educate teachers regarding basic and necessary information of ADHD.

To enhance knowledge of teachers about ADHD and enable them for treating ADHD children with ADHD in formal schools of general education, conduction of continuous workshops for the in-service teachers were recommended to be held periodically. Teachers' training programs with inclusion of special education course was recommended to be mandatory for induction of new teachers in the schools of general education. Awareness campaigns about ADHD through mass media were also recommended. For the development of positive attitude of teachers towards ADHD, provision of

professional and psychological support by administration and policy makers was recommended. Further studies for identifying the practices of teachers about dealing students with ADHD in schools are recommended to be conducted. Similar studies are recommended to be carried on in other areas across the country. It was recommended for further studies to investigate the knowledge and attitude of private school teachers towards ADHD.

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