

Interventions for Students with Attention Deficit and Hyperactive Disorder at Elementary School Level

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Abstract

The main purpose of this research was to gauge students' attention deficit and hyperactive disorder (ADHD). Major objectives of the study were (a) to measure the prevalence of ADHD among elementary students in mainstream education classroom; (b) to gauge the types of interventions that teachers are using to handling students with ADHD in mainstream education classrooms and (c) to compare the public and private sector school teachers' understanding about the prevalence of students' learning difficulties in mainstream classrooms. The nature of the study was descriptive by using quantitative research approach. 200 teachers both from public and private schools were selected as a sample of the study by using stratified sampling technique. Three different questionnaires were used to collect information from the participants after establishing reliability and validity. Gathered data were analyzed with statistical techniques such as t-test through SPSS. The outcomes of the study specified that although mainstream classroom teachers had some idea of the learning difficulties but they were not much aware of the causes of learning difficulty (due to ADHD). Furthermore, the prevalence of ADHD was more observed in government sector classes. Most of the teachers only changed the physical arrangement of the class to deal with problematic behavior of students. It is due to less knowledge about any other intervention. It is therefore recommended that mainstream teachers may be supported with professional training to deal with ADHA students.

Keywords: Learning difficulties, teacher education, teachers' training, teaching interventions, attention deficit and hyperactive disorder, main-stream classrooms

Introduction

Today mainstream classrooms are becoming increasingly assorted with gifted students, culturally diverse and students with learning difficulties (Cole, 2008). Students with learning difficulties often spend too much time in mainstream classrooms without

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significant academic achievements, which have negative effects on overall development. Children having learning difficulties can be better educational and social performer and can be trained to circumvent their learning difficulty (Cook & Friend, 2010). With the appropriate help, early identification and behavioral interventions children having learning difficulties can acquire knowledge and education successfully (Barkley, 2015). There are several ranges of learning difficulties as Language Processing Disorder (LPD), Non- Verbal Learning Disability (NVLD), Visual Motor Deficit, Auditory Processing Disorder (APD), Dysgraphia, Dyscalculia, Dyslexia, Dyspraxia, Retention and Attention Deficit Hyperactivity Disorder (ADHD) (Pelletier, Ahmad, & Rourke, 2001). Among all learning difficulties in early age children, ADHD is the most frequently experienced learning difficulties. The phrase "Attention-Deficit/Hyperactivity Disorder" is typically shortened as "ADHD." The major symptoms associated with ADHD include an incapability to keep continuous attention and focus, developmentally unable to demark level of suitable and unsuitable levels of activity, particular impulsivity and spontaneity (Schachar, 2009). Furthermore, ADHD can be defined as a disorder that comprises trouble in remaining attentive and paying close concentration, struggle in self-control and normal activity.

ADHD like symptoms appearance may happen over the passage of many months, frequently with the indications of overactivity and impulsiveness preceding those of daydreaming, which may not arise for a duration of a year or more. Usually, the first detection of ADHD among students is during their pre-school years. For the students having ADHD, it is very difficult to stay focused on the assigned task and control their behavior according to the situation. Also, it is internationally assessed that the percentage of children have ADHD issues is between 3 to 5 percent. Therefore, it can be inferred that in a classroom having the strength of 24 to 30 children, it is probable that at least one student will have ADHD (Corkum, McKinnon, & Mullane, 2005; Pfiffner & Haack, 2014). Moreover, professional subcategorize ADHD into following three types: main hyperactive/impulsive type (have issues of notable inattention), main inattentive type (have issues of notable hyperactive-impulsive presentation) and ADD type (have combined issues of hyperactive-impulsive and inattentive type (Martel, 2016).

Issues with academic productivity and outcome can mainly be associated with the central signs of Attention Deficit Hyperactivity Disorder (ADHD). Child's academic productivity and performance are usually correlated to his/her skill to perform the task properly and on time, without minimum distraction (D. L. Anderson, Watt, Noble, & Shanley, 2012). Such talent allows a student to obtain the required material, successfully complete tasks, and contribute to classrooms doings and deliberations. When a child demonstrates ADHD associated behavior it may include difficulties in keeping normal social relationships, both with family and class fellows, poor academic performance, sluggish or daydreaming behavior if the proper intervention were not applied (Evans, Sibley, & Serpell, 2009).

Teachers spend most of the time with children out of the academic year. Since teachers deal with diverse types of children having different family and financial backgrounds, they also acquire information how students naturally behave in classrooms circumstances and what level of concentration, persistence, and self-control of sentiment in particular. Furthermore, teachers are usually the first ones to diagnose or identify ADHD in students. Therefore, when they perceive something unusual or abnormal in the students, they must take up well established and approved plan to manage with this type of students (Mulholland, Cumming, & Jung, 2015).

Suppose as a teacher employed in a school environment and having a student with a deficiency of concentration, is often confused, or is very hyperactive. Here the question arises that how do mainstream education classrooms situations respond to specific differences and needs of a student? Where does the teacher begin to help this student? How willingly do teachers modify their method of teaching and strategies; how readily do they modify approaches? What adjustments can be implemented to support this student in his/her academic success and achievement? These are the major questions posed by numerous general classroom teachers and the response is nothing. The most vital thing is to focus on the specific needs of the individual first and then deal with the disorder (Pfiffner & Haack, 2014).

The majority of researches, however, have concentrated on medical approaches to treat ADHD students with very little attention being given to the ADHD students in mainstream general classrooms (C. J. K. Anderson, Klassen, & Georgiou, 2007). In fact, ADHD is an unidentified domain of mainstream education and children with ADHD have most of their day in general education settlement. Several studies have reported that teachers could not successfully teach students with ADHD due to different factors, one is teacher's lack of awareness about learning the difficulty of ADHD in mainstream classrooms (Andersen, Nissen, & Poulsen, 2016). Because of lack of knowledge, most teachers consider ADHD only as a special education topic. Here in Pakistan, there is very little or no work is done in this field. In general classrooms, teachers cannot categorically identify ADHD problems in students. They can report you what they have perceived, experienced, but after that, you would need to consult professional to assess your child to understand if he has specific symptoms of ADHD issue or it is something else.

The Current Research

The current research examined the “Interventions for Students with Attention Deficit and Hyperactive Disorder at Elementary School Level:” Researchers had established theoretical bases of the current study on Skinner’s behavior management theory provided techniques for behavioral modification to develop teaching interventions for the handling of ADHD in the public and private sectors schools.

Theoretical Framework

During teaching, teachers are facing different challenges in managing the learning difficulties of the students. Learning difficulties defined as the difficulties that students face during the learning process. There are several types of learning difficulties; one of them is Attention Deficit and Hyperactive Disorder (ADHD). It is the general observation that in the school's situation there are students who have less concentration in class, is very hyperactive, or is often disorganized. All these deficiencies create discipline and class management problems. In this respect Skinner's Behavior Management Theory and Attention Span theory are the major theories that deal with classrooms management. Skinner's behavior management theory provided techniques for behavioral modification. The behavioral management theory is usually referred to as a human social activity because it directly influences human behavior with others (Mills, 2007). Behavioral theorists believed that knowledge of various organizational processes including motivation, conflict, expectations, and group dynamics are obligatory. By improving motivation and reducing conflict desired behavioral outcomes can be attained. Teachers can implement behavioral management theory in classrooms setting for managing students' behavior. Behavioral management techniques can be used by teachers that may enable them to control students' behavior and form a vigorous and creative learning environment (Grining et al., 2010). In addition to other characteristics of teaching, teachers' character and authentic process of teaching have a direct effect on the learning outcomes. In the selection of a specific management technique teachers have to care about individual differences of the learners, and school policy. What may be suitable for a single person may not be suitable for another or it is likely that a school's approved teaching procedure may not permit for a teacher's precise behavior management training? Furthermore, behavioral management has several approaches such as Moderate Approach, Assertive Discipline Approach, and Student-Centered Approach, but these are not incompatible to one another. There can be overlapping among different behavioral management systems keeping in view the teacher's preference and learning context (Grining et al., 2010). As attention span denotes to the amount of time a person can continuously keep focused attention on a single task or thinking process (Cornish & Dukette, 2009). Attention span can range from a few seconds to several minutes, depending upon the individual, task, surrounding and numerous other factors. The average value ranges from five to twenty minutes, even though it can be prolonged with appropriate use of several authentic mental techniques. There are signs that attention span is badly affected by the initial and extended exposure to mobile phone, television and computer screens, although this has not been decisively shown in the literature. Moreover, the attention span is also decreased by ADHD. Span theory uses the following goals:

- i. To find the dependency on individual personality and developmental differences factors in psychometric span ability.

- ii. To build approaches to task analysis (mutually, Task Analysis of Span Load or TASL) which will extend to determinable hypotheses regarding the relationship between span ability and span load.
- iii. Practical Implementation of span theory.
- iv. Building scientific classification of tasks and responsibilities.

Research Objectives

Following were the objectives of the study (a) to measure the prevalence of ADHD among elementary students in mainstream education classroom; (b) to gauge the types of interventions that teachers are using to handling students with ADHD in mainstream education classrooms and (c) to compare the public and private sector school teachers' understanding about the prevalence of students' learning difficulties in mainstream classrooms.

Hypothesis

There is a significant difference between government and private sector teachers' realization about the prevalence of learning difficulties in mainstream classrooms.

Rationale of the Study

Generally ADHD is considered as a special education problem. Commonly the concept of ADHD is taken as a problem of special children. The emphasis of this research was children who were studied in mainstream classrooms and facing learning difficulty of ADHD. Until the present time, there is a dearth of research conducted, concerning to what is the knowledge and awareness of mainstream education teachers about ADHD and how they can deal to students in mainstream classes and what sort of professional training they have had. This study had also focused on the interventions which a teacher could use to deal with ADHD students in main stream classes.

Methodology

The research was descriptive in nature; the survey was used to gather data from teachers teaching at mainstream elementary level classes. The population of this research includes all elementary level teachers of government and private sector schools of Rawalpindi and Islamabad. A stratified random sample of 200 elementary level (6th, 7th and 8th) teachers was designated from government and private sector elementary schools of Rawalpindi and Islamabad (two major cities of Pakistan).

For the current research study, three self-developed questionnaires were used. One questionnaire deal with the awareness of teachers about ADHD, second deals with the prevalence of ADHD in mainstream classrooms and third was used to measure the types of interventions used by teachers for the handling of students with ADHD. Sufficient information was provided about the purpose of the study.

Researcher has personally visited to elementary school teachers which were included in the sample, and distributed questionnaires to relevant sample. Filled in questionnaires were collected back by researcher at the same day of administration of the questionnaires.

Data Analysis and Results

Collected data were analyzed by using suitable descriptive statistics including mean, Standard deviation, and t-test by using Statistical Package for Social Sciences (SPSS) software (Norris, Qureshi , Howitt, & Cramer, 2013). Following are the results of the study:

Table 1

Do teachers of mainstream classrooms have awareness about the learning difficulties of the students? (N=200)

Responses	Frequency	Percent (%)
Yes	130	64%
No	70	35%
Total	200	100.0

Table 1 is about the percentage of teachers' awareness regarding the existence of students with learning difficulties in mainstream classrooms. Data in table reveals that 64 percent of teachers are aware of the presence of students with learning difficulties in mainstream classrooms while 35% teachers have no idea concerning the presence of students with learning difficulties in their respective mainstream classrooms.

Table 2

What type of learning difficulties are perceived by the teachers among the students of mainstream elementary classrooms? (N=200)

Learning Difficulties of the Students	Frequency	Percent
Paying no attention in listening to teachers' instructions (difficulty in perceiving auditory information)	52	26%
Dyscalculia	13	6.5%
Dysgraphia	9	4.5%
Dyslexia	7	3.5%
Learning processing disorder	7	3.5%
Nonverbal learning disability	10	5%
Visual motor Deficit	10	5%
Dyspraxia	8	4%
Memory	14	7%
Attention Deficit and hyperactive disorder	70	35%

Table 2 illustrated the responses of teachers about the presence of students with learning difficulties. Outcomes revealed that about 35% students are with ADHD, while 26 % students are paying less attention in listening to teachers' instructions, 7 % are with short of memory and 6.5 % students are having dyscalculia. The learning difficulties of Nonverbal learning disability and Visual Motor Deficit are fifth highest learning difficult with the percentage of 5. The sixth highest level of learning difficulty faced by teachers in the classrooms is dyspraxia with the percentage of 4 while Dyslexia and Learning processing disorder is observed at only 3.5%.

Table 3

What facets of the ADHD Students are being observed by teachers in Mainstream Classrooms? (N=200)

Characteristics	Frequency	Percent
Be disorganized	23	11.5%
Lack of focus	44	22%
Get up frequently to run around or walk	3	1.5%
Have trouble playing quietly or doing silent hobbies	5	2.5%
Talk excessively	13	6.5%
Impatience	60	30%
Have a hard time waiting to react or talk	8	4%
Have a hard time waiting for their turn	26	13%
Start conversations at inappropriate times	18	9%

Table 3 gives details about the teachers' perceived facets of ADHD students. From the table it is evident that 30 percent of teachers perceive impatience among students, 22 percent of teachers perceived lack focus among students, 13 percent teachers

perceived it is difficult for students to wait for their turn, 11.5 percent teachers facing difficulty of disorganization among students, 9 percent teachers perceived that students are talking at inappropriate time while in the classroom, 6.5 percent of teachers perceived that students are excessively talking in the classrooms, 4 percent teachers facing difficulty of reactive attitude of students in the class, 2.5 percent teachers facing difficulty of creating noise by students when staying quite is necessary for the class, 1.5 percent of teachers facing difficulty of frequently walking and running of students in the class during lecture.

Table 4

What types of interventions are being used by teachers while handling students with ADHD in mainstream elementary classrooms?

Type of Educational Interventions	Frequency	Percent
Physical arrangement	40	20%
Varied presentation of format and materials	27	13.5%
Use of prompts, cues, and attention checks	9	4.5%
Transitory academic tasks interspersed with passive tasks	7	3.5%
Peer tutoring	50	25%
Teacher attention	32	16%
Token economy	1	0.5%
Response cost	6	3%
Time-out from positive reinforcement	3	1.5%
Home-based contingencies	25	12.5%

Table 4 shows the percentage of teacher's management strategies with ADHD students in mainstream elementary classrooms. From the table it can be seen that strategy of Peer tutoring is used by 25% teachers, while 20% teachers rely on the strategy of Physical arrangement, 16% teachers are providing extra attention towards such students, 13.5 % of teachers use varied presentation formats and materials, Home-based contingencies are given by 12.5 % of teachers, 4.5% of teachers use cues, prompts to check the attention and only .05% of teachers are using a token economy to handle ADHD' in classrooms.

Hypothesis

There is a significant difference between government and private sector teachers' awareness about the prevalence of learning difficulties in mainstream classrooms.

Table 5
Comparison of Mean and Standard Deviation of teachers scores on the prevalence of ADHD students in mainstream classrooms in Relation with Variable School Sector (N=200)

Subscales	Government Sector (N=128)		Private Sector (N=72)	
	M	SD	M	SD
Inattentive	40.9	1.24	36.6	2.1
Hyperactive	15.4	2.1	15.7	2.3
Impulsive	9.6	1.2	9.4	1.2
Total	65.9	4.54	61.7	5.6

Table 5 describes the Mean and SD to teachers scores for the prevalence of ADHD students in mainstream classrooms in relation to the variable sector. It is evident from this table that the existence of inattentive and impulsive behavior students is more in the government sector school and the existence of hyperactive behavior students is more in private sector schools. From the table, it appears that on the whole teachers of the government sector have more ADHD students in their classrooms as compared to private sector school teachers.

Table 6
t-test of teachers scores on the prevalence of ADHD students in mainstream classrooms in Government and Private Sectors Schools (N=200)

Source	t	Df	P value	95% Confidence Interval of the Difference	
				Lower	Upper
School sector	39.969	199	0.00	1.29	1.43

To test this hypothesis that there is a difference between government and private sector teachers' awareness about the learning difficulties of learners in the mainstream classrooms two sample t-test applied and value of t is 39.969 and its P-value is 0.00 which is less than the level of significance 0.05 so it is concluded that there is a difference between government and private sector teachers' awareness about ADHD as clear from Table 6.

Discussion

The result of the study showed that teachers were much aware of the learning difficulties of their students but some teachers have not noticed the students' learning difficulty. Schachar, & Russell (2009) were of the view that most of the teachers were aware of poor classroom conditions. Most of the teachers have observed the learning difficulty of ADHD in their classrooms and mentioned that most of the time students have less focus during classes. Students mostly show unwanted behavior when they are in the class and during the lecture. During the lecture, teachers faced more the challenges

of discipline. Results of the study displayed that most of the teachers observed the prevalence of ADHD among students.

Results of the study confirmed the difference and shown that public sector teachers facing more ADHD issues than private sector teachers. One objective was related to the type of management and educational interventions that the teacher used in elementary classes to handle inattentive, hyperactive and impulsive behavior of students. The authors in the (Grining et al., 2010) of the view that that most of the teachers use the intervention of (capturing students' attention before giving directions) to handle inattentive students. To control the hyperactive students most of the teachers used the intervention of giving the students a break during performing tasks. From the results, it was established that most of the teachers use the intervention of (listening to others) to handle the impulsive behavior of students. The results assured that most of the teachers use this intervention to handle class having learning difficulties.

Conclusion

On the base of data analysis and results of the study, it is concluded that although teachers have awareness about the behavior of students and noted frequently the unwanted behavior but showing limited knowledge about learning difficulties. Despite this that in mainstream classrooms there is a great number of students with ADHD problems. A significant difference was found in the prevalence of students with ADHD in the Public and private sector elementary mainstream schools. On the whole teachers of the public sector have more ADHD students in their classrooms as compared to private sector school teachers. Most of the teachers were not aware of effective educational interventions to cope with students' undesired classrooms behavior. But on the basis of their own knowledge, most of the teachers are using the intervention of physical arrangement to deal with students having learning difficulties. The reason for a deficiency in awareness may be the absence of training of special short courses to address the learning difficulties due to ADHD.

Recommendations

On the base of results of the study following suggestions were provided to handle students having learning difficulties in the classroom:

- i. The teachers might have conscious about students each and every action/behavior in the class. He/ she may assess the learning needs of each learner during the learning process and making conscious use of various techniques of handling undesired behavior. Most of the time teachers face class organization problems. Before the beginning of the class, teachers may provide some type of advance organizers to make students to stay on organized and on task.
- ii. The teacher may have focused especially on learning the difficulty of ADHD. Have become more aware of the learning difficulty of ADHD, how it affects

- students and their level of learning. With proper awareness and constructive plan, the teacher may be able to deal with ADHD students in the classrooms.
- iii. To deal with students a teacher may be familiar with the attention span of students which is of 10 to 20 minutes for a normal student. The benefit of awareness about this plan will be for teachers and students. The teacher will be able to give learning difficulty students some short breaks during the task to break the monotony of task and class environment
 - iv. Students having some behavioral problems such as inattentive, hyperactive and disruptive behavior cannot concentrate properly on what have to do. To gain their great concentration teacher may define a properly detailed schedule of activities and also follow that schedule. The teacher may make a manageable plan that is very necessary to deal with ADHD students.
 - v. Teacher willingness and motivation for handling such children is very essential, willing teachers can observe such students just to stay informed about their behaviors. When the teacher comes to know that there is a student in their classrooms with ADHD then the teacher may keenly and continuously observe the behavior of ADHD students and also provide some counseling to the student and his/her parents. Teachers may frequently keep an eye on students' progress.
 - vi. Communication with parents is vital; parents may be in touch with school teachers regarding the academic performance of their children. Parent-teachers meeting may arrange regularly so the gap between both can be minimized. Parents may also join some work group to handle their children in a better way.

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