EFFECT OF TEACHING INTERVENTIONS ON ACADEMIC PERFORMANCE AND BEHAVIOURAL MANAGEMENT OF ATTENTION DEFICIT AND HYPERACTIVE DISORDER (ADHD) AT ELEMENTARY LEVEL

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ABSTRACT

Thesis Title: Effect of Teaching Interventions on Academic Performance and Behavioural Management of Attention Deficit and Hyperactive Disorder (ADHD) at elementary level

Major objective of this doctoral research is to develop interventions for higher academic achievement and behavioural management of elementary level ADHD students. Study has been conducted in two phases, descriptive and experimental. During phase I (descriptive) exploration of the phenomenon has been made in the light of teachers' awareness of the concept of ADHD, prevalence of ADHD students and various challenges faced by teachers in managing ADHD students at elementary level. Phase II (experimental in nature) has been designed to measure the effects of teaching interventions on the academic performance and behavioural management of ADHD students. Population of the study included elementary level teachers and students of Tehsil Rawalpindi. For ease of data collection study delimited to male and female elementary level schools of Rawalpindi only. For data collection, four research questionnaires developed through standard procedure. Pilot testing was conducted to establish the reliability and validity of research questionnaires. During phase I, for the exploration of phenomena data were collected from 200 teachers and 300 students. Stratified random sampling technique used to collect data from teachers whereas; data from students were collected through purposive sampling technique. Collected data were analyzed through Mean, Standard Deviation, t-test and Analysis of variance (ANOVA) through SPSS. Results revealed that most teachers have diminutive knowledge of ADHD. A significant difference has been found in the prevalence of ADHD among the private and public sector schools. On the basis of the findings, several teaching interventions developed which includes instructional, behavioural and physical classroom management interventions for better academic performance and behavioural management of ADHD students. In order to determine the effects of these developed interventions on academic achievement and behavioural management of ADHD students two separate experiments were conducted on 40 teachers and 30 students respectively. A significant difference was found in the pretest and post test scores of teachers (n=40) after imparting 5 days intensive training on teaching interventions. Significant differences were also found in the academic performance and behavioural management of experimental (n=15) and control group (n=15) on achievement test and behavioural check list, when students of grade 8th were taught subject of English compulsory through interventions for three months. Results illustrated that if proper awareness and training provided to elementary level teachers (building their capacity of handling ADHD students) it will ultimately enable ADHD students to meet the challenges of life (better academic purists, reduction of disruptive behavioural problems) effectively.

Keywords: Teaching Interventions, Academic Performance, Behavioural Management, Attention Deficit and Hyperactive Disorder (ADHD).

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LIST OF ABBREVIATIONS

ADD	Attention Deficit Disorder
ADHD	Attention Deficit and Hyperactive Disorder
AKOS-IV	Attention-Deficit Hyperactivity Disorder Knowledge and Opinion Survey
ANOVA	Analysis of Variance
APD	Auditory Processing Disorder
BASC-2	Behavioural Assessment System for Children
CDC	Center of Disease Control
d.f.	Degree of Freedom
DSM-V	Diagnostic and Statistical Manual of mental disorder
F	f ratio
IDEA	Individuals with Disabilities Education Act
KADDS	Knowledge of Attention Deficit Disorders Scale
LD	Learning Difficulty
LPD	Language Processing Disorder
M	Mean
MBD	Minimal brain dysfunction
N	Number of Items
NASP	National Association of School Psychologists
NVLD	Non- Verbal Learning Disability
P	Probability value
R	Correlation
SD	Standard Deviation
ADD	Attention Deficit Disorder
ADHD	Attention Deficit and Hyperactive Disorder
ANOVA	Analysis of Variance
APD	Auditory Processing Disorder
Df	Degree of Freedom
F	f ratio

IDEA	Individuals with Disabilities Education Act
LD	Learning Difficulty
M	Mean
N	Number of Items
P	Probability value
R	Correlation
SD	Standard Deviation

IN THE NAME OF ALLAH, MOST BENEFICENT,

MOST MERCIFUL

All the praises and thanks be to Allah, who is Worthy of Worship, the Lord of east and west, the Cherisher and Sustainer of the worlds, the Lord of the heavens and the earth, most Gracious, most Merciful, the only Master of the day of judgment. You (Alone) we worship and You (Alone) we ask for help (for each and every thing). Guide us to the straightway. The way of those on whom You bestowed Your Grace, not the ways of those who earned Your anger nor of those went astray. (Ameen)

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DEDICATION

I dedicate my efforts to my loving Mother and supportive Father, who always guided me to choose a right path at every step of my life.

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CHAPTER-1
INTRODUCTION

Challenges associated with students' general mental health and emotional stability are increasing day by day. One of the many issues affecting students' mental and physical health is attention deficit hyperactivity disorder (ADHD). Classroom teachers commonly direct ADHD children to psychologists because of continued inattentive and/or disruptive behaviour in the classroom (Barkley, 2006).

Facets of problems associated with the ADHD are widespread in normal school going children. It is estimated that, around 3% to 7% of school-aged children have ADHD (American Psychiatric Association, 2000; Barkley, 2006). Most of the time, teachers working in the general education schools' system are not familiar with this concept, and as a result, such adolescents are more likely to experience academic challenges and develop more serious behavioural issues. According to research, ADHD is one of the most commonly diagnosed children diseases (Myrick & Webb, 2003; McKinley & Stormont, 2008). Due to lack of awareness, teachers are unable to detect the causes of behavioural patterns which are frequently exhibited by ADHD students in academic context. Therefore, they are facing hardships in managing such behaviour in effectual manners.

Commonly Children have ADHD problem moves toward leaving the schools because of their instable behaviour and maladjustment of teachers' treatment with them (Nigg, 2006). ADHD impacts children performance at school. Low achievement in studies, maximum nonfulfillment of tasks, aggressiveness, and difficulties in forming friends. These all complications are linked to students' inattention, hyperactivity, and impulsivity (DuPaul & Stoner, 2003).

The ADHD children are facing furthermost difficulties in "sustaining attention and persistence to assigned tasks" (DuPaul & Stoner, 2003). Such behaviours can be seen in situations requiring child to maintain attention to class work, homework and any other chores related to academics (feeling as if dull or boring tasks). Such behaviour is one of the leading factors in the underachieving academic pursuits. When guidelines given ADHD adolescents to sit quiet, give attention in class, be attentive on class tasks, and participate in classroom discussions, they frequently cause problems. For managing such behavioural issues of ADHD students, teachers can take assistance from special education teachers / professionals (Myrick & Webb, 2003).

ADHD is such a big behavioural issue at the elementary school level, many people wonder how to help the ADHD students in the classroom. As it is the responsibility of educator to give sensible alternatives. Teachers are confused how to provide scaffolding to ADHD students in a classroom. (McKinley & Stormont, 2008).

According to Myrick and Webb (2003), one of the most difficult aspects of ADHD is not knowing what to do, but doing what they already know. The long-term effects of medication on students with ADHD are more or less same as those who did not get treatment.

In such a context, responsibility comes to school professionals. Educational institutions must be empowered to handle such cases. Proper awareness and assessment of such behaviour can lead towards its effective management. The involvement of ADHD students is heavily influenced by all school personnel. School personnel should be prepared to speak with parents and others about the assistance and resources available to ADHD students (DuPaul & Stoner, 2003).

The maximum quantity of classroom difficulties and problems connected with ADHD that often create conflicts among teachers and peer group (ASCA, 2003). If teachers working at elementary level are trained properly to organize such behaviour through conscious efforts (of involving parents, psychologists and peer group), it will certainly build their capacity. Therefore, in the present research need analysis was performed by keeping in view the teachers' awareness of the concept of ADHD, prevalence of ADHD among the students of elementary education, etc. Above all interventions were also developed for handling behaviour of ADHD students which would eventually create conducive classroom environment for all students.

1.1 Background of the Study

At present, elementary classrooms are becoming crowded with diverse learners including talented, ethnically diverse and students with learning difficulties. This study is focused on ADHD students who are experiencing various forms of learning challenges. They frequently work hard and spend ample time in elementary school without achieving notable academic achievements, and as a result, their whole social and behavioral development suffers. Students with learning troubles and problems could achieve significant levels of achievement if they were taught coping techniques to deal with their learning difficulties. Children with learning disabilities can reach great

levels of achievement if they are identified early, given specific help, and get appropriate interventions (Lange, Reichl, Lange, Tucha & Tucha, 2010).

Auditory Processing Disorder, Motor Deficit, Dysgraphia, Dyslexia, Language Processing Disorder, Dyscalculia, Non-Verbal Learning Disability, executive functioning, Memory Visual Perceptual/Visual Dyspraxia, and Attention-Deficit and ADHD are only a few examples of learning challenges. ADHD is the most commonly identified learning issue out of all of them (Russell, 2009). An inability to focus and pay attention, as well as overexcitement, overreaction, and a lack of self-control, are all symptoms of ADHD (Russell, 2009). As a result, it's critical to research the prevalence of ADHD among primary students and equip them with appropriate interventions that may be implemented in normal classroom settings.

The assessment of the prevalence of ADHD is difficult; symptoms of ADHD may appear over several months, and impulsivity, hyperactivity, and inattentiveness may also be present. Inattentiveness symptoms may not develop for a year or even longer. ADHD is usually visible in the early grades of school, among all types of learning challenges. These children have no understanding of how to control their own behavior. Children with ADHD are estimated to constitute between 3% and 5% of the population. This suggests that at least two ADHD youngsters are likely to be present in a classroom of 48 to 60 students.

There are three forms of ADHD. It comprises inattention (such as a lack of focus and attention), hyperactivity (such as being overly active or restless), and impulsive behavior (mostly hyperactive/impulsive behavior) (Corkum, McKinnon, & Mullane, 2005; Pfiffner & Haack, 2014).

The primary symptoms of ADHD are inattentiveness, impulsivity, and hyperactivity. Most of the times in the classroom, it is difficult for the teacher to control the Disruptive behavior of ADHD children that may create a delay in a child's academic development (Kos, Richdale & Hay, 2006).

A child's academic achievement is usually determined by his ability to complete assignments and comprehend class teacher directions with few interruptions. A child's abilities enable him or her to gain the necessary knowledge, complete tasks, and actively participate in classroom activities. If appropriate instructional techniques and interventions are not implemented for a kid with ADHD, he or she will struggle in school and have difficulty forming relationships with other classmates (Evans, Sibley & Serpell, 2009).

While dealing with learning difficulty, students are the most important thing to be considered. Their individual personality and behavioral problem should be looked into as well (Pfiffner & Haack, 2014). Before devising any intervention, it is important to learn about the phenomenon of the prevalence of ADHD students at elementary school level so that effective teaching interventions for the educators in the local context of the geographic region can be furnished.

1.2 Statement of the Problem

It has been observed that in schools some students are showing different behaviour which is in fact undesired. They seem to be hyperactive, impulsive, disorganized and having difficulties in following classroom norms. Such students can be labeled as ADHD if diagnosed through test. The concept of students with ADHD is researched well in the Western context. Most of the studies are based on medical model and used to treat through drugs therapy. Psychologists and educators could play a role to manage the behaviour of ADHD without drugs through targeted management of students' behaviour if detected early. Teaching to elementary level is really challenging for the teachers due the developmental changes that occur in the behaviour of students. If students at this stage have adjustment issues due to ADHD, then it will be more challenging for the teachers to retain such children in classrooms. Teachers play central role in imparting education; existence of such students in class can enlarge the role of teachers. In reality, such students are a source of disturbance for the rest of class and face humiliation of all concerned. Many of them due to repeated failure may quit education and increase the rate of school dropout. Blaming or labeling is not a solution of anything. System of education may develop educators who are well aware and well trained to manage the behaviour of these students. Such students are having learning difficulties due to which they do not go well with the rest of class.

In the Pakistani context, most of the teachers have very less information or awareness about the concept of learning difficulty of ADHD, so they cannot put extraordinary efforts to motivate and teach such learners. In fact, they are major complainants of such students. Therefore, this area needs attention of the researchers. Keeping in view that lack of research in his area, the present research has been designed.

This study was to conducted to devise effective teaching interventions for the academic achievement and behavioural management of students with ADHD studying at elementary level classes.

1.3 Objectives of the Study

Objectives of this study are as under:

1. To explore the extent of physical facilities at elementary schools.
2. To explore teachers' awareness about learning difficulties of elementary level students.
3. To explore the prevalence and behavioural problems of ADHD students at elementary level.
4. To measure teachers' demographic variations of age, gender, qualification, sector, experience, grade and strength of the class in relation to the prevalence of ADHD students in their classes.
5. To measure the effect of students' demographic variations of gender, grade, sector, fathers' qualification, fathers' profession, mothers' qualification, mothers' profession, monthly income of family and number of brothers and sisters in determining the extent of ADHD.
6. To find out various challenges that are being faced by teachers in managing ADHD students at elementary level.
7. To develop interventions for higher academic achievement and behavioural management of elementary level ADHD students.
8. To measure the effects of teaching interventions on academic performance and behavioural management of ADHD students.

1.4 Rationale of the Study

Literature in the field of ADHD acknowledges the fact that teachers, who are working in general education and dealing with several categories of students, have little information, expertise and knowledge about ADHD and prevalence of ADHD students in their classroom settings. That is why they are unable to use any planned, effective and suitable teaching interventions for ADHD students in the Pakistani context. Teachers' lack of information about this topic can lead many students to failure, low academic achievement, school dropout, challenge for the rest of class fellows and juvenile delinquency. Teachers' training and awareness is very important because such behaviour is common in schools specifically at the elementary level. The aim of this study was to establish some teaching intervention that would be helpful for teachers, enabling them to modify the special type of instructional plans, and keeping in view the exceptional needs and requirements of students having ADHD in their classrooms.

1.5 Theoretical Framework

Elementary school teachers deal with a variety of students who may struggle with learning and adhering to classroom rules. This could be due to lack of focus but is also viewed as lack of intelligence. These difficulties of knowledge can hinder students in the acquisition of the learning new skills, knowledge and desired bahaviour. Out of several learning difficulties, the most observable learning difficulty is ADHD (Russell, 2009). It is the general observation that in schools many students are showing less concentration towards the acquisition of knowledge. He further stated that in elementary classrooms some students are exhibiting characteristics of ADHD, i.e., hyperactive and disorganized. The behaviour of such students is not only influencing their learning badly but also creating problems of management for the rest of fellows. Such students are gradually excluded from learning process (Russell, 2009).

For managing such behaviour in effective way, institutions are looking at the teachers and expect that job of the teacher does not end when the dismissal bell rings at the end of school day. Today teachers ought to act like an educator, mentor, counselor, psychologist and crowd control professional. Teachers are performing various duties and interesting duties of the teachers are expected beyond teaching; they have to stand out in the rain to ensure students boarding on right buses and get into cars with pre-approved persons. Along with this, the system expects that when students leave, teachers can plan to meet parents or prepare their class assignments for day ahead. They stay up late planning lessons and grading papers. In fact, teachers, real professionals, who can take pride of their ability to multi-tasking while efficiently managing a classroom of students.

For the management of the ADHD behaviour, several theories exist in the literature, such as social learning theory of Bandura, social construct theory and John's positive classroom management theory. Applications of these theories can facilitate teachers' management skills. These theories deal with various practices of classroom control through which learning difficulties of students exhibiting behavioral problems can be minimized. For the preset research, Positive classroom management theory presented by Fredrick Jones in 2000 is used as it provides basis of classroom management to the teachers.

Positive classroom management theory (David & Dianne, 2009) focused more on positive classroom management of the students behaviour. It focused on that a teacher will show through his/her actions what he/she wants from students. The

presence of understandable and applicable rules in the class is very necessary for students to dictate and mold their behaviour as per expectations and third one major point in this theory is what alternative plans will be used when things are not going according to their plan.

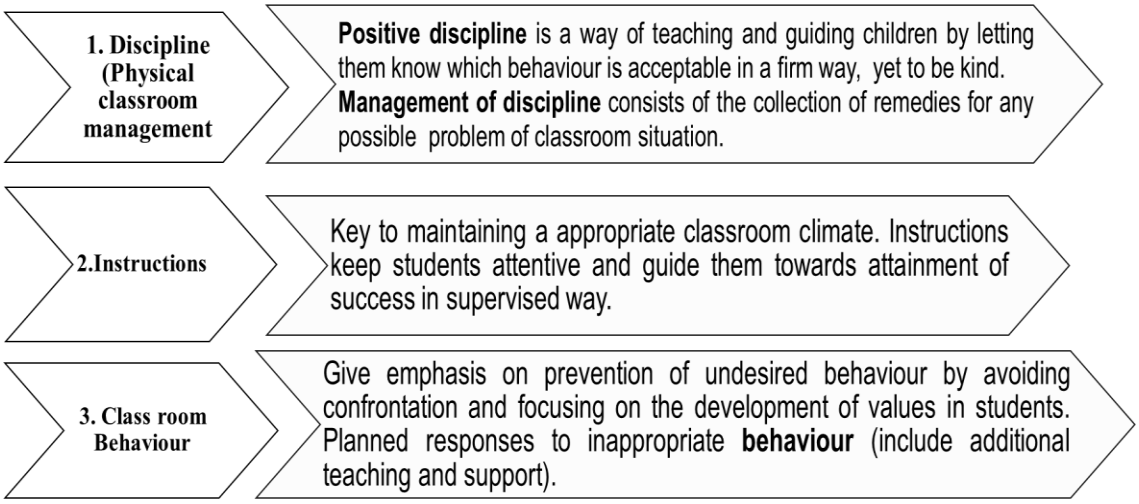

Figure 1.1 Jones' method of classroom management theory

As shown in Figure 1.1, Jones' method of classroom management is a comprehensive approach that claimed positive classroom management. This theory is based on three elements: discipline (physical classroom management), instructions and classroom behaviour (Jones & Jones, 2013). His method was built on five groups of talents that teachers must possess in order to keep students focused on the job at hand. It entails classroom reorganization to prevent misbehavior, effective use of body language to set limits, teaching by say, see, and do, incentive-based responsibility training, and individual student-based assistance (Charles, 2014).

This theory enables teachers to use proper interventions through which students can learn better to control their behaviour if they are assisted by trained teachers. John's positive classroom management theory seems effective and can easily be implemented in the elementary classes. There is no disagreement to this statement, and no other point of view; it is widely accepted that a teacher can influence a student's behavior through body language, various rewards, and student support. Self-control is a critical skill that equips students with the skills they'll need for future success and to play a constructive role with positive behavior. According to him, active student participation in lectures can prevent a lot of misbehavior and disciplinary concerns.

1.6 Null Hypotheses

Following null hypotheses were developed to test the research objectives and answer the research questions.

1. There is no significant difference in the prevalence of ADHD students in the classes of male and female teachers.
2. There is no significant difference in the prevalence of students having ADHD in the classes of younger teachers' (20-30yrs. / 31-40yrs.) and older teachers' (41-50yrs).
3. There is no significant difference in the prevalence of ADHD students in the classes of teachers having different qualification levels.
4. There is no significant difference in the prevalence of ADHD students in the public-sector and private sector schools.
5. There is no significant difference in the prevalence of the ADHD students in the classes of teachers having diverse work experiences.
6. There is no significant difference in the prevalence of students having ADHD in early elementary (6^{th}, 7^{th}) and late elementary (8^{th}) classes.
7. There is no significant difference in the prevalence of ADHD students in the elementary level classes having diverse students' strengths.
8. There is no significant difference in self-awareness of male and female ADHD students studying at elementary level.
9. There is no significant difference in self-awareness of the students (about their own behaviour) studying at grade $6^{th,}$ 7^{th} and 8^{th}.
10. There is no significant difference in the self-awareness of the ADHD students of private-sector and public-sector elementary schools.
11. There is no difference in the self-awareness of children (ADHD) of more qualified fathers and less qualified fathers.
12. There is no difference in the self-awareness of ADHD children of more qualified and less qualified mothers.
13. There is no significant difference in the self-awareness of ADHD students whose fathers employed in the private and public sector organizations.
14. There is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women.
15. There is no significant difference in the self-awareness of ADHD students belonging to various income groups.

16. There is no significant difference in the self-awareness of ADHD students having less number and more number of siblings.
17. There is no significant difference in the pre-training and post-training scores of elementary teachers (about knowledge of teaching interventions of handling ADHD children).
18. There was no significant difference in the score of ADHD students of experimental group and control group on classroom achievement test.
19. There was no significant difference in the score of ADHD students of experimental group and control group on behavioural rating scale.

1.7 Research Questions

In order to evaluate the awareness and knowledge of elementary school teachers regarding ADHD in the Pakistani main school system, the following research questions were developed in this study:

1. What is the perception of teachers about elementary physical classrooms condition?
2. Is there any difference in physical condition of the public and private elementary classrooms?
3. What is the level of awareness and knowledge of teachers regarding the elementary classrooms students learning difficulties?
4. How many types of learning difficulties have been observed in the elementary classroom by teachers?
5. What is the prevalence of ADHD among students of elementary classes?
6. What kind of behavioural problems are exhibited by ADHD students of elementary classes?
7. What kinds of challenges are being faced by teachers during teaching to elementary students?
8. What kinds of management interventions are adopted by teachers to handle ADHD students in elementary classes?
9. What is the level of self-awareness of elementary students about the extent of their ADHD Behaviour in Classroom?

1.8 Significance of the study

The main focus of this study was to develop interventions for better academic achievement and behavioural management of ADHD students of elementary level.

Underlying intentions were enabling practitioners (i.e., teachers and Principals) for handling disruptive behaviour of ADHD students effectively. The findings of this study facilitate teachers; by applying these interventions, they may be able to develop individualized learning plans according to unique learning needs of the students when required.

The findings of study can also be helpful for students as it may create self-awareness about various aspects of their behaviour which is hampering their learning. Self-awareness can motivate students for better self-management and self-regularizations which can ultimately enhance academic achievement and adjustment in classroom situation.

The Findings of this study may also be helpful for parents; they may also be able to understand the causes of low academic achievement and disruptive behaviour of their children and for better academic outcomes of their children; they may also have to work along with teachers.

The findings of the study may provide guideline to policymakers, curriculum experts, researchers and educationists in understanding the underlying causes of students' undesired disruptive classroom behaviour; therefore, they may include this concept in curriculum of teacher education. In addition, these findings may also be helpful for teacher training institutes. They can select effective teaching interventions for the better academic achievement and behaviour management of ADHD students who are also a component of pre-service and in-service teachers training and professional development programs.

1.9 Delimitations of Study

1. Due to time and resource constraints, the study was delimited to Public and private sector schools of (male and female students) Tehsil Rawalpindi.
2. The data were collected through four self-developed research questionnaires:

Four questionnaires were developed for this study.

I. A questionnaire for Teachers' Awareness about Students with ADHD.
II. A questionnaire for Teachers 'Awareness about the Prevalence of ADHD Students in elementary level classrooms
III. A questionnaire related with Interventions used by teachers to manage ADHD students' problems and issues in elementary level classrooms.
IV. Self-Awareness of ADHD Students Behaviour Questionnaire.

1.10 Operational Definitions

1.10.1 Attention Deficit Hyper Active Disorder

The term attention deficit hyperactive disorder (ADHD) is used to describe behaviour that is disruptive in nature. Children who have been diagnosed with ADHD or who have been branded as having the disorder may exhibit a typical behavior, such as problems paying attention (struggle to focus on the task and remain confused every time), Hyperactivity (lack of control over body, constantly moving their feet, hands, and body, inability to sit calmly and relax, indicating extreme restlessness) and impulsivity (related to impassions, moving and performing actions without thinking, lack of control over actions and responses, inability to wait for own turn) are two terms used to describe people who are hyperactive or impulsive (Mulholland et al., 2015).

Such children are facing difficulties in many spheres of life as compared to other children. Resultantly, they receive criticism and negative feedback from teachers, peer groups and parents. Due to their inherent behaviour, they are unable to meet the expectations of people around them (DuPaul, Gormley & Laracy, 2013).

In this study for the identification of ADHD students, a 28 items Behavioural scale was used to measure ADHD behaviour among students.

1.10.2 Teaching Interventions

Teaching interventions are a customized set of instructions or a series of activities meant to help children with specific behavioral challenges.

Today's teachers face difficulties in controlling student behavior in the classroom. Emotional and behavioral disorders impact 10 to 15% of children worldwide, according to the National Institute of Mental Health. Because of this, teachers have learned how to identify areas of need ahead of time, before kids fall behind. Teaching interventions provide teachers with pre-planned ways for addressing weak areas and help pupils improve their academic performance.

Effective treatments in this study refer to specific focused strategies for teachers to improve the behavior of ADHD pupils without the use of medication.

Instructional interventions, behavioural interventions and physical management interventions were developed to for better academic achievement and the behavioural management of students with ADHD.

1.10.3 Behavioural Management

Behaviour is basically the way an individual act towards any situation. Behavioral management is a process of altering the undesirable/ inadequate behaviour

with desired and acceptable behaviour by using some techniques, strategies or interventions.

The term "behavioral management" was used to manage undesired behaviour and disruptive behavior of the elementary-level students for better adjustment in classroom situation.

1.10.4 Academic Achievement

Achievement is a goal of academic life of the students, higher academic achievement is linked with many factors like intelligence, motivation, readiness, persistence and attention, and students' ability to follow the classroom norms.

In this study, academic achievement has been taken Marks of 8th class ADHD students on achievement test of English (rating were taken before and after the manipulation of teaching interventions).

1.11 Research Methodology

1.11.1 Type of study

The quantitative approach was used in this study.

1.11.2 Population of the study

The population of the study included all the male and female elementary schools'teachers and students of private and public sectors schools of Rawalpindi. The size of population was 537 teachers and 41400 students.

1.11.3 Sample of the study

In order to collect data from ADHD students, purposive sampling techinque was used, whereas the data from teachers were collected through stratified sampling technique. The sample size of the teachers was 200, while the sample size of the students was 300. Sample was taken from public and private schools. 16 government schools of the Punjab and 4 F.G schools were included as a sample in public sector. 8 franchises and 8 Private schools owned by the single owner were included as a sample in public sector. Approximately 9 students and 6 teachers were taken as sample from each public sector schools while 7/8 students and 5 teachers were taken as sample from each private sector schools.

Table 1.1

Sample Breakdown

Sample of the study

Public Sector	Private sector
16 Government schools of the Punjab (150 students + 100 teachers)	(60 students + 40 teachers) 8 franchises (The City, Roots Internationals, Beacon House, and Educators)
4 F.G. schools (30 Students + 20 teachers)	8 Private schools owned by the single owner (60 students + 40 teachers)

1.11.4 Research Instruments

The data were collected by using four research questionnaires, which were developed specifically for the present research. Among them, three questionnaires were developed for the teachers and one for students.

Name of questionnaires are as under:

1 A questionnaire for teachers' awareness about ADHD students.

2 A questionnaire for teachers' awareness about the ADHD prevalence among students having problem in elementary level classrooms

3 A questionnaire related to interventions used by teachers to manage students having ADHD and issues in general elementary level Classrooms.

4 A self-Awareness questionnaire for students about the extent of their ADHD Behaviour in Classroom.

1.12 Summary

This chapter was introductory, and here background of the study, problem statements, theoretical framework, objectives, significance of the study, delimitation of the study and operational definitions have been discussed. The subsequent chapter, titled as *literature review* will pertain to literature on the research topic.

CHAPTER-2
LITERATURE REVIEW

A review of related literature is mandatory to support any type of research. A theoretical framework related to the topic under investigation can capture readers' attention towards previous theories established by other intellectuals.

This chapter deals with current literature on ADHD, which will definitely provide understanding about the concept of ADHD. This literature can support teachers' professional development for solving learning and classroom management issues at secondary level. Several types of learning difficulties which are being faced by teachers of elementary classrooms are discussed here.

2.1 Historical Background of ADHD

It is critical to examine the concept of ADHD from a historical perspective in order to gain a better grasp of it. According to (Lange et al., 2010; Martinez-Bada & Martinez-Raga, 2015), the first account of ADHD in literature came from a German physician named Heinrich Hoffmann. He wrote a poem called The Story of Fidgety Philip in 1865. Philip, the main character in the poem, displayed all of the standard symptoms of hyperactivity. But it was British pediatrician George who published the first clinical description of ADHD symptoms in a medical journal in 1902 (Canu & Wymbs, 2015; Martinez-Bada & Martinez-Raga, 2015). His report was mostly made up of his talk before the Royal College of Physicians. The reports' content was based on the outcomes of treating youngsters with inhibition and impulsive behavior. According to Grogre, children's moral control was persistently deficient due to biological factors such as inheritance or brain illnesses. As a result, children's ability to influence these factors is limited.

Furthermore, many children who survived the encephalitis epidemic outbreak documented by Lange et al. in 1917–1918 developed considerable symptoms of hyperactivity (2010). As a result, many doctors assumed that brain injury was the sole cause of hyperactivity. This hyperactive disorder has been labeled as having minimal brain damage. This phrase was then shortened to minimal brain dysfunction (MBD) and was widely used in the 1950s and 1960s.

Between 1937 and 1941, a substantial study was done to examine the utility of stimulus medicine therapy for the treatment of hyperactive youngsters. Bradley's study mostly focused on the treatment of amphetamine addiction. The initial medicine used

for the treatment of psychiatric ill children was Benzedrine. Due to the demonstration of a satisfactory pharmacological response in more than half of children with behavioural disorders, stimulant medication became the chosen treatment for behavioural disorders (Cormier, 2008).

According to Lange et al. (2010), Attention Deficit Disorder (ADD) was formerly a major problem, but it has since been overtaken by ADHD. Virginia, a Canadian researcher, produced groundbreaking study in 1974 that revolutionized our understanding of ADHD.

According to Lange et al. (2010), the term ADHD became well-known around 1980 and appeared frequently in the scientific literature. Furthermore, it was sought to prove that ADHD is linked to biological abnormalities through a ten-year study. In the study, it was discovered that children with ADHD have a smaller brain size than children who do not have ADHD. ADHD symptoms were also shown to be more severe when the brain size was lowered. In the twenty-first century, research trends in the field of ADHD were continued, with more focused research on neurons — imaging heredity with molecular genetics and transdisciplinary disciplines — than in the 1990s.The background research on ADHD took it as a mental problem due to malfunctioning of brain or due to some other biological issues. Still ambiguities are there to unveil various unknown causes of this disorder. Many studies have shown that while effective medicine cannot completely manage the behavior of ADHD children, it can help to reduce the severity of the various symptoms associated with the disorder. The problem is significant because of its long-term consequences, which can jeopardize one's academic career. Teachers may easily recognize ADHD manifestations since school is the only place where children expose themselves during the learning process, and the teacher can detect such students if he or she is able to focus.

According to Lange et al. (2010), ADHD causes a barrier to learning; therefore, it is important to recognize ADHD as a learning challenge rather than a child with a low IQ. Many teachers who are working in other than special education institutions constantly complained about non serious attitudes of the students. Students' attitudinal problems quite often have impact on their low academic profile and disturbance of class. They are not following the given instructions of the teachers. They are apparently having no handicap, but are still unable to grasp / perform the task effectively. As a result, there is a discrepancy between pupils' achievement and their true potential. Several sorts of study have been undertaken in the last few years to emphasize ADHD

as a learning challenge recognized by teachers in ordinary classes. It has been identified as the most common issue among young children. According to the American Psychiatric Association (2013), 3 percent to 5% of elementary school students have ADHD.

According to Gormley & Dupaul (2015), ADHD has a significant impact on pupils' learning. It has an effect on students' minds, which causes a barrier in the way/process of learning, and most parents hear the instructor say to their child, "Your child is not focused on the directions I gave him/her, or your child is not concentrating on duties throughout class" (personal observation).

Due to the continual tension between "core symptoms of this condition" and proper classroom behavioural standards, Kos, Richdale, and Hay (2006, p.) described the classroom as a challenging environment intended for students with ADHD.

A lot of research has been done on ADHD students' issues in the classroom, such as academic and behavioral difficulties, grade retention, discipline, negative social impact, and positive teacher-peer connections (Kos, Richdale & Jackson, 2004).

In addition to ADHD students' issues in the classroom, past research has looked into how teachers' attitudes and knowledge about ADHD, as well as teaching students with ADHD, affect classroom management, quality peer interactions, and academic advancement (Daley & Birchwood, 2010; Kos et al., 2006).

According to Anderson, Watt, Noble, and Shanley (2012), ADHD was previously treated in one of two ways: medication or psychotherapy, but the notion has now completely changed.

Several previous research have found that parents and teachers are very concerned about their children's behavior and require something other than medicine or counseling (Morris et al., 2019). This research is based on effective ADHD teaching strategies. It is expected that if kids with ADHD are accommodated with enhanced and appropriate interventions, they will do well in class. In the learning process, ADHD children frequently encounter challenges and difficulties.

So, before we get into the details of ADHD, let's look at how it relates to learning. What is learning, and what kind of learning issues do kids face in normal classes, and how can this be considered a learning difficulty? If this is a learning challenge, and teachers are aware of it, how do different teachers in elementary classrooms deal with it?

Until now, there has been a dearth of comprehensive study and analysis focusing on primary school teachers' awareness and knowledge of ADHD and its various kinds. Furthermore, it is highly dependent on students' geographical, social, socioeconomic, and environmental circumstances (Vereb & DiPerna, 2019).

Furthermore, fewer limited studies were completed, with less favorable results reported. Hawkins, Martin, Blanchard, and Brady (1991) conducted a study involving 115 psychological service providers and school instructors as participants. Only 39% of the 85 percent of respondents who were educating a child with ADHD are trained to teach ADHD. Furthermore, just 16 percent of ADHD-qualified respondents have successfully used a variety of researched intervention strategies in the elementary classroom throughout their teaching. The maximum training time was three hours (including hours of coursework, workshops, and in-service or on-the-job training).

The researchers conducted a survey of 100 instructors to find out how they felt about ADHD training. They discovered that 33% of people wanted more ADHD training, albeit the authors did not specify what kind of ADHD training they wanted or how long it should last. Furthermore, while the study was done with rural school instructors, the results of the research appear to be reliable when applied to urban school teachers (Whitworth, Fossler & Harbin, 1997).

A study was conducted by Youssef, Hutchinson, & Youssef (2015) to explore the teachers' perception and skill of dealing with students having ADHD in classroom situation. The participants were 440 school teachers working in general education elementary level schools. The results revealed that many teachers lack skills but have intention to learn about this phenomenon, expressing that there is a need of training to learn about academic interventions for the effective handling of ADHD.

(Bruna, 2004) used a survey questionnaire prepared by (Jerome, Gordon, & Hustler, 1994) for the study four years later. They compared the findings of a poll of 154 elementary school teachers. The findings of their research were very consistent. It was shown that 83 percent of respondents received no official ADHD instruction during their college studies. Furthermore, it was discovered that while 81 percent of school instructors had a good basic understanding of ADHD, they were less aware about nutritional management for ADHD. A good and balanced diet could be one of the causes of ADHD, according to 54 percent of respondents, and dietary strategies could be useful in helping ADHD adolescents, according to 74 percent of respondents. They observed no link between the score on the questionnaire describing teachers' awareness

of ADHD and the respondent's physical age, grade taught, marital status, teaching experience, or contact duration with ADHD children when they looked at the demographic variable. Those who read more than ten research articles or books about ADHD and were professionally trained to manage ADHD pupils in elementary school, on the other hand, had a higher score and had a better educational outcome.

Students' academic attainment and performance, according to Hajovsky, Mason, and McCune (2017), are frequently contingent on their ability to join classroom errands with minimal disruption. Students are empowered by the clear and simple information on completing assignments correctly and participating fully in classroom activities and debates. When a youngster exhibits ADHD-like behaviors, the consequences can include poor academic achievement, low self-control, and poor social skills in the classroom. These pupils' social difficulties can be minimized and their academic skills enhanced by implementing an appropriate behavioral and educational intervention program.

According to Russell & Barkley (2015), the teacher is regarded an active aspect of the educational process because of his ability to shape pupils' personalities. The importance of the teacher in the educational process cannot be overstated. The educational process cannot be completed without this crucial component. During the course of their teaching careers, teachers are confronted with a variety of learning challenges among the pupils in their classes. The troubles and problems that a student has during the educational process are referred to as learning difficulties. Attention Deficit and Hyperactivity Disorder (ADHD) is the most well-known and widely reported learning disability among other learning disabilities.

According to Russell and Barkley (2015), ADHD is currently seen as a special education concern. There have been numerous studies on ADHD, but most of them have concentrated on the medical treatment of children with the disorder, with only a few focusing on the management or fostering of ADHD students in elementary schools. There is a widespread belief that ADHD is a special education issue that should be diagnosed by a medical professional rather than a classroom instructor. It is a professional's misunderstanding or misperception.

2.2 Learning

When considering student psychology, it is impossible to disregard the concept of learning, according to Houwer, Barnes-Holmes, and Moors (2013). Learning has

been regarded as a major topic in psychological study, and it is a topic that is extremely important and necessary. We can't finish our psychological research if we don't have a learning topic. To comprehend a child's psychology, a skilled educator and a psychologist must discuss the situation. Why is it important to talk about learning? Because psychology has a strong link to children's behavior, which can be molded through learning.

Learning is defined as a process of acquiring new knowledge or modifying prior knowledge, including changes in behavior, abilities, and attitude. Learning is also tied to information comprehension (Twomey, 2006).

We can't internalize knowledge or modify our behavior if we don't grasp it. Internalization is primarily concerned with personalizing information and changing behavior in response to that personalization of knowledge and information (Richard, 2010).

Learning, according to Ormrod (2015), is a behavioral adaptation. Experience is what leads to behavior modification. Everyone has various life experiences, and learning is based on those experiences as well. For example, if one is participating in an event or activity and another is passing through with a comparable event or activity at the same time, invite both of them to report what they have observed. These various observations are based on a variety of experiences. It signifies that observations and experiences are intertwined. We might infer that learning is essentially a study of our surroundings; what we experience and how we change our behavior based on those experiences. In school, the learning process is quite important. Without learning, teachers' and students' efforts are in vain. Learning is always the first step in the educational process.

There are various forms of learning and various methods of receiving learning. Listening and speaking, looking and watching, touching and feeling, and thinking are all ways to learn. As a result, there are shifts in thinking, perspectives, environmental adaptation, and behavior modification. But during the process of learning, most of the students face some difficulties that can be of several types (Richard, 2010).

2.3 Learning Difficulty

In a study, Houwer et al. (2013) stated that a learning issue occurs when a youngster has trouble learning or grasping educational concepts. During the educational process, the student encounters several difficulties in learning. Learning difficulty is a

problem that reduces the effectiveness of learning in grasping an idea or knowledge. Children who have a learning disability must put in extra effort.

When there is a processing issue, there is a learning difficulty, according to Arkell (2013). She went on to say that problems with proper sense usage, listening, writing, speaking, paying attention to the right activity, and reasoning abilities are all examples of learning difficulties. Some learning challenges are verbal, while others are nonverbal. When a youngster is unable to use spoken words, reading, or writing properly, he or she has verbal issues. When children are able to perceive and process what they see, but are unable to see the visual details, they are experiencing nonverbal challenges.

According to Gross (2010), there is a significant deal of ambiguity in the vocabulary of learning difficulties since it differs from nation to country in terms of its perspective and application in social and educational settings. Learning difficulty and learning impairment are terms that refer to the mind and its abilities. Students with learning difficulties are sluggish to receive knowledge and have trouble digesting, receiving, analyzing, and storing it.

Some learning issues are universal in nature, while others are more specialized. Certain learning issue occurs when a youngster has trouble in a specific area. Students are supposed to work hard in a specific area (Grant, 2017).

They went above and above to improve that particular area. For example, if a youngster has difficulty in one area, such as completing math issues, he or she may not have difficulty or perform well in another area, such as word recognition. This takes into account a specific learning challenge. A specific learning issue may have an impact on your child's performance in that subject (Helen, 2013).

2.3.1 Difference between learning disability and learning difficulty

According to Westwood (2008), the use of words and concepts has evolved over time. Learning difficulty was widely used to replace learning disability (LD) in most nations, including Germany. In the United States of America (USA), the word "learning disabilities" or "learning disorders" is identified and used for students, although the term "learning difficulty" is widely used in the United Kingdom's literature (UK). According to several sources, there is no difference between these terms. There is no discernible difference.

Learning disability, in general, is a handicap found exclusively in atypical or special students who are unable to learn owing to physical or mental flaws. The kids

are unable to learn something or an idea because of this issue, but learning difficulty is a problem that practically all regular students confront. The term "learning difficulties" refers to a condition that affects the majority of elementary kids. It has nothing to do with a child's physical handicap, but it does necessitate time and effort on the part of pupils to deal with it (Westwood, 2008).

Learning impairment and learning difficulty have quite different meanings and interpretations, according to Carlson (2005). If given adequate help and the opportunity to employ a strategy, a student with a learning disability may be able to learn more effectively than a typical student. A learning challenged student, on the other hand, requires a unique sort of treatment or medication, which is determined by the student's individual impairment.

In brief, learning disability has a lifelong impact on kids; learning difficulty, on the other hand, impacts youngsters in a specific area that can be improved with effort.

Other factors that contribute to learning difficulties include the social environment, a lack of opportunity, a short attention span, the home setting, parental support, instructor ignorance, an inefficient learning environment, and a lack of interest in learning activities (Westwood, 2008).

2.4 What Should Teachers Know About Learning Difficulties?

There are a number of students with learning disabilities in primary schools. The majority of our schools are ill-equipped to deal with pupils' learning issues. As a result, far too many children drop out. Schools frequently overlook the importance of early detection and greater care for these individuals. Because of their low confidence, self-esteem, and self-efficacy as a result of their learning difficulties, kids drop out of school. They form opinions about themselves that they are unable to learn. Teachers' unfavorable comments frequently demotivate students. Otherwise, if schools and teachers provide adequate assistance, they will be able to provide their best. For proper support and timely help, early identification is a very necessary thing (Pale, 2018).

Several students with learning disabilities are frequently observed in primary schools. Teachers frequently lack the confidence to deal with such challenging kids, and most adolescents lack the confidence and skills to communicate their difficulties. They are inefficient in learning and writing, which is a very obvious indication of learning difficulty (Westwood, 2008).

When it comes to the responses of students in the classroom, Twomey (2006) claims that they refuse to read anything, avoid participating in class discussions, and have less participation in writing something.

There is no set criterion by which a school teacher can determine a child's classroom behavior. Every student exhibits some type of behavior that a teacher can use to identify a student who is having difficulty in learning, for example showing minimum concentration to the instruction of teachers, wasting time on less important activities, being unable to be disorganized, and having less control over their actions. When it comes to pupils with learning disabilities in primary schools, the rate of those students is relatively high (Kavale, Holdnack & Mostert, 2005).

There is a great need to focus and know the students' learning difficulties, and the possible causes of learning difficulties in elementary classrooms.

2.5 Causes of Learning Difficulty

There are various elements that produce learning difficulties, regardless of the mental level of pupils or whether they have a general or specific learning challenge. There are three major causes: a lack of certain behavioral features, poor learning, and an unproductive setting (Gregory, Fabiano & Pelham, 2003).

When we look at the behavioural side of learning difficulties, we examine the pupils' behavior and the flaws in that behavior. These include decreased intellectual activity, decreased task focus, decreased auditory processing, decreased visual observations, and a melancholy memorial condition, among other things. In addition, various other factors such as culture and home environment have an impact, such as when a family has a disordered structure, solo parenting, or a lack of parental support, as well as the family's economic background (Westwood, 2008).

Ineffective learning does not imply that the student is unable to learn; rather, it implies that the student is less focused on his or her work. The pupil isn't doing a good job of tackling the task. To put it another way, the student has not yet figured out how to learn effectively in the classroom (Twomey, 2006).

The environmental factor is the other consideration. The type of atmosphere a class teacher delivers to a student, for example, has an impact on a student's success. Several studies have indicated that the learning environment has a significant impact on students (Soroa, Gorostiaga, & Balluerka, 2016).

If the setting is conducive to learning and pupils, they will feel more at ease in the classroom and will exhibit less causalities during lectures and instruction. Students were frequently accused for not behaving well, not studying well, or having a personality disorder. This is where a schoolteacher's job begins. Here, the teacher can act as a role model and mold the situation to get the desired behavior from the students (Westwood, 2008).

Dettori & Ott (2006) have faith in that teacher and keep a close eye on the children that are struggling. Teachers take on the role of an observer. They must understand why they are underachieving and employ various tactics to address it. Teachers have been known to be extremely nasty to kids who are experiencing some form of learning difficulties. They believe that pupils are acting in this manner on purpose.

Learning challenges have a significant impact on a student's personality, including emotions, feelings, and self-confidence. Students display more of this type of behavior in the early years of school. There is a need to focus on teachers' personal behavior and handling of kids with learning disabilities (Dettori & Ott, 2006).

2.6 Types of Learning Difficulties

During the learning process, students face processing issues that influence their basic skills of reading, writing, speaking, and listening. These issues not only impair basic skills, but also higher mental level skills such as task management, organizing an activity, memorizing information for a short or long period of time, and attention span (Hernandez, Hueck & Charley, 2016).

Some challenges are readily apparent to the teacher during class, while others are only realized after some time has passed. Several forms of learning challenges have been discovered after a thorough assessment of the literature. Most kids are experiencing multiple types of obstacles at the same time, but one can have a greater impact on their personality and attitudes toward learning. There is no mention of a specific source of learning difficulties. As different forms of learning challenges cause different types of learning difficulties, there are several types of learning difficulties (Singaravelu, Shahana & Sivakumar, 2016).

Different forms of learning challenges that students confront were addressed in the Diagnostic and Statistical Manual (2013). The following are examples of specific

sorts of learning difficulties: Attention Deficit and Hyperactive Disorder, Dyscalculia, Dysgraphia, Dyslexia (ADHD).

Dyscalculia affects students' ability to comprehend and conduct mathematical problem-solving calculations. They struggle to answer simple arithmetic questions and lack numeral functional skills (Pale, 2018; Burr & LeFevre, 2020). Dysgraphia is a learning disability in which students have trouble writing and expressing their thoughts in writing. These pupils have weak handwriting and a difficult time penning words with different shapes. Students with this sort of learning disability must work especially hard to form sentences, and they are frequently unable to compose whole sentences.

Dyslexic students have difficulty reading, writing, and spelling (Spangenberg, 2017). Students of this type mix up words within phrases and alphabets inside words. Students have difficulty recalling facts, organizing their thoughts, and retrieving information. Students with ADHD have trouble in concentrating and focusing. They are frequently inattentive.

2.7 Definition of ADHD

According to Pfiffner & Haack (2014), today's elementary classrooms are becoming increasingly diverse, which indicates a class with a diversity of children. On their own, students have unique abilities. Teachers face a great deal of difficulty in dealing with diverse classrooms. Teachers must behave extremely carefully in a variety of classrooms, which imposes particular demands or expectations on them. It is the job of teachers to identify each student's individuality and treat them properly. Teachers must take advantage of each student's unique qualities and abilities. Teachers must understand which students have particular attributes and accept their uniqueness in order to make effective use of varied qualities. After that, he or she must put that ability to use. That is only feasible if a teacher creates a such classroom atmosphere that is welcoming to all learners.

Teachers face many challenges in today's classrooms. Teachers must become more alert and engaging in order to emphasize students' talents and shortcomings in their courses on a timely basis. Teachers must take several steps to learn more about their students (Singaravelu et al., 2016).

The first and most crucial step is to spend time getting to know your pupils, their interests, and their learning styles. As much as possible, interact with students. As pupils are better able to communicate their wants and desires, ask them to share them

with you. Make observations of pupils' behavior in various scenarios, then check and follow up on them. Throughout the process, the teacher must demonstrate to the students how to get to the desired outcome.

When we surveyed instructors about their classrooms, many of them stated that their classes are filled with kids who have a wide range of characteristics, including behavioural variances, cultural variations, different learning styles, mental abilities, and other forms of learning issues. ADHD is the most typically diagnosed learning issue, among others (Pfiffner & Haack, 2014).

ADHD is a developing condition in which students shows inattentive, impulsive, hyperactive behavior as well as the inability to maintain long-term attentive concentration on assigned chores or activities. ADHD is one of the most commonly diagnosed illnesses, and it is characterized as a persistent neurobiological development disorder in school-aged children by medical science (American Psychiatric Association, 2013).

The following is a more general definition of this disorder: “Children who are less focused on their activities or who are only focused for a short period of time.” ADHD children are frequently overexcited or overreact (Danckaerts et al., 2010).

“A social disorder evidenced by chronic inattention on everyday tasks and schedules,” according to the American Psychological Association (2013). ADHD can influence the quality of one's daily life, as well as their social and academic growth.

The American Psychological Association (2013) defines ADHD as: “a social condition manifested by persistent inattention on daily errands and schedules. Quality of normal life, social and academic development may be affected by ADHD.

Singaravelu *et al.* (2016) described that during the process of learning students are lacking the control over their behaviour as having less focus over the task, are hard to behave adequately, scream some time in reaction rather than responding calmly. These types of students are generally facing the difficulty of ADHD.

ADHD is a difficulty that a student faces in class. It is a difficulty which distracts the individual from the task, creates restlessness and impulsive behaviour. Class achievement of students is always affected by the learning difficulty of ADHD (DuPaul, Gormley & Laracy, 2013).

Students may have inattention, hyperactivity and impulsivity. Some students are having highly inattentive behaviour, whereas other students exhibit hyperactive-impulsive. However, those students with ADHD exhibit both which may create

difficulty for them to behave well in the classroom. The symptoms are associated with inattention and impulsivity and seem to be the most common and challenging in educational situations (DuPaul, Eckert & Vilardo, 2012).

Children with ADHD always are on run. Sometimes they unknowingly move here and there and show disruptive behaviour. It rarely happens that they think before any type of action (Moldavsky & Sayal, 2013).

The most important quality of Attention deficit and hyperactive disorder students is that they are consistently moving from one place to other. Students unintentionally move hands and feet while seated. Most of the times students are very much severe and harsh in their reactions, have less patience to response anything and have a minimum tolerance level for their turn. These signs of inattention, hyperactive and impulsive behaviour can be observed in the students of 7 years that stay with them for a number of years later on (Rapoport, 2009).

2.7.1 Features of a child having a learning difficulty of ADHD

Mulholland *et al.*, (2015) have defined several characteristics that are related to the behaviour of the child who has ADHD. These are enlisted below:

- Moving quickly here and there as full of kinetic disorder
- The incapability to remain attentive on tasks or activities
- Switching quickly from one task to other without proper pausing
- Easily distracted and loses his/her attention
- Performing annoying actions that disturb every other person
- Doing daydreaming mostly
- Having less self-management

Kollins and Sparrow (2010) also established certain judging criteria for students and their shown behavior. If the child's impulsive behavior occurs just rarely, we can't call it a behavioural problem unless we see it on a regular basis. The constant impulsive behavior is noticeable, to put it another way. The youngster with ADHD always finds a method to cause pain to others, exhibits unpredictable behavior, and ruins the outcomes of any endeavor. The majority of the time, students with ADHD appear unconcerned since they are devoid of serious thought and tension.

2.7.2 Secondary types of ADHD

The main signs of ADHD are persistently "inattentive, hyperactive, and impulsive behavior patterns that impair a child's functioning or growth" (American

Psychiatric Association, 2013, p. 61). Based on professional recognition of their symptoms, inattention, impulsivity, and hyperactivity are also considered subtypes of ADHD.

2.7.2.1 Inattention type:

The process of focus, concentration, attentiveness, awareness, responsiveness, consciousness, and consistency in the execution of a learning task is known as attention. Attentiveness, choice, and exertion toward a goal are the three components that make up attention. Students must assert attention in order to finish a task while learning in the classroom. Inattention difficulties affects a learner when he or she has trouble paying attention to complete a task. Inattention is also included as a subtype of ADHD mentioned in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (Nuckols, 2013).

The inattentive kind of attention deficit disorder is also recognized as a subset of Attention Deficit Disorder (ADD). When a child is distracted from his or her task, forgets everything that needs to be remembered, always does disorganized work, has a lack of concentration on work, shows carelessness, and when the child ignores the thing that should be focused on, or when the child has little focus on the given task, he or she is exhibiting inattention behavior (Raggi & Chronis, 2006).

2.7.2.2 Hyperactive type:

Hyperactivity is linked to youngsters that are extremely active. A child's hyperactive behavior can be recognized when he or she is constantly restless and exhibits immature behavior. The term hyperactive has been supplanted with overactive, restless, and overcharged in the last 70 years. The majority of the time, hyperactive children act out in unusual ways. These children must engage in some motor activities that require energy (Hall & Gushee, 2000).

2.7.2.3 Impulsive type:

Impulsive behaviour occurs when we start working without thinking, planning and foresight. This type of student has some type of driving power which always keep him on move.

2.7.3 Possible reasons for ADHD

There are numerous contributing elements and mechanisms that may contribute to ADHD symptomatology (Gammaitoni, 1997). It is difficult to prove perfect causality

of ADHD while researching its etiology. There could be more than one contributing component or process in the root causes of ADHD. The various elements and mechanisms that have been linked in research studies may lead to the final path of the ADHD disease (Cantwell, 1996). The following sections of this chapter discuss neurobiological characteristics, genetic impacts, and environmental considerations.

2.7.3.1 Neurobiological factors

While scientifically investigating the etiological agent of ADHD, a primary focus has switched to neurological aspects. According to Canu and Wymbs (2015), structural brain injury is a major factor in the inability to maintain constant attention and behavioral or emotional regulation. Anomalies in the prefrontal cortex (front striate brain circuitry) were observed during magnetic resonance imaging (MRI) studies of persons with ADHD (Tannock, 1998).

The prefrontal cortex is thought to play a significant role in behavioural response inhibition and intervention in contextual stimulation reactions. Furthermore, in the neurotransmitter systems, norepinephrine and dopamine are thought to be in lower quantities in the frontal brain circuitry of someone with ADHD, which may contribute to central ADHD symptoms. According to the authors, the neurobiological abnormalities found in ADHD patients are due to abnormal brain growth induced by hormonal, environmental, and hereditary factors (Tannock, 1998; Canu & Wymbs, 2015).

2.7.3.2 Genetic factors

One of the suggested major possible causes of ADHD is a genetic factor. ADHD is assumed to be a highly genetic disorder in nature (Faraone *et al.*, 2000). The research suggested that chances of occurrence of ADHD signs are more prominent among close blood relatives as related to ADHD children's siblings of adoptive parents. Moreover, research using twins foster this point of view that the likelihood of one ADHD twin is meaningfully greater among twins of monozygotic nature because of derivation from a single fertilized egg as compared to twins of dizygotic nature because their share of genes is only 50% due to derivation from two separately fertilized eggs (Levy, Hay, Mcstephen, Wood & Waldman, 1997). Heritability is the highest factor among other factors for ADHD that causes any emotional or behavioural disorder (Canu & Wymbs, 2015). Moreover, a number of researchers have pointed out that the contribution of heritability ranges anywhere from 0.75 to 0.98 with a small share of variance due to non-shared environmental influences (Tannock, 1998). Hence, it is

obvious from the research revised here that genetic strongly effect the increase of ADHD.

2.7.3.3 Environmental factors

Another evidence-based viewpoint is centered on the environmental elements that are likely to cause ADHD. According to this idea, exposure to environmental pollutants and adversities during pregnancy, such as alcohol and drug abuse, as well as a significant increase in lead levels, may increase the risk of ADHD. The study also suggests that prenatal stress, social disturbance, traumatic events, and smoking are individually linked to eventual ADHD symptoms in children (Rodriguez & Bohlin, 2005). Furthermore, a variety of environmental toxins, such as the kind of feeding effects, lead poisoning loads, and prenatal engagement in drinking alcohol or drugs addiction, have been documented as possible causes of ADHD (Barkley, 1998).

Several studies have looked into the role of food flavors in the development of ADHD, finding that preservatives, artificial food colors, and salicylates play a minor role. According to recent research, the amount of lead in the blood is somewhat associated to hyperactivity and inattention. The increased lead level in the blood of ADHD youngsters, on the other hand, was not frequently supported by studies (Jensen, 2000).

Furthermore, studies have discovered that children whose moms smoked or drank alcohol during pregnancy have a higher risk of developing ADHD than children whose mothers did not smoke or drink alcohol during pregnancy (Mick, Biederman, Faraone, Sayer & Kleinman, 2002).

2.7.4 Diagnostic criteria and methods

ADHD diagnosis is not simple; it necessitates a multi-stage approach. ADHD in children cannot be officially diagnosed based on a single test without taking into account other issues such as depression, anxiety, and learning challenges, all of which might have similar symptoms (Barkley, 1998).

Furthermore, a multimodal method to formally diagnosing ADHD involves a careful review of evidence acquired from various and diverse sources, such as parentages, family members, educators, associates, and contemporaries (George, DuPaul, Weyandt & Janusis, 2011).

The DSM-V includes extensive criteria for diagnosing clinically ADHD children and ensuring adequate treatment of identified ADHD youngsters. Furthermore, standardizing the use of DSM-V-based criteria will assist systematic ADHD judgment

in a consistent manner, ensuring inter-professional cooperation and harmonization when it comes to an ADHD diagnosis (DuPaul & Stoner, 2003).

Before someone can be diagnosed with ADHD, the following criteria must be met, according to the DSM-V:

Hyperactivity-impulsivity, inattention, and other impulsive behaviors hinder an individual's ability to work, advance, and grow. The following are the facets by category:

Inattention: Children must be less than or equal to 16 years old, have at least six of the symptoms listed below, and have had the symptoms for more than six months. It does not evolve at a regular rate and has a direct negative impact on academic, professional, and social activities:

- In the assignment, given work, or other acts, the youngster regularly fails to pay attention to particulars, details, or makes careless blunders.
- The youngster frequently struggles to maintain consistent attention in tasks, games, or activities.
- When directly interacted with, the child frequently daydreams and listens carelessly.
- The youngster regularly fails to complete assignments, errands, and duties due to a lack of understanding of the course and content of directions.
- The youngster has a hard time organizing errands and activities.
- The child regularly avoids, despises, or is uninterested in responsibilities that require ongoing mental exertion (such as homework or assignment).
- The youngster regularly loses items needed for activities or errands (e.g. school projects, notebooks, school bag, pencils, toys, or tools).
- The youngster is easily distracted by insignificant stimuli.
- The child frequently acts scatter-brained in day-to-day happenings

Hyperactivity and impulsivity: At least six of the following symptoms must be present in children aged less than or equal to 16 years, and the symptoms must last for more than six months to a grade that is not in line with normal development and has a direct negative impact on social, professional, and academic activities:

- The child wriggles in his or her seat and moves his or her hands and/or feet continually.

- The youngster switches seat frequently while remaining sat (e.g. moves from one chair to another during class in the classroom).
- The youngster regularly wanders or strolls in inappropriate situations, such as during lectures.
- The youngster is frequently unable to do tasks in a quiet and comfortable manner.
- The child is constantly "on the move," as “propelled by a motor."
- The child regularly engages in pointless and disproportionate speech.
- Before the question is asked, the youngster frequently announces a response.
- The child is frequently anxious while waiting for his turn.
- The child constantly bothers or interrupts others (e.g. Interferes into discussions or games).
- Prior to the age of twelve, the youngster frequently exhibits a variety of reckless, impulsive, or hyperactive behaviors.
- There is substantial evidence that the signals prevent a decline in the quality of social, academic, or occupational work.
- The symptoms are not unique to schizophrenia or other psychotic disorders, and they are not easily explained by other mental illnesses (e.g. temper disturbance, apprehension disturbance, dissociative disturbance, behaviour disturbance, and extraction or material intoxication).

The DSM-V Divides (ADHD) into three subtypes based on the criteria A1 (inattention) and A2 (hyperactivity impulsivity) Combined presentation:

Based on the criterion A1 (inattention) and criterion A2 (hyperactivity impulsivity), the DSM-V defines three subdivisions of Attention-Deficit Hyperactivity Disorder as follows:

2.7.4.1 Combined presentation:

The presence of Criterion A1 and Criterion A2 for continuous past 6 months would be due to the presence of Combined Type of ADHD.

2.7.4.2 Predominately inattentive presentation:

If criterion A1 is present but criterion A2 is not present during the last 6 months, the predominately inattentive subtype of ADHD will exist.

2.7.4.3 Predominately hyperactive-impulsive presentation:

The predominately hyperactive-impulsive subtype of ADHD will exist if criterion A2 is encountered and criterion A1 is not encountered during the last 6 months.

The three severities of ADHD based on DSM-V are defined as follows:

2.7.4.4 Mild sub threshold or borderline cases:

Insufficient, if any, symptoms in addition to those obligatory to make the judgment are present and indications outcome is not over than slight deficiencies in societal or work-related functioning in the mild severity of ADHD.

2.7.4.5 Moderate cases:

Indications or practical impairment between mild and severe" are present.

2.7.4.6 Severe cases:

There are other indicators in addition to those required for diagnosis, or any indications that are primarily severe, or indications that result in clear damage to occupational or communal functioning (Bennett, Power, Eiraldi, Leff & Blum, 2009).

Clinical diagnoses of ADHD patients are made using a variety of procedures. Because the actions must be carried out in a variety of settings, several instruments are employed in conjunction with school workers and medical specialists to aid in the diagnosis of ADHD. In the classroom, a student's ADHD inclinations and the effects of those inclinations on their achievement can be assessed.

The National Association of School Psychologists (2010) described the following approaches: official interpretations in a variety of scenarios, discussions with the learner and relevant adults, assessment scales completed by the individual, close family, teachers, and medical histories, and finally official examinations to quantify attention, tenacity, and related characteristics.

The Behavioural Assessment System for Children (BASC-2) is a widely used behavior rating scale for interactive assessment scales that is used to assess ADHD. The individuals are presumed to have ADHD, and the BASC-2 behavior rating of their instructors and parents is used to formally judge the ADHD. (Reynolds & Kamphaus, 2004).

The instructor completes a Likert Scale questionnaire with options ranging from "Never" to "Almost Always" for occurrences of specific behavior, such as adaptive and maladaptive cognition behavior observed at home and at school. The parent fills out a similar questionnaire about the behavior's occurrences in communal settings or at home. A questionnaire based on Likert Scale questions with true and false answers is also

completed by the respondent in the research. For each of these questionnaires, graphs are created (Bennett, Power, Eiraldi, Leff & Blum, 2009).

An instrument based on the Conner's Rating Scale that includes self-rating and spectator rating choices is also used to complete the ADHD exam (Conners, 2008).

This rating scale can also be used to assess behavioural issues in children and adults. Furthermore, Conner's Rating Scale is one of the most widely used screening tools for determining whether a pupil is exhibiting ADHD-like behavior. This rating scale is completed by a group of people. Many people are directly attached to the persons, including their parents, teachers, guardians, and, most significantly, the individuals themselves. As a result, individuals, parents, and instructors fill out a Likert rating scale based on the BASC-2 scale that has the same points. The results of rating scales are then compared to determine whether a pupil has ADHD or other behavioural disorders (Conners, 2008).

Additionally, a computerized task-oriented evaluation, such as Conner's Continuous Performance Test, is employed as an alternate measurement to diagnose ADHD (2nd Edition). Its primary role and goal is to assess several aspects of a person's attention, such as selective attention, sustained attention, and impulsivity. With the presentation of the stimulus, the subject is asked to respond to stimuli such as numbers and letters by using a mouse or space bar. The stimuli are presented at various time intervals. The individual's reaction time, fluctuations in reaction time, response rate, consistency, and omission and directive errors are all measured in this evaluation. These outcomes are related to ADHD-like behaviour profiles (Weyandt et al., 2013).

2.7.5 ADHD in the classroom

According to Abikoff et al. (2002), many children exhibit ADHD-related behavior before they reach school-age. It is, however, in school where they are having difficulty meeting the potentials of children in their grades. Children with ADHD may show that their attention wanders in and out of the classroom. Furthermore, children with ADHD may not think critically, have difficulty paying attention, frequently daydream, not appear to listen carefully, be effortlessly unfocused in class work or play, frequently overlook belongings, be in constant motion or unable to remain calm and composed, talk excessively and randomly, not be able to study or play silently, speak or act promptly.

“Though schoolboys with ADHD demonstrate significant behavioural problems in the classroom environment, females with ADHD are more likely to have mainly

careless symptoms and are slightly more bothersome than typically developing children," according to Kos et al. (2006).

At a certain age, however, it is the individual child who exhibits these behaviors; the majority of children will frequently enlarge them. The real issue arises when it's tough to tell them apart because they have comparable developmental behaviors. Gender differences play a crucial impact as well.

As a result, the demonstrated behavior causes significant challenges in social functioning areas. Poor academic performance is linked to high rates of focused attention problems for longer periods of time, non-fulfillment, animosity, and conflicts in peer connections and social circles (DuPaul & Stoner, 2003).

2.7.6 Academic performance of pupils suffering from ADHD

ADHD students have a tendency to underperform academically and mentally. Their academic participation and interest are lower, and they are more prone to getting off track and off-task, especially when working alone and without supervision. These pupils typically do not acquire higher grades or greater academic performance, nor do they fully explore their latent potential; as a result, the likelihood of degeneration and school abandonment or dropout increases. As a result, those students are less likely to continue their post-secondary education or training (Rinn & Nelson, 2008).

The academic underachievement of ADHD students can be explained by one of two theories. According to McGee and Lomax (1988), any student who has learning challenges, learning issues, or academic impairments may develop ADHD (DuPaul & Stoner, 2003).

The authors anticipate that children with learning difficulties during their school years may have long-term academic underachievement, leading to a negative attitude and a low academic self-concept (DuPaul & Stoner, 2003).

This low academic self-concept leads to the student believing that studying is dull, so he becomes less motivated to succeed in the classroom and begins to exhibit ADHD symptoms, which leads to even more underachievement, and so on.

According to the second idea, pupils' behavior results in academic difficulties. According to this idea, reduced rates of on-task behavior during instruction due to an unfocused approach may result in problems understanding a subject's topic or concept. This causes difficulties in learning and comprehending the subject.

Furthermore, the low rate of concentrated work behavior and work efficiency leads to an inability to respond to inquiries about the subject appropriately and exactly,

as well as an inability to complete tasks, jobs, and assignments as well as their classmates.

2.7.7 Social problems with ADHD students

Students with ADHD sometimes have a socially troublesome school life in addition to their academic goals. These children have less social connections, interactions, and strong friends, and they have more difficulty maintaining long-term friendships. According to several research, children with ADHD have a higher likelihood of declining than children with other difficult behavioural disorders (Frankel & Feinberg, 2002).

Children with ADHD were identified as unfriendly by children with a greater social and communal favorite, and they were more adored by others. These issues are linked to a lack of reaction and inhibition of impulse control, as well as inattention. DuPaul and Stoner provide numerous examples of the link between ADHD and problems forming and maintaining friendships (2003).

They provide an explanation for why a student with ADHD might rush into an ongoing activity without first obtaining agreement or authorization from the other participants (Mikami, Griggs & Lerner, 2013).

Furthermore, these pupils have a tough time maintaining self-control, being quiet and composed while waiting for their turn. As a result, other students may become irritated and refrain from playing with them. Furthermore, when there is a comparison between ADHD with their non-ADHD peers of the same age or grade level, it has been shown in diagnostic interviews about general proposed social circumstances that children with ADHD are less friendly, more emphatic, and thoughtless in their solutions to social problems. Similarly, they have a tendency to over-interpret others' behavior towards them when describing aggressive intent. They exhibit aspects of future aggression, but they are more likely to acquire and evaluate less data before drawing rational conclusions (Frankel & Feinberg, 2002).

Similarly, it has been noticed that children with ADHD are less adjusted and adapt their behavior to the current social context. Teachers of such pupils unconsciously convey negative comments to their parents and management about their performance. Because of their noncompliant behavior in most contexts, children diagnosed with ADHD receive negative feedback from parents, teachers, and peer groups (Ruiz & Hendricks, 1993).

Teachers, parents, and peers are generally able to recognize and characterize the differences among students with ADHD. Their identification is mostly dependent on the particular characteristics they exhibit, rather than on a pre-assigned ADHD designation. It could be possible because of level of teachers' knowledge about ADHD difficulties than teachers in previous research, and it was shown that the schools where the contributions were nominated had kids with ADHD who were placed in general or primary classes.

This study confirmed that naming children with ADHD has no effect on their assessment. However, the all-time behavior demonstrated by students with ADHD concerns should not be overlooked, and ADHD labeling can have a negative impact on how parents, teachers, and peers' assessment them.

2.7.8 Students with ADHD and teachers' attitudes

ADHD students not only disrupt classroom learning and overall functionality, but their constant interruptions also have an impact on other students' learning and the ability of teachers to deliver a full lesson.

According to Barkley (1998), students with ADHD may have difficulty developing and sustaining positive peer connections, resulting in low self-esteem, an inability to comprehend peer social cues, and potentially inappropriate behaviors.

In addition to the social and educational difficulties indicated by a student with ADHD, research shows that general classroom teachers' idea, philosophy, and attitude with ADHD individuals might affect other normal students' concept. (Kos et al., 2006).

Around 27 Problematic behavior displayed by an ADHD student might contribute to a heightened instructor level of worry, when continuous student compliance becomes an issue, due to the influence on other students. In general, teacher observations suggest that teaching children with ADHD who publicly demonstrate disruptions and/or hostility is substantially more challenging than teaching withdrawn ADHD students (Mulholland et al., 2015).

When instructors are forced to deal with ongoing classroom disruptions caused by ADHD students' persistent issue behavior, they begin to create opinions about educating ADHD students, especially when the problem behavior involves student violence or other threats to student safety. According to a research study, general education teachers regard teaching an ADHD student to be a hardship since he or she requires additional instructional arrangements such as devoted coursework, prepared routines, and separate strategic support (Kos et al., 2006).

Teachers' negative experiences with difficult behavior directly influence their insights and philosophy of teaching ADHD students, or any related condition, especially students with Oppositional Defiant Disorder, in addition to perceived additional instructional preparation and systematic class management for ADHD students (Zendarski et al., 2020).

There is a wealth of research on children with ADHD and their issues and suffering in the elementary school setting (Kos et al., 2006); however, there are little studies on teacher knowledge, attitude, and alleged efficacy while teaching ADHD students.

2.7.9 Teachers' insights

As shown in an article by (Rush & Harrison), a number of consistent research themes have emerged connected to teacher perspectives of kids diagnosed with ADHD (2008). A researcher investigated the possible biases of elementary classroom teachers with ADHD pupils, as well as the teachers' skills to teach and clarify these students in an elementary school, in this study. Teachers identified a number of dominant biases in kids with ADHD. The most important item was based on this bias, which "I sense was imposed to inflate grades and/or endorse teenagers with ADHD."

According to Santrock (2011), there were also indicators of teachers' general insights into kids with ADHD, as well as academic prejudices. The discoveries in this sector differ from the biological or inherited propensity of ADHD to demonstrate how the symptoms manifested in the classroom. Some teachers believe that ADHD is caused by biological or hereditary factors, and that as a result, these students are powerless to control their impulsive behavior. However, other teachers believe that with appropriate assistance and coordination of student, teacher, and parent, students can overcome their ADHD issues. Teachers also expressed the following views and opinions: ADHD students modify their behavior and moods from time to time, ADHD students use their diagnosis as a justification for their poor academic performance, and ADHD students do not take full advantage of special behavior modification services provided in the classroom. The study by Harrison and Rush came to two key conclusions: the first was that teachers create negative insights and a poor image by having annoying classroom experiences with ADHD students. Teachers' sensitivity is insufficient and incomplete in their ability to teach ADHD students in an elementary or general classroom context, according to these unfavorable views. This thought or realization also had a significant impact on their ability to teach ADHD pupils. Because they are not professionally

educated to handle classrooms with ADHD children, teachers with unfavorable perspectives on working with ADHD kids regard them as more onerous, painful, and dull (Rush & Harrison, 2008).

Furthermore, elementary school teachers discovered that ADHD students are difficult to teach and require additional support and backing, but they are unable to provide it properly due to a lack of professional training and support materials; they are dissatisfied with the unnecessary amount of extra effort and struggle in their classrooms (Mohammed, 2018).

Furthermore, teachers with a favorable mental attitude toward students with ADHD sought additional training on the job in updated, verified, and validated teaching skills, behavioural organization, and classroom management. It is a huge task to teach and manage the behavior of teenagers with ADHD, was a common response in this capacity. As a result, I'd like to see more training focused on teenagers with ADHD (Badia & Chumpitaz-Campos, 2018).

In addition, another conclusion was drawn from the survey responses, which indicated the teacher's view of inadequacy in the educational system. Teachers have indicated that their inadequacy in education is related to broad methods to comprehensive classroom management, according to several academics. It was also discovered that classroom teachers' good attitudes toward ADHD pupils result in more specific coaching and behavioral organizing abilities for these students.

Teachers' frustrations with special education arrangements were described in this study by responses such as more effectiveness of behavioural interventions for adolescents with ADHD would be helpful and more interaction with the school psychologist would be beneficial instruction method for children with ADHD (Guerra, Tiwari, Das, Cavazos , & Sharma, 2017).

Elementary school instructors, according to Greene, Beszterczey, Katzenstein, Park, and Goring (2002), lack coordination, synchronization, and cooperation. The designated school instructor and the designated school's assisting staff member do not work together. This lack of communication would help to repress teachers' unfavorable attitudes, which would in turn create more negative attitudes toward ADHD students. Additional research has confirmed that teachers grow frustrated when interacting with ADHD students. Furthermore, it was discovered that general education school teachers experience significantly greater accumulative stress while interacting with ADHD students than when interacting with non-ADHD students. When compared to non-

ADHD students, the rate of negative interactions between teachers and students with ADHD is much higher. Teachers are required to attend, interact, and address pupils with ADHD more frequently than the rest of the students because they are more demanding in behavioural interactions. As a result, the teacher's attention span is longer for these children than for non-ADHD students.

There are a number of other elements that may play a role in teachers' impressions of ADHD kids. The study found that the amount of stress and anxiety instructors experience is significantly linked to the behavior of ADHD pupils in elementary school. Also, teachers may experience stress as a result of having to deal with higher levels of violence, behavioural difficulties, and oppositional behavior, as well as poor interpersonal interaction skills, in students with ADHD compared to those who do not have these issues.

The study also stated that this is a partial reason for instructors' increased stress and anxiety when dealing with misbehavior and hostility in students with ADHD concerns (Greene, Beszterczey, Katzenstein, Park & Goring, 2002). Furthermore, compatibility between the ADHD student and the teacher, among many other contributing elements, could be another major explanation for elevated anxiety and stress levels reported by classroom teachers, rather than only the children with ADHD.

2.8 ADHD Shift in Research

Children with ADHD and accompanying difficulties, such as educational difficulty and causality, are the target of many types of ADHD study. There is little evidence about instructors' ADHD knowledge and the acceptance of appropriate strategies for educating ADHD students or pupils who exhibit behavior that is directly or indirectly associated with ADHD (Kos et al., 2006).

General education instructors' experience and expertise gained while teaching ADHD pupils give essential data and information for understanding how teachers perceive ADHD and related diseases (Carbray, 2018).

The capacity of a teacher to accept ADHD treatment approaches together with behavioral interventions while teaching a whole class of ADHD and non-ADHD pupils opened up new avenues in ADHD research (Fabiano et al., 2013). Beginning in the early 1990s, researchers in Australia and the United States produced surveys to assess teachers' knowledge of ADHD, kicking off efforts to better understand the relationship

between teachers' ADHD knowledge and other variables including the number of years they had been teaching (Sciutto, Terjesen & Bender Frank, 2000; Kos et al., 2004).

The ADHD Knowledge Scale (K-ADHD) (Jerome et al., 1994) and the Knowledge of Attention Deficit Disorders Scale (KADDS) (Sciutto et al., 2000) were used to measure teacher ADHD knowledge and relationships depending on specific teacher characteristics using the same instrument designs (e.g., specific evidence regarding ADHD compared with the years of teaching experience).

The use of the KADDS as a validated instrument for assessing teachers' level of awareness and familiarity with ADHD is widely accepted (Hepp, 2009).

KADDS is a 36-item questionnaire that assesses three separate aspects of ADHD knowledge and awareness. There are 18 negative items and 18 positive items. These are (a) signs/diagnosis of ADHD, (b) general statistics on the type, causes, and impact of ADHD, and (c) ADHD management or coping, with each question having three options: true, false, and don't know (Sciutto et al., 2000).

The K-ADHD scale is divided into two sections. The first section covers 20 socio-demographic objects such as ADHD training, gender, age, and so on. The second segment has 20 items that are true or false (Jerome et al., 1994). The Information of Attention Deficit Disorder Questionnaire was designed by Youssef et al., (2015) to examine teachers', therapists', and leaders' awareness and attitudes concerning ADHD in school-aged children. Riley's instrument has two parts, similar to that of Jerome et al., (1994). The first portion asked participants about their socio-demographic characteristics, while the second half used 27 true/false questions to test educational professionals' knowledge of ADHD. Around 77 percent of participants had not gotten ADHD training when they became teachers, and 27 percent had not received training after college, indicating that each factor supported either a favorable or negative conclusion (Youssef et al., 2015). The Attention-Deficit Hyperactivity Disorder Knowledge and Opinion Survey, developed by Power, Hess, and Benett (1995), is a 31-item true/false answers knowledge scale (AKOS-4).

Carbray (2018, p.) discovered a gap and insufficiency in the published literature surrounding instrument development" after designing four versions of the AKOS. The ADHD questionnaire was developed by Kos et al. (2004) to test both real and perceived knowledge of ADHD based on a previous scale.

Kos et al. (2004) employed a comprehensive test with 131 items divided into six sections to collect a range of information about ADHD. Multiple issues arose as a

result of design flaws and survey length, including the interpretation of participant responses.

Prior to professional development, Niznik (2004) developed an educator ADHD knowledge assessment tool to examine the level of ADHD understanding among elementary teachers. The survey had 23 questions with a total of five multiple choice responses and only one correct answer; however, the instrument validity in the literature was not supplied. The knowledge about ADHD questionnaire (West, Taylor, Houghton, & Hudyma, 2005), the knowledge about ADHD questionnaire (H. A. Jones & Chronis-Tuscano, 2008), and the knowledge about ADHD questionnaire (H. A. Jones & Chronis-Tuscano, 2008) are three additional instruments used to gauge teachers' attitudes and knowledge of ADHD (Carbray, 2018). The comprehensive investigation helped to measure multiple instruments used to evaluate educational professional familiarity of ADHD.

To assist proper teacher professional development, Carbray (2018, p. 173) advised a detailed formulation of a valid instrument for detecting identifiable "gaps in teachers' knowledge." Using adaptations of questionnaires prepared by their predecessor Jerome et al., (1994), who said that 77.5 percent of instructors correctly answered ADHD knowledge items, whereas Barbaresi & Olsen (1998) found 77 percent right replies concerning. According to Kos et al., (2004), 60.7 percent of knowledge responses were valid.and Sciutto et al. (2000) reported 47.8% correct responses with mean score on similar knowledge questionnaires.

Carbray is a fictional character created by Carbray (2018) Despite the fact that ADHD has sparked a great deal of research, fresh research is piquing interest in how teachers' expertise and attitudes affect children.

2.9 Initial Symptoms of ADHD and Stress Level of Teachers

Primary school instructors are frequently the first to identify ADHD in pupils, which has a direct influence on early learning and basic skills (Kos et al., 2006).

Teachers' experience teaching kids with ADHD in a mainstream classroom is an important factor in their understanding of the disease (Sciutto et al., 2000; Kos et al., 2006). Many class teachers who have taught students with ADHD symptoms in a general classroom setting may have more ADHD knowledge than those who have little or no experience teaching ADHD students; however, there is little information available about teachers' attitudes and perceived effectiveness when teaching ADHD students.

Greene examined teacher stress levels in relation to teaching students with ADHD across different domains, taking into account both student and instructor characteristics. This study used a sample of 64 elementary general school instructors. They worked with 64 students who had ADHD symptoms and were given basic academic instruction. When compared to peers without ADHD, the study hypothesized that “students with ADHD are expressively more worried and under stress to teach (Greene et al., 2002). In comparison to educating classmates without ADHD characteristics, primary school teachers' subjective emotions of anxiety and irritation were much higher while teaching students with ADHD symptoms. (Greene et al., 2002).

Teachers' stress levels have increased as a result of the problematic behavior displayed by children with ADHD, and this stress has an impact on their professional ability. Meeting accountability standards and overarching company ideals are additional sources of stress (Burr & LeFevre, 2020).

Teaching children with ADHD is more stressful, unpleasant, and demanding for teachers, according to study. These variables may contribute to teachers' negative perceptions and biases toward students with ADHD (Topkin, Roman & Mwaba, 2015).

Teachers with insufficient experience and training in teaching students with ADHD are more likely to have a negative attitude and biases toward such students. Teachers can utilize a variety of approaches in the classroom for students with ADHD, including behavior modification tactics, anger management techniques, contingency management skills, and effective use of positive reinforcement techniques. Furthermore, contingency management measures such as the mechanics of setting up a point or token-based system, as well as the establishment of behavioural contracts, have been shown to be effective in moulding the acceptable behavior of ADHD students (Ogg, McMahan, Dedrick & Mendez, 2013).

Completing specific prescribed duties in order to obtain a privilege or a prize, such as stars or points, is a condition of the above-mentioned tactics. These tactics aid in the reinforcement of positive behavior and the discouragement of undesirable behavior in students with ADHD. These methods may aid in the remodeling of brain circuits to produce more appropriate behavior. Furthermore, these methods are quite helpful in enhancing social behavior as well as academic success (Ogg, McMahan, Dedrick & Mendez, 2013).

The literature analysis also revealed that teachers are unaware of any specific types of student behavioral issues. There was not a single study in this topic, especially

in the setting of Pakistani elementary schools. There hasn't been much discussion in earlier studies about teachers' understanding of ADHD's learning difficulties and the usage of various teaching interventions. Recognizing this gap in the Pakistani situation, the researcher chose to conduct study in order to produce effective educational interventions for ADHD pupils at the basic level.

2.10 Theories and Theorist of Classroom Management

In a normal classroom setting, instructors play a variety of functions, according to Umoren (2010). The classroom manager is one of the most important responsibilities. Effective learning is not possible in classrooms that are less managed. When classes are not properly organized, when students are not clear about class's rules and regulations in place to control their behavior then anarchy takes over the classroom. vast range of skills and tactics are included in classroom management that refers to the teachers that employ during the school day to retain learners prepared, organized, attentive, observant on task, and academically productive. Teachers and kids both suffer in a messy classroom. Teachers struggle to teach, and pupils learn less than they should.

According to Morse (2012), well-managed classrooms provide a conducive environment for teaching and learning for both teachers and students. One thing to remember is that a well-managed classroom does not arise overnight; it takes a lot of effort on the part of the instructor. Many theories and thinkers have been developed around the issue of classroom management. Many theories have proposed different strategies for instructors to incorporate this coherent learning environment into the classroom.

Such theories can be used by teachers to promote their own educational philosophy and classroom management. While teaching, keep in mind that successful classroom management leads to a smooth-running classroom where learning can take place. Teachers manage the classroom by being involved in it, anticipating and eliminating issues, and supporting acceptable behaviors.

2.11 Significance of Behaviour Management

According to Williams good behavior management is not about your capacity to reprimand students, administer punishments, or yell. These are not, and never have been, effective classroom management tactics, and students can see right through them. They understand that a good teacher isn't one who can simply keep the class quiet. No, effective behavior control is more positive. It creates an environment that is both

healthy and inspirational in the classroom. It encourages student participation and cooperative learning. Furthermore, it fosters the social and emotional aspects of learning that are so important in the classroom (Williams, 2008).

Students are aware of when they have a school instructor with whom they can cause disturbances and when they have a teacher with whom they must be respectful. They respect the latter, and it is only through respect that good learning can take place. Children are astute. And if they don't believe you're capable of doing the job, they'll act accordingly. As a result, get it properly. Here are some more reasons why good behavior management is so important in your classroom. By the way, improving your skills in this area is completely manageable (Abel, 2011).

2.12 Effective Classroom Management Lays the Ground for Effective Teaching and Learning

According to Obot a well-managed classroom setting that adheres to classroom norms and procedures is a requirement for effective teaching. Disruptions occur when people are bored, confused, or trying to keep up; learning occurs when everyone is focused, interested, and involved. When no one knows what is expected of them – when the classroom becomes a free for all then it is impossible for pupils to focus and believe that it is even worthwhile to focus. Creating a pleasant learning environment in which students respect each other and their professors helps them to focus on what they were hired to do in the first place: teaching. (Obot, 2010).

2.13 Good Behaviour Management Saves You Time

Poor behavior and classroom disruptions have been seen to cost pupils roughly forty days of instruction each year. From this perspective, it almost seems worthwhile to double the length of everyone’s holiday and just send the kids home. But it is an important point. Poor classroom management wastes so much time. If you feel like you get to the end of every lesson having covered only half of the things that you should have done, it is probably due to your classroom management techniques. So, in order to be more efficient in class, in order to get through all the material that you would like to get through, a focus on your classroom discipline might be your saving grace (Elias & Schwab, 2006).

2.13.1.1 Classroom Management Skills Develop Consistency, Routine, and Habit

Teachers and students come into school every day and, if teachers have no proficiency in managing classroom or are unable to apply management skills and desired discipline from students then your students will never know what to expect from them. Expectedness, steadiness, and routine are some of the key elements for day-to-day life that permit effective learning. If teachers continuously navigate new conditions, there is much less chance of being able to focus on the things to which they are supposed to be paying attention. So, having classroom procedures and teaching strategies that work and that students can get used to, are very crucial, and it will only make teachers' life easier in the long term (Nasey, 2012).

2.13.1.2 Strong Behaviour Management Strategies Reduce Disruptive Behaviour Later On

Hattie mentioned that the elements of good classroom management are cumulative. If teacher enacts an effective class management strategy from the very first day of school, the chances are that it will be much easier to sustain throughout the year. However, if teacher starts as a strict person, students are more likely to think twice before they think about disrupting the class or calling out in future. Classroom expectations will be different, and they will know that there will be consequences for behaviour that is not up to scratch. Remember that the secret to classroom management is to get students on their side early on, because then everything will become much easier (Hattie, 2009).

2.13.1.3 Effective Behaviour Management Creates a Healthy Learning Environment – and Increases Student Achievement

Learning takes place best under predictable and recognizable classroom conditions that are animated by curiosity and mutual respect. If teachers have eyes on maximizing student achievement, the same applies here too. Teachers know that when they have won behaviour management, when their students come into the classroom wanting to learn, when they sit down ready to get going with the class, this is the time. This is their ideal situation. But teachers can make it happen by using simple class management strategies to gain their attention and interest. Don't be too dry and factual – but draw out the implications of their learning for them (Jones & Jones, 2012).

2.13.1.4 It Builds Teacher-Student Relationships – and Makes their Life Easier in the Long Run

Effective classroom management should change the dynamics of the classroom from one of pure informational exchange to one that is much more interactive, trusting and easy (Durlak *et al.,* 2011). Classrooms are full of people, whilst teachers' responsibility is for their learning. There is absolutely no reason why teachers should not be able to get on with them. If the teachers respect them, and they respect the teacher in turn, there is ample opportunity for productive and enjoyable relationships. This does not only improve their chances of learning but also high achievement. Moreover, it makes teachers' work easier. They should not fight with their students. If they feel like that's happening, they should take a serious look at their classroom management techniques.

2.14 Importance of classroom management

Martin and Sass (2010, p. 1125) define classroom management as a "umbrella of categories that include learning interactions, learning, and student behavior." Teachers perform a multitude of jobs in a typical classroom, but one of the most important is classroom management. Effective teaching and learning are impossible in a poorly managed classroom.

"The best educators do not teach content; they educate people," writes Walker (2009, p. 122). He believes that if teachers have complete control over their classrooms and use a range of ideas and techniques to urge students to behave well, classroom management will be more effective.

According to Martin & Sass, "discipline is a subclass of classroom management, and classroom management is a subset of instructional management" (2010, p. 20). The production of effective classroom lessons that keep students engaged and on task is at the heart of instructional management. Students are impressionable, and teachers who know how to get the best results for all students in the classroom are vital.

The behavioral management expectations that a teacher has for their students are (non-interventionist, interventionist, and interactionist).

Effective classroom management takes time and varies from instructor to instructor, depending on the subject and age group, as well as the teacher's personality and teaching style. There are many different classroom management styles, just as there are many different educational strategies (Etheridge, 2010).

2.15 Researchers Observed Classroom Management

Numerous research investigations have identified classroom management as a crucial factor influencing students' academic achievement (Marzono, 2008). The value of classroom management has been established by researchers. Little and Akin-Little (2008) administered a self-assessment survey to 149 teachers, which covered four important aspects of classroom management: classroom rules, better classroom atmosphere, reinforcing tactics, and reductive processes (Little & Akin-Little, 2008).

According to the poll, 83 percent used verbal reprimands in response to disruptions in class, 97 percent used verbal praise as incentive for acceptable behavior, and 63 percent had a recurrent behavioral problem. Students' freedoms were taken away, and 10% of cases involved the use of corporal punishment to punish repeat offenders. In addition, Taila (2009) discovered that when students rate the instructor's management technique as well-planned and well-organized, student achievement improves. Little and Akin-Little (2008) and Taila (2009) found that teachers employ rules, procedures, and sanctions to regulate the classroom in a variety of ways.

Gilpatrick (2010, pp. 59-60) observed in a study of 22 teachers in grades 3-6 that "100% of the instructors thought that the ineffectiveness of their classroom management tactics could discourage them." Despite this, 64% of teachers believe their present tactics are effective in reducing disturbances caused by noncompliant students." Gilpatrick's findings show how important it is to figure out the best classroom management tactics for achieving great student outcomes (Marzono, 2008).

2.15.1 Impact of classroom management on students' academic achievement

The backbone of education and learning is classroom management. It provides a refined experience throughout one's life. It is concerned with activities that are either planned or disordered in order to promote or discourage pupils in a learning environment. A pleasant atmosphere can be viewed as a complete platform for the human psyche's approach; it satisfies the entire need and desire of human beings who are heading in a specific direction (Gbollie & Keamu, 2017).

Adedigba (2015), Effective teachers Provide a disciplined, compassionate environment that meets students' personal and intellectual needs. Effective teachers have high behavioral standards, plan, implement, and develop appropriate teachings, and set and enforce behavioural regulations. Such teachers are seen as authoritative figures in the classroom because they respect their students as individuals with rights, values, and feelings. To respect the dignity of the students, they carefully chose their

words and actions. They actively engage students in interesting, demanding educational activities and deliver lots of praise. In other words, they hold their students and themselves up for success.

2.15.2 Impact of classroom management on students' behaviour

Schools now have more behavioral concerns as a result of cultural changes, which affect how a teacher administers the classroom (Etheridge, 2010). Classroom discipline concerns are worsening today than they were in the past, affecting pupils' behavior (Colavecchio & Miller, 2002; Etheridge, 2010). Students' behavior is negatively impacted by classroom management concerns. As a result, teaching kids with learning disabilities necessitates taking into account both effective subject teaching and behavior management (Gauthier, Bissonnette, Richard & Castonguay, 2013).

"Using a set of educational techniques and strategies" is what managing student behavior entails. It is attempted to prevent and successfully control inappropriate behavior on the one hand, and to develop and maintain a climate that supports both teaching and learning on the other." (P. 26 in Bissonnette et al., 2016).

As a result, in effective behavior management, there are two types of behavioral interventions: preventative or proactive interventions and remedial or corrective interventions. Proactive interventions aim to create an environment that is conducive to teaching, learning, and preventing inappropriate conduct. Preventative interventions assist children to acquire appropriate behaviors, whereas remedial or corrective interventions are employed when students engage in unsuitable behaviours (Bissonnette et al., 2016).

2.16 Key Theorists on Classroom Management

There is no single, comprehensive, universal explanation of how people learn, and no instruction manual for teachers to follow. Instead, there are numerous theories, each with a specific psychological and epistemological foundation. Understanding theories and the rationale behind them is critical for understanding learning in the context of a diverse learner.

The following are some of the most significant educational theorists (Gage, Scott, Hirn, & MacSugaGage, Scott, Hirn, & MacSugaGage, Scott, Hirn, & MacSugaGage, Scott, Hirn, & MacS (2018).

Teachers must support students in learning to create self-control, according to Fredrick Jones's (2000) non-adversarial technique. Teachers can help children develop self-control by utilizing appropriate body language, developing an incentive structure, and providing prompt assistance. Self-control students build confidence and are better equipped for the future (Kraemer, 2009).

The Social Learning Theory, which was based on the personality theory, was founded by Bandura. He claims that people learn from one another via observing, imitating, and modeling. His technique has been labeled a bridge between behaviorist and cognitive learning theories since it involves attention, memory, and motivation. He defined self-efficacy as confidence in one's ability to plan and carry out the actions necessary to deal with probable events. Self-efficacy is now an important part of classroom management (Gabriel & Matthews, 2011).

Students must be conscious of their responsibilities and make their own judgments regarding their learning and behavior in the classroom, according to William Glasser's (1997) Reality and Choice ideas. Students must have a say in their education, and if they help pick their curriculum and classroom norms, they will feel more in control of their learning, take pride in their participation, have higher self-esteem, and display stronger levels of self-confidence and cognition. This approach to classroom management creates a comfortable learning environment because it is mostly their domain (Wong, n.d.).

Ford emphasizes the Responsible Thinking Process (RTP), which is intended to teach educators how to teach learners to develop a sense of responsibility for their own lives while also respecting the lives of those around them if properly executed. This non-punitive and non-manipulative school discipline system is truly unique. It promotes mutual respect by teaching students how to think about their behaviors in terms of the laws that govern the environment in which they find themselves. This instills in the children a sense of accountability for their actions. The focus of this classroom disciplinary procedure is on how students can attain their goals without interfering with others who are attempting to do the same. In a nutshell, it teaches kids how to treat others with respect (Johansen, Little & Akin-Little, 2011).

Piaget (1983) presented Constructivist Learning Theory, which is concerned with children's cognitive development. Children, according to Piaget, go through phases of cognitive development that allow them to mature and develop as individuals (Kleinman & Saigh, 2011).

Theory on Assertive Discipline, developed by Lee and Canter (1976), maintains that rules and behavior expectations must be clearly articulated and implemented. Teachers should never threaten pupils, but should instead offer reasonable repercussions for bad behavior. The teacher must talk clearly and maintain continual eye contact for this strategy to function. This concept holds the teacher accountable for poor student behavior. (Alderman & Green, 2011).

Teacher Effectiveness Training (TET) was offered by Thomas (1974). What distinguishes effective instruction from ineffective instruction? The most essential factor is the quality of the teacher-student connection. It is more important than what the teacher is attempting to teach or who the teacher is attempting to educate. TET equips teachers with the communication and conflict-resolution skills they need to form strong bonds with their students, resulting in less conflict and more time for teaching and learning. Hundreds of thousands of teachers around the world have used this method to great success (Korpershoek, et al., 2016).

According to Kounins (1970), mastery of classroom management necessitates the ability to educate according to the group's learning style rather than the individual's, as well as the ability to organize courses and teaching methods. Classroom management is to create an atmosphere that encourages pupils to study while also inspiring them to do so. Glasser and Kohn's approaches are similar in that Kounin believes that the key to good classroom management is to avoid management problems in the first place by implementing great organization and preparation (Jennings & DiPrete, 2011).

Applied Behaviour Analysis (1968), formerly known as Behaviour Modification, became widely employed in 1968 as a study of human behavior. The definition written by Baer, Wolf, and Risley in 1968 is still the best. The systematic application of interventions based on learning theory principles to modify socially significant behaviors to a meaningful degree, as well as demonstrating that the therapies utilized are accountable for the behavior improvement, is referred to as Applied Behaviour Analysis (Wisetrinthong, Sirisuthi & Weangsamoot, 2012).

Dreikurs (1972) believed that discipline is based on mutual respect, and that all humans have a basic need to belong and feel a part of a group, and that all pupils want to feel appreciated and capable in the classroom. He refers to this drive to belong as the genuine goal of human social behavior. When students are unable to accomplish their true goal of belonging, they change to a series of false objectives, such as attention,

power, retaliation, and inadequacy. This is what happens when students misbehave (Thorsborne & Vinegrad, 2006).

According to Kohn, grades and awards diminish intrinsic motivation (the desire to learn), which is the exact reverse of what instructors have been taught. Because most classroom competition norms anticipate that for every winner/topper of the class, there would be thirty-nine losers dealing with the intrinsic self-esteem challenges surrounding their constant failure, the punishment/praise grade system explains why the system has failed so many students. He thinks that rewards reduce students' natural motivation and interest in a subject. The major responsibility of the teacher is to help students to find and develop their inner genuine selves, which includes what they believe, feel, and care about on a deeper level; another is to ignite students' enthusiasm in studying. The initial purpose of education should be to foster a desire for more education and a lifetime obsession with learning, followed by depth and critical thinking (Adeyemo, 2012).

Skinner believed that the most effective way to modify behavior was to change the environment. He advocated for many of the modern-day progressive educational reformers' teaching approaches, such as scaffold instruction, tiny units, repetition and revision of instructions, and quick feedback. Skinner was against the use of punishments in schools or as a general approach of behavior change. Penalties, he claimed, are ineffective in compared to rewards. Regular use of reinforcement (i.e., rewards) can influence and affect students' behavior (Algozzine, Wang & Violette, 2011).

Dewey believed that democratic processes with consequences should have an impact on classroom management. As a method of gaining experience, he suggested a notion of social learning. Children may learn, cooperate, share, and care for one another, according to Dewey, if the teacher acts as a facilitator. He believed that instructional management required a natural method that included direction and guidance, and that behavior management entailed the sequential behavior evolution of pupils. Many teachers still utilize this method as a fundamental component of classroom management today (Tal, 2010).

2.17 Teacher Training on management of ADHD

Teachers have an important role in determining the findings, administration, and effective therapies for ADHD students. Because the student's direct knowledge and

involvement in the classroom is crucial, the student must sit peacefully, pay close and extended attention, follow teachers' orders, and intermingle with classmates' incorrect social behavior. It is vital for ordinary classroom teachers to have a thorough understanding and knowledge of ADHD pupils and ADHD concerns in order to complete this important component (Alkahtani, 2013).

Numerous research, on the other hand, have looked into instructors' lack of knowledge and awareness in the domain of ADHD. Researchers (Jerome et al., 1994) conducted the study and discovered that both Canadian and American working general classroom instructors had insufficient professional training on ADHD in terms of quantity and quality of knowledge. A study conducted in Florida looked at three different sources of general elementary school teachers to learn more about ADHD. Self-study, ADHD exposure, and official training were the three sources (pre-service, in-service).

One-fourth of the 365 primary school teachers who took part in the study reported receiving no in-service training on ADHD difficulties, and half did not receive any pre-service training on ADHD treatment techniques (Bussing, Gary, Leon, Garvan & Reid, 2002).

94 percent of the teachers who took part in the research said they wanted more ADHD training. Furthermore, the teachers expressed their lack of confidence in coping with the high rate of stress associated with teaching ADHD students. The researchers concluded that general education instructors should get ADHD training both pre-service (before joining the service) and in-service (during their service), including stress management and skill-based teaching, based on their findings. (Bussing and colleagues, 2002).

Stormont and Stebbins used a survey to assess preschool instructors' education, acquaintance with ADHD, and insights into the condition. These participants' most common responses to the question of how they first learned about ADHD were in an informal setting, such as a weekly or monthly magazine, a random journal article, a TV program, or a radio program. Having formal and particular training or a course on ADHD was the least popular response. A workshop or in-service training about ADHD management and handling was mentioned by less than half of those polled (Stormont & Stebbins, 2005).

This finding is significant and alarming because general classroom teachers may only have limited and incomplete facts from the elementary media, such as TV and

radio programs, without dedicated training and specific courses related to ADHD, and only relying on information and knowledge from reading ADHD relating journals, with outlines of published scientific research (Stormont & Stebbins, 2005).

Teachers' education must include the concept of teaching students with ADHD who are exhibiting disruptive behavior. It is difficult for a teacher to tackle the problems of having ADHD kids in the classroom if they do not have adequate subject knowledge. Simply providing broad information about ADHD does not provide insight into the identification and assessment of ADHD in the younger generation (Staff et al., 2020). It is clear that school teachers lack the qualifications or skills necessary to categorize or control the behavior of students with ADHD (Stormont & Stebbins, 2005).

Another study looked at the impact of several aspects like the level and duration of ADHD training and education on the visions of ADHD students as well as the quality of facilities required for ADHD students. The effective and practical understanding and knowledge of ADHD among general classroom teachers has a positive impact on their perceptions of ADHD pupils and the level of services provided to them.

According to Cormier special education teachers have a high to average understanding and awareness of ADHD, and they commonly pursue supportive, encouraging programs and friendly communication to help students with ADHD. They can develop helpful behavioral and educational interventions with the use of knowledge. They believe that ADHD pupils are more likely to impede social ties than their non-ADHD peers and friends because of the complexity of their behavior. These teachers are also less confident in their ability to deal with these youngsters in a good and productive manner (Cormier, 2008),

2.18 Intervention Strategies Based on School Settings

The intervention strategies based on school settings are defined as tactics, strategies, approaches or methods that are employed in the general classroom environment and school situations to assist and strengthen evidenced-based optimistic behaviour.

2.18.1 Types of school based interventions

The two forms of school-based interventions are classroom interventions and school-based interventions. School-based therapies are especially important from a multimodal perspective because this is where typical ADHD behaviors are most dysfunctional, contributing to worrisome rates of school failure and dropout, which can

reach up to 35percent in high school (Dorneles, Corso, Costa, Pisacco, & Sperafico, 2014).

Behavioral therapies have been recognized as an alternative or complement to pharmaceutical treatment within the school system, given that the field in which educational agents function goes beyond biological issues (DuPaul & Stoner, 2015).

2.18.2 Classroom behavioural interventions and school based interventions

Behavioral therapies have been recognized as an alternative or complement to pharmacological treatment within the school system, given that the field in which educational agents function extends beyond biological issues (DuPaul & Stoner, 2015).

In comparison to other intervention strategies, the most fruitful interventions are those that combine process-based and results-based interventions in an equal proportion. School-based interventions, on the other hand, are fixed-mode interventions that are implemented uniformly throughout the school (Rosen et al., 2019).

Furthermore, the interaction between school and family is an important consideration for boosting the efficacy of school interventions. Because when parents and teachers are well-informed and educated on ADHD, they have realistic goals for ADHD students and are eager to work together to achieve the pre-determined and well-planned goals of dealing with ADHD. Additionally, during the process of developing intervention options for students with ADHD, specific internationally accepted protocols should be followed (DuPaul et al., 2013).

The procedure's first guideline proposes using statistics to make decisions about evidence-based intervention growth, assessment, and amendment. For ADHD students, empirically supported intervention techniques must be used. Furthermore, monitoring and evaluating the success of the intervention strategy is an ongoing procedure (Harrison, Soares, Rudzinski & Johnson, 2019).

When choosing and implementing an evidence-based intervention strategy, the second guideline to consider is child advocacy. The intervention technique's main goal should be to improve the child's welfare and self-esteem rather than to provide a comfortable classroom environment for the general classroom instructor to teach in. Intervention techniques and processes must be systematically identified and clearly specified, as well as delineated tasks must be carried out with honesty and morality. The third suggestion concerns task that should be clearly stated and understood by all participants in this course. This ensures that the intervention is carried out properly. The fourth recommendation is to encourage increased frequency of appropriate behavior

and/or educated learning. This means that the effective intervention should provide the individual with a proper path of action or improve their understanding of themes and subjects. Unsuitable behavior, such as shouting, running here and there, disturbing, changing seats during a class lecture, and calling out responses in the classroom, must be reduced by an appropriate intervention method (DuPaul & Stoner, 2003).

The fourth rule is that the source of an ADHD child's behavior must be identified. This means that the impact of an intervention technique on a student, teacher, or classroom environment must be determined after it has been implemented. Teachers that are qualified and trained to apply a variety of evidence-based teaching approaches, both instructional and behavioral, are the most effective and well-prepared to teach in these many learning settings in the classroom, and will consequently shine as a good educator (Baker, 2005; Gaudreau, Royer, Frenette & Beaumont, 2013).

Secondary reinforcement, which delivers the prize immediately, is one of the essential elements of behavioural reinforcement or satisfaction. Specifically, incentives are granted on the condition that ADHD pupils improve their behavior performance and efficacy. This method can help to enhance classroom behavior and academic performance (DuPaul & Stoner, 2003).

Appropriate behavioural reinforcement intervention should be carried out in accordance with a set of procedures. The initial step is to meet with the school psychologist and schedule classroom observations to assist identify the specific problematic behavior and classify the desired behavior. The important target is the behaviours that a teacher would like to exchange with a more suitable one (Tambara, 2015).

Similarly, goal behavior refers to the specific actions that the teacher wants the ADHD student to do in various contexts, such as sharing and cooperating with friends while playing. Teachers can use these tokens to adjust unwanted behavior once the goal behavior has been selected. Tokens can be tangible rewards such as gifts, stickers, or praises such as well done, good job, Bravo, and so on. For a student to win, the number and quality of incentives and prizes should be proportional to the amount of work put in by the student for the assignment (Andersen, Nissen, & Poulsen, 2016).

The value of tokens is determined by the difficulty level of the task. When compared to easier activities, a work that takes longer or is more difficult to perform will have more worth tokens. Students and teachers should consider a proper order and procedure of activities after deciding on the type and value of incentives and rewards.

To gain the tokens, the pupil can continue to trade. If the teacher talks and persuades the students' parents to coordinate this intervention at home, the instructor will be able to achieve the intended effects more quickly. As a result, by earning tokens at school and at home, both the home and school contexts can be used to assist and nurture good behavior modification (Barkand, 2011).

The teacher should complete the dialogue by explaining and demonstrating the proper behaviors in a clear and appropriate manner in order to obtain a token. To ensure early triumph and beneficial intervention, the initial phase of intervention should be modest and standardized presumptions should be at a sensible level. The first couple of days are the most productive (DuPaul & Stoner, 2003).

For observation and evaluation of the intervention's effects on student behavior, a continuous technique could be used. This goal is met through implementing various outcome actions and having a discussion with the parent, teacher, and school psychologist who are directly involved in the intervention's execution at home and at school. The results of these treatments will determine whether or not secondary reinforcement is introduced into the intervention program. Furthermore, continuous outcome monitoring is required for the eradication of ineffective interventions and the introduction of new interventions.

Furthermore, several studies have shown that the contingency contract is another sort of intervention that has proven to be effective with students with ADHD. A contingency contract is a written agreement between the teacher and the student that specifies what is considered appropriate and inappropriate behavior in the classroom. To ensure adoption and exhibition of suitable and socially accepted behavior, a combination of token reinforcement program and planned intervention is used. When compared to reinforcement within this intervention exclusively, token-based reinforcement will deliver the intended results and outcomes sooner (Corkum, Elik, Blotnicky-Gallant, McGonnel & McGrath, 2015).

Students with ADHD benefit from self-reinforcement and self-monitoring (DuPaul, Gormley & Larac, 2014). These self-management methods help students learn to control their impulsive, chaotic, and non-reflective behavior. The youngster will learn to examine, record, and assess his own social and academic behavior, as well as reward himself, using the self-monitoring approach. For example, a student might keep track of how many questions he completed on his arithmetic task and how many

questions he completed in the time allocated. After that, the teacher would go over his evaluation again and offer him suggestions and aid in finishing his work.

Glass addressed the key characteristics that influence instructional practices while working with students who have attention deficit hyperactivity disorder. As a result, it may be stated that ADHD is prevalent in the educational setting. Medical and scholarly study has yet to define the genuine and general hypothesis for the cause of ADHD, but there is a clear correlation between several alternatives. The ADHD diagnosing procedure involves multiple school staff, medical people, and instruments. Many rating scales that assess a student's behavior in the classroom are established through observation and research by school professionals (Glass, 2001).

In general, boys have a higher rate of typical ADHD symptoms than girls. Students with ADHD may struggle in the classroom with auditory vigilance, verbal fluency, and attentive learning. The following are some probable explanations for the link between ADHD and learning difficulties.

According to Furtick a student's ADHD can be caused by a learning disability. According to the findings, attention problems are caused in part by repetitive or boring situations, which are more likely to occur in classes with a higher workload (Furtick, 2010).

In the classroom, learning disabilities might lead to a lack of desire. A lack of motivation to attain particular goals might lead to symptoms that are comparable to those seen in students with ADHD in the classroom. Another possibility is that students with ADHD symptoms may experience learning difficulties and lower academic accomplishment. The inability to pay constant attention and focus on prescribed tasks causes a child's inability to capture and retain important knowledge, resulting in learning difficulties. Furthermore, students with ADHD have difficulty forming and maintaining long-term relationships with peers.

According to many research, the aforementioned issues are caused by ADHD symptoms as well as a lack of comprehension and awareness of social cues. However, just a small amount of research has looked into how and what teachers think about students with ADHD (Furtick, 2010).

According to Guerra & Brown numerous research have indicated that labeling kids with ADHD as having ADHD has little impact on instructors' and peers' negative perceptions of them. Rather, it is the result of students' own actions that might contribute to poor peer and teacher perceptions. Teachers' negative prejudices and

opinions appear to be linked to their knowledge with and comprehension of ADHD syndrome, teaching experience and duration, and the sort of in-service training they get (Guerra & Brown, 2012).

As the number of pupils diagnosed with disruptive behavior continues to rise, teachers are being forced to reconsider their present teaching methods and classroom setting (Hernandez et al., 2016).

As a result, a psychomotor-based program was proposed which uses playful and strategic games to improve memory, attention, and focus (Costa, Moreira, & Jnior, 2015).

The Daily Behavior Report (DBR) or Daily Registration Card (DRC), Traditional Database Academic Intervention (TDAI), Intensive Database Academic Intervention (IDAI), Activity Schedule, Room Management Training Program, and Flashcards with Reading Racetrack are among the teacher-mediated interventions still being studied. The DBR/DRC uses a record technique that contains a list of students' targeted behaviors (Fabiano, Vujnovic, Naylor, Pariseau, & Robins, 2009; Fabiano et al., 2010; Murray, Rabiner, Schulte, & Newitt, 2008) employs a record procedure that includes a list of students' targeted behaviors.

This protocol must be followed on a daily basis, and feedback must be given when specified behaviors are observed. In general, research using DBR/DRC find good benefits on academic skills, disruptive behavior and hyperactivity / impulsiveness (Fabiano et al., 2009; Fabiano et al., 2010), and parental and teacher adherence to the intervention (Murray et al., 2008; Vujnovic, Fabiano, Pariseau, & Naylor, 2013). The degree to which students are observed and given feedback differs between the TDAI and the IDAI, with the IDAI being more intense and systematic (Volpe, DuPaul, Jitendra & Tresco, 2009) Both strategies fostered and improved academic engagement.

So far as the ADHD studies are concerned, no research was found in the Pakistani context. The existence of ADHD students is evident in our context; therefore, the present research has been designed to generate guidelines that can be prepared for the improvement of learning of the ADHD students.

Since the intent of this study was to devise effective interventions for higher academic achievement and behavioural management of elementary level ADHD students, the exploration of certain interrelated factors were to be anticipated, such as the assessment of teachers' awareness about the concept of ADHD, the prevalence of

ADHD in classroom and teachers' knowledge about interventions used to manage undesired students' classroom behaviour.

Considering the importance of interventions for the modification of ADHD students' behaviour, several related studies were reviewed. Many studies were found which addressed ADHD interventions in the school context and are relevant for the educational process of such students. In the context of ADHD, most of the literature has focused on the academic performance, while some of the literature also focused on interventions which can reduce the characteristic of ADHD.

CHAPTER-3
METHODOLOGY

Methodology is a significant part of any research; it provides detail about method which has been used by the researcher to conduct study. Methodology gives viewers complete and clear picture of the research design along with procedural details.

3.1 Research Design

The research design is the framework of research methods and techniques which ought to be chosen by an investigator, keeping in view the need. The research design allows investigator to improve research methods that are suitable for the subject matter and set their studies up for success. The research design explains the type of research used in the present investigation. In fact, experimental, survey, co-relational, semi-experimental, descriptive, qualitative and quantitative research designs are commonly used in researches. The selection of appropriate research design generally increases trust in the accuracy of the collected data. The essential elements of the research design include purpose statement, techniques to be implemented for collecting and analyzing research and type of research methodology (Teddlie & Yu, 2007).

Since the nature of this research was descriptive, therefore, for detailed description at various phases, descriptive research design and experimental design (causal-comparative) were used.

An attempt was made to explore the various facets of the phenomenon under consideration through descriptive research design. Experimental (causal-comparative) research design was used to test the effectiveness of the developed interventions on selected ADHD students, behaviour management and academic achievement.

The data were collected by using four research questionnaires, three questionnaires were used to get information from teachers and one questionnaire was used to get information from students who were diagnosed as ADHD.

On the basis of research findings and litrature review, the interventions for handling of ADHD students were proposed. The pProposed interventions were just assumptions if not tested under experimental conditions. Therefore, in this study in the second phase, experimental desgin was used to test the effectivness of interventions that were developed.

3.2 Research Population

The population of the study included -- all the male and female elementry school teachers and students of Rawalpindi (Public and private sector). During the data collection year, total 537 teachers were working at elementary level, whereas the total 41400 students were enrolled in the elementary level classes.

3.3 Sampling Size

The data was collected through stratified random and purposive sampling technique. Stratified random sample techinque was used to collect the sample of 200 teachers from private and public sector elementary level schools, while the purposive sampling technique used to collect the data from 300 ADHD students.

3.4 Sampling Technique

The stratified random sampling technique was used for the data collection from teachers, while the purposive sampling technique was applied for the selection of sample of ADHD students.

The researcher selected appropriate sampling techniques to get the best representative sample from the population of teachers, i.e., public / private sectors. Kelley, Clark, Brown and Sitzia (2003) considered it the most precise technique that allows to generalize the results from the larger population.

The researcher used a purposive sampling technique to select the sample of students for the data collection. This sampling technique is also called judgment sampling as “it provides the deliberate choice of a participant due to the qualities he/she possesses” (Etikan & Alkassim, 2016, p. 283).

3.5 Procedure of Data Collection

The following steps were followed for data collection.

Permission was taken from the concerned school heads. Stratified random sample technique was used for the selection of teachers. Consents were taken from the respondents. Three research questionnaires were distributed and after providing necessary instructions for filling the questionnaires up, they were requested to fill it the same day. Initially 286 teachers were selected as sample. 78 questionnaires were incomplete, 8 questionnaires were unfilled and only 200 questionnaires were completely filled which were retained for statistical analysis.

The purposive sampling technique was used for sample selection of the ADHD students. Initially teachers assisted and identified ADHD students; dignostic tool was used to ascertain the recommendation of teachers.

Initially 380 students were screened out as ADHD; they were requested to take part in the study by filling up the questionnaire and only 318 students were willing to participate in the study. The necessary instructions were provided to them. The returning questionnaires were analyzed after initial scrutiny. 18 questionnaires were found incomplete. Therefore, the rest of 300 questionnaires were retained for statistical analysis. Incomplete and unfilled questionnaires were rejected and the data analysis was performed on dully filled questionnaires only.

3.6 Data Analysis

The statistical analysis on the collected data was performed through SPSS by applying Mean (M), Standard deviation (SD) t-test and ANOVA.

Mean: the average score of the whole group, formula for using *Mean* is

Mean $\overline{\boldsymbol{X}} = \frac{\sum \boldsymbol{f X_c}}{\boldsymbol{N}}$

Standard Deviation: the spread of individual scores within the group, the formula for using standard deviation is

Standard deviation $\boldsymbol{S.D} = \sqrt{\frac{\sum \boldsymbol{fx2}}{\boldsymbol{N}}}$

t-test: used to test whether 2 groups really differ in their average scores

t-test $\boldsymbol{t} = \frac{(\boldsymbol{S.E})}{\boldsymbol{Std.E}}$

ANOVA: is an abbreviation of the analysis of variation, used to test whether more than two groups really differ in their average scores.

3.7 Research Instruments

Since the topic of this research was distinctive in nature, no specific instrument was available which could be used in this research to measure teachers' awareness about students having ADHDs in the elementary classrooms environment. To check ADHD prevalence in elementary classroom settings and to see the type of interventions teachers used to deal with students behaviour (having ADHD) in elementary classrooms, questionnaires were used. The majority of ADHD investigations were conducted in the context of the West. The Western lifestyle setting is equipped with all basic facilities at home, school, etc. Indeed, they are far advanced from us in teaching tools, teaching methods and treatment of their inhabitants.

The review of the related literature from the internet source, DSM-V (Diagnostic and Statistical Manual of Mental Disorders and interview with the elementary teachers were used as sources of getting baseline information for the development of the research questionnaires. For this purpose, guideline was also taken from Conner's behaviour rating scale (which was previously used in several studies conducted in Australia).

In order to collect data, four questionnaires were developed, three questionnaires were developed for the teachers. Among them 1st questionnaire measured teachers' awareness about students with ADHD (comprising 10 Items). The second questionnaire was developed to measure the prevalence of ADHD with students in elementary classes (20 Items), and third questionnaire helped measure traditional interventions used by teachers to deal with students having problematic behaviour ADHD (4 Items). The fourth questionnaire was developed to measure the students' self-awareness of the extent of ADHD classroom behaviour (36 items).

A separate demographic sheet was used to collect elementary school teachers' demographic information which contained 8 Items, and a separate demographic sheet was used to collect elementary school students' demographic information which contained 9 Items.

Elementary school teachers' Demographic Information Sheet

For the attainment of demographic information of teachers, the demographic sheet was developed that contained 8 items. The items were related to gender, age, teachers' qualification, special education courses, and sector in which they are teaching. Further it contained item related to experience, class level in which they teach and the average strength of their classes.

Questionnaire for teachers' awareness about ADHD students

The questionnaire for teachers' awareness about students with ADHD contained 18 items initially. After pilot testing, the final questionnaire had 10 items. Several options were given under every item from which the respondents had to select one (See Appendix-C).

Questionnaire for teachers' awareness about the prevalence of ADHD among students in elementary classes

The initial questionnaire for teachers' awareness about the ADHD prevalence among students in elementary classes contained 28 items. However, after conducting a

pilot testing, 20 items were finalized. The questionnaire was further divided into three parts. For inattentive, there were first 11 items, for hyperactive there were 5 items, and for impulsivity, there were 3 item (See Appendix- D).

A questionnaire related to interventions used by teachers to manage students having ADHD and issues in general elementary level Classrooms.

Primarily, the questionnaire was related to interventions used by teachers to manage ADHD students in elementary classes. It consists of four dimensions and 35 items. Later on 34 items were reduced to 29 after pilot testing. Several options were given under each item which a respondent has to select. (See Appendix- E)

Elementary school students' demographic information

The demographic information of students was attained by the questionnaire that was locally developed. The questionnaire of 15 items was developed having demographic information item, too. The pilot testing was conducted to finalize the questionnaire and the final questionnaire was reduced to 9 items. The finalized items were related to information about students' grade, gender, school sector, father's qualification, father's profession, mother's qualification, mother's profession, number of siblings and family monthly income, etc. (See Appendix-F)

A self-Awareness questionnaire for students about the extent of their ADHD Behaviour in Classroom.

Initially, this questionnaire contained 45 items for the establishment of content validity. It was presented to a panel of 4 experts. After their review, 5 items were recommended to be redundant. Therefore, they were excluded from the questionnaire. The rest 40 items were retained in the questionnaire for pilot testing.

Language analysis was performed and 4 more items were eliminated from the questionnaire and the rest of 36 items were retained after pilot testing. (See Appendix-H)

Table 3.1

Instruments used in Research Study

Instruments for Teachers	Instruments for students
1. A questionnaire for teachers' awareness about ADHD students.	1. A self-Awareness questionnaire for students about the extent of their ADHD Behaviour in Classroom.

Instruments for Teachers	Instruments for students
2. A questionnaire for teachers 'awareness about the ADHD prevalence among students having problem in elementary level classrooms	
3. A questionnaire related to interventions used by teachers to manage students having ADHDs and issues in general elementary level Classrooms.	

3.8 Pilot Testing of the Research Instruments

After the research tools were development, pilot testing was conducted to establish the psychometric properties of them. In pilot testing, a stratified random sample of 50 teachers were collected from elementary level schools. On the other hand, a purposive sample of 50 students was collected from Rawalpindi.

Details of pilot testing are as under:

3.8.1 Item Generation of Research Questionnaires

For items generation, the following were the main sources: such as

The review of the related literature from the internet source, DSM-V (Diagnostic and Statistical Manual of Mental Disorder) and interview with the elementary teachers. Conner's behaviour rating scale was also consulted for the development of the questionnaires.

The initial items were developed which later on converted into statements with the help of expert opinion and guidelines. Subsequently, all the questionnaires were reviewed and revised to align the framework, objectives and hypothesis of the study. The questionnaires were finalized for pilot testing comprising of different options given under each item.

3.8.2 Sample of Pilot testing

Stratified random and Purposive sampling techniques were used to select the sample for pilot testing. The sample of pilot testing was comprised of 50 elementary school teachers and 50 students studying in four elementary schools. It included 25 teachers and 25 students from two public schools, 25 teachers and 25 students from two private schools.

3.8.3 Validity of Research Instruments

For determining the content validity of the research questionnaires, the questionnaires were shared with experts. The experts in education and psychology were requested to go through each item in terms to its inclusion in the questionnaires. They were also requested to evaluate whether the items included in the questionnaires were covering the behavioural domain under consideration.

Weaker and vague items were removed, and the confusing language was improved. The questionnaire for teachers' awareness about the prevalence of students with ADHD in elementary classes contained 28 items. After the expert review, 4 items from the teacher's questionnaire were eliminated. The rest of the 24 items were retained for pilot testing. Language of the items was also improved.

The questionnaire related to interventions used by the teachers to manage students having ADHD in elementary classes contained 37 items. After the content validation process through expert opinion, 3 items related to interventions used by teachers to deal with students having ADHD were eliminated. Hence, this questionnaire with 34 items was used for pilot testing.

The content validity of self-awareness questionnaire for students about the extent of their ADHD behaviour in classroom was also established through expert opinion. Initially this questionnaire contained 45 items. After the experts' review, 5 items from the questionnaire were eliminated from the questionnaire. The rest of the 40 items were used for pilot testing.

3.8.4 Reliability of research instrument used to collect data from elementary classroom teachers

After validation, the reliability of the final questionnaires was checked to find the effectiveness of the selected items. The data were statistically analyzed by using different statistical techniques in the SPSS software.

1. Split half reliability (SHR)
2. Item-total correlation (ITR)
3. Percentile analysis (PA)

Table 3.2

SHR of Questionnaire for Teachers' Awareness about Students with ADHD (n=50)

Reliability Coefficients		
Split Parts	No of items	Values

Part – 1	08	0.81
Part – 2	07	0.80
Correlation between Split Parts		0.80

The reliability of the scale is ensured by using split-half reliability method; the items in the questionnaire were separated into two portions. The first portion of the questionnaire contained 08 items having reliability index .81 and second portion of the questionnaire contained 07 items having reliability index .80. Between forms reliability coefficient was 0.80, which indicated the positive correlation between two split portions.

Table 3.3

SHR of Questionnaire for Teachers about the Prevalence of Students with ADHD in Elementary Classrooms (n=50)

Reliability Coefficients		
Split Parts	No of items	Values
Part – 1	12	0.81
Part – 2	12	0.83
Correlation between Split Parts		0.80

In order to check the reliability of the scale by using split-half reliability method, the items in the questionnaire were divided into two parts. Both parts contained 12 items. The reliabilty of first part was .81, whereas the reliability index of the second part was .83. Between forms reliability coefficient was .80, which demonstrates an effective correlation in both the parts.

Table 3.4

SHR of Questionnaire related to Interventions used by Teachers to Deal with Students with ADHD in Elementary Classrooms (n=50)

Reliability Coefficients		
Split Parts	No of items	Values
Part – I	04	0.76
Part – I	03	0.78
Correlation between Split Parts		0.77

Table above describes the reliability index of the research questionnaire. The reliability was established through split-half method. Part 1 contain 4 items with reliability index of .76, and 2 part contain 3 items and reliability index yielded .78. Between forms reliability index was 0.78.

Table 3.5

ITC of Questionnaire for Teachers' Awareness about Students with ADHD (n=50)

Items	Correlations	Items	Correlations
1	.41	9	-.24
2	.56	10	.92
3	.74	11	-.17
4	.79	12	-.14
5	-.23	13	.63
6	.34	14	.58
7	.89	15	.81
8	-.13		

Construct validity was established through items' total correlation of questionnaire for the teachers' awareness about students with ADHD. Table 3.5 reveals items' total correlation (ITC) of the teachers' responses. Table 3.5 shows that items no 5, 8, 9, 11 and 12 have insignificant correlations with the total scales; therefore, they were deleted from the questionnaire.

Table 3.6

ITC of Questionnaire for Teachers about the Prevalence of Students with ADHD in Elementary Classrooms (n=50)

Items	Correlations	Items	Correlations
1	.35	13	.41
2	.73**	14	.42**
3	.97**	15	.39
4	.313**	16	.60
5	.306**	17	.19
6	.34	18	.40
7	.20	19	.60*
8	.48	20	.57
9	.329**	21	.58
10	.327**	22	.87
11	.16	23	.09
12	.387**	24	.373**

Table 3.6 provides information about items' total correlation of the teachers' responses to the prevalence of students having ADHD issues in elementary classrooms. From the table, it appears that most of the items in the questionnaire are positive and have significant correlations with a total scale having 24 items though some items like 7, 11, 17 and 23 have less than .30 correlation index. So, these 4 items were omitted from the final questionnaire.

Table 3.7

ITC of Questionnaire related to Interventions used by Teachers to Manage Students having ADHD at Elementary Level (n=50)

Items	Correlations	Items	Correlations
1	.94	18	.33
2	.34	19	.60
3	.64	20	.56
4	.53	21	.36
5	.12	22	.36
6	.43	23	.81
7	.24	24	.53
8	.59	**25**	.11
9	.65	26	.31
10	.51	**27**	-.1
11	.78	28	.78
12	.86	29	.36
13	.31	30	.33
14	.19	31	.35
15	.34	32	.56
16	.53	33	.72
17	.45	34	.33

Table 3.7 displays the items' total correlation of teachers' responses on interventions used by them to manage disrupted behaviour (ADHD) in elementary classrooms. It represents that items, 4, 7, 14, 25 and 27 have low correlation (less than .30). Therefore, these 5 items were omitted from the questionnaire and the final questionnaire would have 29 items under four dimensions.

Table 3.8

PA of Questionnaire for Teachers' Awareness about Students with ADHD (n=50)

Percentile	Scores
5	71.00
10	75.00
15	80.00
20	85.00
25	**89.00**
30	92.00
35	94.00
40	96.50
45	98.00
50	**100.00**
55	102.00
60	105.00
65	108.90
70	112.00
75	**114.00**
80	116.30
85	118.85
90	120.00
95	122.00

Table 3.8 demonstrates the percentile rank scores of teachers' awareness about students with ADHD. The table reveals that score of 89 fall son 25th percentile showing less awareness about the concept of students with ADHD, and score of 100 falls on 50th percentile displaying fair level of awareness about ADHD students, and score of 114 falls on 75th percentile yielding higher awareness about ADHD.

Table 3.9

PA of Questionnaire for Teachers about the Prevalence of Students with ADHD in Elementary Classrooms (n=50)

Percentile	Scores
5	83.05
10	85.00
15	86.00
20	87.00
25	**88.00**
30	88.00
35	89.00
40	90.00
45	91.00
50	**91.00**
55	92.00
60	92.00
65	93.00
70	93.00
75	**94.00**
80	95.00
85	95.85
90	96.00
95	97.00

Table 3.9 shows the percentile rank of teachers' scores on the prevalence of ADHD students in elementary classrooms. The score of 88 falls on the 25th percentile exhibiting that there is a small prevalence of students having ADHD in elementary classrooms; the total scale score of 91 falls on the 50th percentile showing moderate prevalence of ADHD students within elementary classrooms; and the score of 94 falls on the 75th percentile displaying high prevalence of ADHD students in elementary classrooms.

Table 3.10

PA of Questionnaire for Teachers about the Interventions of Students with ADHD in Elementary Classrooms (n=50)

Percentile	Scores
5	62.00
10	64.5
15	66.00
20	68.00
25	**70.00**
30	72.00
35	74.00
40	78.00
45	82.00
50	**86.00**
55	90.00
60	92.00
65	94.00
70	96.00
75	**98.00**
80	100.50
85	102.80
90	104.00
95	106.00

Table 3.10 displays percentile rank of teachers' scores on the interventions for students having ADHD in elementary classrooms. The score of 70 falls on the 25th percentile displaying that there is a small prevalence of students with ADHD in elementary classrooms; the total scale score of 86 falls on the 50th percentile showing that there is a moderate prevalence of students having ADHD symptoms in elementary classrooms; and the total scale score of 98 falls on the 75th percentile showing that there is a prevalence of students having ADHD indications in elementary classrooms.

Table 3.11

PA of Teachers' Scores on the Prevalence of Students with ADHD in Elementary Classrooms

Percentile	Scores
5	70.00
10	72.5
15	74.00
20	76.00
25	**78.00**
30	80.00
35	82.00
40	84.00
45	86.00
50	**88.00**
55	90.00
60	92.00
65	94.00
70	96.00
75	**100.00**
80	104.50
85	108.80
90	112.00
95	114.00

Table 3.11 displays percentile rank of teachers' scores on the prevalence of students with ADHD in elementary classrooms. The score of 78 falls on the 25th percentile showing that there is a small prevalence of students having ADHD in elementary classrooms; the total scale score of 88 falls on the 50th percentile showing that there is a moderate prevalence of students having ADHD in elementary classrooms; and the total scale score of 100 falls on the 75th percentile showing that there is a high prevalence of students having ADHD symptoms in elementary classrooms.

3.8.5 Reliability of research instruments used to collect data from elementary classroom students (n=50)

Table 3.12

SHR of Self-awareness Questionnaire for Students about the extent of their ADHD Behaviour in Classroom (n=50)

Reliability Coefficients		
Split Parts	No of items	Values
Part – 1	20	0.72
Part – 2	20	0.59
Correlation between Split Parts		0.66

To check the reliability of the scale by using split-half reliability method, the items in the questionnaire were divided into two portions. In the first portion, 20 items were there, and in the second portion 20 items were there. The reliability coefficient was found to be 0.66 which is reflected to be quite suitable.

Table 3.13

ITC of Self-awareness Questionnaire for Students about the extent of their ADHD Behaviour in Classroom (n=50)

Items	Correlations	Items	Correlations
1	.58**	21	.49**
2	.26**	22	.33**
3	.54**	23	.58**
4	.26**	24	.21**
5	.57**	25	**-.29**
6	.57**	26	.47**
7	.46**	27	.07
8	.58**	28	.48**
9	.15**	29	.26**
10	.04	30	.54**
11	.58**	31	.31**
12	.54**	32	.38**
13	**-.07**	33	.40**
14	.13*	34	.51**
15	.04	35	.39**

Items	Correlations	Items	Correlations
16	.54**	36	.27**
17	.46**	37	.78**
18	**-.29**	38	.79**
19	.21**	39	.44**
20	**-.01**	40	.36**

Table 3.13 describes items' total correlations on self-awareness questionnaire for students about the extent of their ADHD behaviour in Classroom. It represents that most of the items in the questionnaire have positively significant correlations with total scale though some items like 13, 18, 20 and 25 have a negative correlation with total scale. Consequently, four items were omitted from the questionnaire and the final questionnaire had 36 items.

Table 3.14

PA of Self-awareness Questionnaire for Students about the extent of their ADHD Behaviour in Classroom (n=50)

Percentile	Scores
5	60.00
10	62.00
15	66.40
20	70.00
25	**72.5**
30	74.00
35	76.00
40	78.00
45	80.80
50	**82.00**
55	84.00
60	86.50
65	88.65
70	90.00
75	**92.00**
80	94.90
85	96.00

Percentile	Scores
90	98.00
95	100.00

Table 3.14 shows the percentile rank of self-rating scores of students having ADHD issues in elementary classrooms. The score of 72 falls on the 25th percentile showing that there is a little self-awareness of students with ADHD in elementary classrooms; the total scale score of 82 falls on the 50th percentile displaying that there is moderate self-awareness of students with ADHD in elementary classrooms; and the total scale score of 92 falls on the 75th percentile showing that there is high self-awareness of students having ADHD in elementary classrooms.

3.9 Summary

Chapter 3 described the research methodology. Here, the details about the population and sample have been mentioned. Reliability and validity for the research questionnaires were established having carried out the pilot testing. Data analysis of the research will be presented in the subsequent chapter.

CHAPTER-4

RESULTS

The present research has been designed to develop teaching interventions for better academic achievement and behavioural management of ADHD students at elementary level.

The objectives of this study were:

1. To explore the extent of physical facilities at elementary schools.
2. To explore teachers' awareness about learning difficulties of elementary level students.
3. To explore the prevalence and behavioural problems of ADHD students at elementary level.
4. To measure teachers' demographic variations in age, gender, qualification, sector, experience, grade and strength of the class in relation with the prevalence of ADHD students in their classes.
5. To measure the effect of students' demographic variations in gender, grade, sector, fathers' qualification, fathers' profession, mothers' qualification, mothers' profession, monthly income of family and the number of brothers and sisters in determining the extent of ADHD.
6. To find out various challenges that are being faced by teachers in managing ADHD students at elementary level.
7. To develop interventions for higher academic achievement and behavioural management of elementary level ADHD students.
8. To measure the effects of teaching interventions on academic performance and behavioural management of ADHD students.

In this research, numerous research questions and hypotheses were devised. For the attainment of research objectives, testing of research hypotheses and answering research questions, the study was conducted into two phases – the first phase was descriptive and the second phase was experimental (casual-comparative).

In the first phase, an attempt was made to explore various facets of the phenomenon under consideration through descriptive research design. In the second phase, experimental (causal-comparative) research design was used to test the effectiveness of developed interventions on the sampled ADHD students for better academic achievement and behavioural management.

The sample of teachers and students was selected from the population. The questionnaires were developed by the researcher to collect the data from the respondents. Reliability and validity of these questionnaires were established in pilot testing.

The collected data were tabulated and put in the SPSS software for statistical analysis. The following statistical measures were used to analyze the data, such as percentages mean (M), standard deviation (SD), t-test and ANOVA. The detailed analysis of the data is presented in the tabulated form with interpretations in this chapter.

Phase-I of the Study

Population and sample

The total population of the study included all the elementary school teachers and students in Rawalpindi . This population consisted of 5950 teachers and 41400 students.

The sample of the study was extrated through purposive and stratified sampling techniques. The sample size of the teachers was 200, while the sample size of the students was 300.

Table 4.1

Sample Breakdown

Sample of the study	
Public sector	Private sector
16 Government schools of the Punjab (150 students + 100 teachers)	(60 students + 40 teachers) 8 franchises (The City, Roots Internationals, Beacon House, and Educators)
4 F.G. schools (30 Students + 20 teachers)	8 Private schools owned by the single owner (60 students + 40 teachers)

4.1 Psychometric Properties of Questionnaire for Teachers' Awareness about Students with ADHD

In order to fortify usefulness in this research, psychometric properties of the questionnaire for teachers' awareness about students with ADHD were established.

Psychometric properties were established through the following procedures:

1. Split half alpha reliability (SHR)
2. Item total correlations (ITC)
3. Percentile rank analysis (PRA)

Table 4.2

SHR Coefficients of Teachers' Awareness Scores about ADHD (n=200)

Reliability Coefficients Cronbach's Alpha		
Split Parts	No of items	Values
Part – I	05	0.83
Part – II	05	0.78
Total No. of Items	10	
Correlation between Split Parts		0.81

$p < 0.05$

Table 4.2 describes the split-half reliability of the questionnaire related to teachers' scores on awareness about students with ADHD. For the estimation of the reliability, the test was divided into two parts, and there are 10 items in each part. Reliability of part I is 0.83, whereas the reliability of part II is 0.78. Reliability between parts is 0.81, which shows the significant reliability coefficients.

Table 4.3

ITC of the Questionnaire related to Teachers Awareness Scores about ADHD (n=200)

Items	Correlations	Items	Correlations
1	.59*	6	.32**
2	.88**	7	.66
3	.31**	8	.78
4	.92**	9	.26
5	.70**	10	.47

*$p<0.05$, **$p<0.01$

In order to see the construct validity of the questionnaire related to teachers' scores on awareness about students with ADHD, the item analysis was performed through the item-total correlation. Table 4.3 displays that all the items are significantly correlated with the total scale of teachers' awareness of ADHD students. Here the coefficient of correlation ranged from .31 to .92. Item number 3 has low correlation, whereas item number 4 has a higher correlation with the total score.

Table 4.4

Percentiles Score on Teachers' Awareness responses about ADHD (n=200)

Percentile Rank	Scores
5	68.00
10	70.00
15	75.00
20	80.00
25	**86.00**
30	88.00
35	90.0
40	92.00
45	94.00
50	**96.00**
55	100.00
60	104.00
65	108.00
70	110.00
75	**115.00**
80	117.0
85	119.00
90	122.00
95	125.00

Table 4.4 illustrates the percentile rank teachers' responses on awareness about students with ADHD. 86 is the number of scores that tumbles on the 25th percentile showing that there is lower level; 96 is the number of scores that falls on the 50th percentile displaying a moderate level, and 115 is the number of scores that falls on the 75th percentile showing a high level of teachers' awareness about the prevalence of ADHD in elementary classrooms. Scores of percentile range from 68 to 125.

4.2 Psychometric Properties of the Questionnaire for Teachers about the Prevalence of Students having ADHD in Elementary Level Classrooms

Psychometric properties of the Questionnaire about the prevalence of students having ADHD in elementary level classrooms were established to fortify the utility of

this questionnaire in the present research on the main sample through the subsequent procedures:

1. Split half reliability (SHR)
2. Interscales correlations (ISC)
3. Item total correlations (ITC)
4. Percentile rank analysis (PRA)

Table 4.5

SHR Coefficients of Teachers' Scores about the Prevalence of ADHD (n=200)

Reliability Coefficients Cronbach's Alpha		
Split Parts	No of items	Values
Part – 1	10	0.79
Part – 2	10	0.80
Total No. of Items	20	
Correlation between Split Parts		0.81

$p<0.05$

Table 4.5 above describes the split-half reliability of a questionnaire designed about the measurement of the prevalence of students having ADHD in elementary level classrooms. To estimate reliability, items were divided into two parts, and there are 10 items in each part. In the first part, the reliability is 0.79, whereas in the second part the reliability is .80. Reliability between parts index is 0.81, which shows significant coefficients.

Table 4.6

ISC of the Teachers' Scores on the Prevalence of ADHD in Elementary Level Classes (n=200)

Subscales	Inattentive	Hyperactive	Impulsive
Inattentive			
Hyperactive	**** .60		
Impulsive	****.91	**.43	
Total	0.91	.43	

Note: *Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 4.6 shows the inter scales correlations of the subscales related to teachers' perceptions of the prevalence of ADHD students in elementary classrooms. This table

also shows that inattentive behaviour has a high relationship with impulsive behaviour as compared to hyperactive.

Table 4.7

ITC of the Teachers' Scores on the Prevalence of ADHD in Elementary Level Classes (n=200)

Items	Correlations	Items	Correlations
1	.75*	11	.93**
2	.67**	12	.53
3	.48**	13	.81*
4	.87**	14	.55
5	.39**	15	.84
6	.65**	16	.90*
7	.37**	17	.35
8	.48	18	.57
9	.36**	19	.58
10	.34**	20	.87*

*$p<0.05$, **$p<0.01$

To ascertain the validity of the questionnaire related to the prevalence of ADHD students in elementary level classes, the item analysis was performed through the *item total* correlations. Table 4.7 displays that all the items are significantly correlated with the total scale of teachers' awareness regarding ADHD students. The correlation ranged from .34 to .93. Item No. 10 has a low correlation, whereas item 11 has a high correlation.

Table 4.8

Percentiles of Teachers' Responses about the ADHD Prevalence in Elementary Level Classes (n=200)

Percentile	Inattentive	Hyperactive	Impulsivity	ADHD
5	8.00	20.00	11.00	60.00
10	10.00	21.00	12.00	61.00
15	11.00	26.00	14.00	68.00
20	13.00	30.00	17.00	72.00
25	**15.00**	**34.00**	**18.00**	**78.00**
30	18.00	38.00	20.50	81.00

Percentile	Inattentive	Hyperactive	Impulsivity	ADHD
35	19.50	42.00	22.00	83.00
40	22.00	45.00	23.00	86.00
45	24.00	50.80	26.95	87.00
50	**26.00**	**55.00**	**28.00**	**90.00**
55	28.00	58.00	31.00	93.00
60	30.50	60.00	36.00	96.00
65	35.00	61.00	40.00	100.50
70	40.00	63.00	43.00	101.00
75	**45.00**	**66.00**	**44.00**	**104.00**
80	46.00	70.00	45.00	107.00
85	49.00	72.00	48.00	108.00
90	52.00	75.00	50.85	113.87
95	59.00	76.00	57.00	117.00

Table 4.8 exhibits percentile analysis of teachers' responses regarding the prevalence of ADHD students in elementary level classes. It is evident from this table that scores of 15 falls on 25th percentiles displaying less prevalence of inattentive behaviour of students in elementary classrooms; the score of 26 falls on 50th percentile showing the moderate prevalence of impulsive behaviour of students in elementary classrooms, and the score of 45 falls on 75th percentile showing that the high prevalence of inattentive behaviour of students in elementary classrooms. The score for inattentive behaviour ranged from 8 to 59. This table also presents the teachers' scores of the prevalence of hyperactive behaviour of students. It is also evident from Table 4.8 that the score of 34 falls on 25th percentiles showing less prevalence of hyperactive behaviour in students of elementary classes. The score of 55 falls on 50th percentile showing a moderate prevalence of inattentive behaviour of students in elementary classrooms, and the score of 66 drops on 75th percentile showing the high prevalence of hyperactive behaviour of students in elementary classrooms. Scores on subscale hyperactive ranged from 20 to 76. This table also presents the scores of teachers' responses to the prevalence of impulsive behaviour of students. From the analysis, the score of 18 falls on 25th percentiles displaying less prevalence of impulsive behaviour of students in elementary classes. The score of 28 falls on 50th percentile showing moderate and the score of 44 falls on 75th percentile showing a high prevalence of

impulsive behaviour of students in elementary classrooms. Here, scores ranged from 11 to 57.

This table also presents the teachers' scores regarding the prevalence of ADHD students. It is evident from this table that the score of 78 falls on 25th percentiles displaying a less prevalence of attention deficit and hyperactive disorder behaviour of students in elementary classrooms. The score of 90 falls on 50th percentile showing a moderate level and the score of 104 falls on 75th percentile showing a high level of prevalence of ADHD of students in elementary classrooms. In ADHD, the range of scores is from 60 to 117.

4.3 Psychometric Properties of the Questionnaire Related to Interventions adopted by Teachers to Deal with Students having ADHD in Elementary Level Classes

Psychometric properties of elementary classroom teachers' responses on the questionnaire related to interventions adopted by teachers to deal with ADHD students in elementary level classes were established on the main sample just to fortify its usability in the present study by following these procedures:

1. Split half reliability (SHR)
2. Item total correlations (ITC)
3. Percentile rank analysis (PRA)

Table 4.9

SHR of Teachers' Scores related to Interventions used by Teachers to Deal with ADHD in Elementary Level Classrooms (n=200)

Reliability Coefficients Cronbach's Alpha		
Split Parts	No of items	Values
Part – 1	15	0.68
Part – 2	14	0.75
Total No. of Items	29	
Correlation between Split Parts		0.74

$p<0.05$

Table 4.9 describes the split-half reliability of teachers' scores on interventions used by teachers for the management of the disruptive students' behaviour. For the estimation of reliability, the test was separated into two portions -- 15 items in each part.

Reliability of part 1 is 0.68, whereas reliability of the second part was 0.75, and between the parts reliability is 0.74.

Table 4.10

ITC of Teachers Scores Related to Interventions used by Teachers to Deal with ADHD in Elementary Level Classrooms (n=200)

Items	Correlations	Items	Correlations
1	.81*	16	.77**
2	.34**	17	.69
3	.35	18	.43
4	.56	19	.36
5	.39	21	.41
6	.48	21	.45
7	.44	22	.46
8	.39	23	.51
9	.30	24	.63
10	.38	25	.33
11	.37	26	.49
12	.56	27	.33
13	.71	28	.62
14	.31	29	.49
15	.44		

*p<0.05, **p<0.01

To evaluate the construct validity of the questionnaire related to interventions used by teachers to manage students having ADHD in elementary level classes, the item analysis has been carried out through item total correlation.

Table 4.10 displays that all items are significantly correlated with total scale. The correlation ranged from .30 to .81

Table 4.11

Percentiles Rank of Teachers' Scores Related to Interventions used by Teachers to Manage ADHD in Elementary Level Classes (n=200)

Percentile Rank	Scores
5	61.00
10	64.00
15	70.00
20	75.70
25	**78.00**
30	82.00
35	85.00
40	86.00
45	88.00
50	**90.00**
55	91.65
60	94.00
65	96.00
70	99.00
75	**100.00**
80	103.00
85	104.0
90	109.00
95	112.00

The percentile rank of teachers' scores is described in Table 4.11. This is related to interventions adopted by the teachers to deal with students having ADHD in elementary level classes. 78 is the number of scores that tumbles on the 25^{th} percentile showing a lower level; 90 is the number of scores that falls on the 50^{th} percentile displaying a moderate level, and 100 is the number of scores that drops on the 75^{th} percentile showing that there is a high level. Here, the scores vary from 61 to 112.

4.4 Psychometric Properties of Self-awareness Questionnaire for Students about the extent of their Classroom Behaviour (ADHD)

Psychometric properties of self-awareness questionnaire for students about the extent of their ADHD behaviour in classroom were established on the main sample as well through the following procedure:

1. Split half reliability (SHR)
2. Item Total correlation (ITC)
3. Percentile rank analysis (PRA)

Table 4.12

SHR Coefficients of Students Responses about the extent of their ADHD Behaviour in Classroom (n=300)

Reliability Coefficients Cronbach's Alpha		
Split Parts	No of items	Values
Part – I	18	0.91
Part – II	18	0.87
Total No. of Items	36	
Correlation between Split Parts		0.89

$p<0.05$

Table 4.12 describes the split-half reliability of the self-awareness questionnaire for students about the extent of their ADHD behaviour in classroom. Table 4.12 revealed that the part 1 contains 18 items and reliability index is .91, whereas the part 2 also contains 18 items but reliability index is .087. Reliability index between forms is 0.89, which shows a significant reliability of the research questionnaire.

Table 4.13

ITC of Self-awareness of Students' Responses about the extent of their Classroom Behaviour ADHD (n=300)

Items	Correlations	Items	Correlations
1	.55**	19	.54**
2	.72**	20	.86**
3	.32**	21	.79**
4	.85**	22	.54**
5	.26**	23	.35

Items	Correlations	Items	Correlations
6	.79**	24	.89**
7	.90**	25	.77
8	.44**	26	.58**
9	.63**	27	.60**
10	.41	28	.73**
11	.92**	29	.92**
12	.67**	30	.68**
13	.70	31	.85**
14	.50*	32	.67**
15	.75	33	.57**
16	.60**	34	.78**
17	.69**	35	.52**
18	.78	36	.78**

*p<0.05, **p<0.01

Item total correlation of self-awareness questionnaire for students about the extent of their ADHD behaviour in classroom is shown in Table 4.13. It represents that all items have significant correlations with total questionnaire having positively significant correlations with the total scale. Correlations range from .31 to .92. Item 3 has a lower correlation, whereas item 11 has a higher correlation with the complete questionnaire.

Table 4.14

Percentile Score of Students' Responses about the extent of their ADHD Behaviour in Classroom (n=200)

Percentile Rank	Scores
5	60.00
10	64.90
15	68.00
20	71.00
25	**78.00**
30	80.75
35	83.00
40	84.50
45	86.00

Percentile Rank	Scores
50	**88.00**
55	89.00
60	91.0
65	92.00
70	94.80
75	**95.00**
80	96.00
85	96.00
90	97.00
95	98.90

Table 4.14 illustrates the percentile rank of students' scores on the **s**elf-awareness questionnaire. The score of 78 falls on the 25th percentile showing the lower level of self-awareness; the score of 88 falls on the 50th percentile displaying a moderate level of self-awareness, and the score of 95 falls on the 75th percentile showing a high level of self-awareness about the extent of their ADHD behaviour in Classroom.

Table 4.15

Elementary Students' Response Scores of self-awareness about the extent of their ADHD Behaviour in Classroom (n=300)

Items	Never (%)	Rarely (%)	Some-times (%)	Often (%)	Very often (%)
1. I have difficulty in sustaining my attention while doing homework.	33.7	11.0	44.7	10.6	0
2. I cannot focus my attention during lectures.	32	14	41.3	12.7	0
3. I only concentrate for a short while during lectures.	60.7	17	15.3	5	2
4. I lose concentration during lengthy reading.	32	14.3	41.3	12.4	0
5. My attention redirects due to external influence.	2.3	12.7	12.3	60.4	12.3

Items	Never (%)	Rarely (%)	Some-times (%)	Often (%)	Very often (%)
6. After hearing any noise distraction, I can focus on my task.	.3	60	6	16.3	17.3
7. After having any visual distraction, I change my attention.	0	16.3	49.3	2.7	31.7
8. I avoid engaging in tasks that require continuous efforts	60	17	16	5	2
9. I have trouble listening to someone, even when they are speaking directly to me (like my mind is somewhere else).	34	11	43	11.3	.7
10. I can't manage my study time.	56.6	6.3	8.7	13.7	14.7
11. I fail to meet deadlines	0	19.6	61.7	17.7	1
12. I fail to give close attention to details	2.3	1	56	1.4	39.3
13. I do careless mistakes while doing homework.	33	11	43	11	2
14. I often misplace/damage things that are necessary in order to complete the task**.**	54.7	8	8.6	13.7	15
15. I get bored easily during performing academic tasks.	.3	59.7	6	16.7	17.3
16. I prefer to sit at the back of the classroom.	17	60.7	15.3	2	5
17. I do not want to contribute to class discussion.	0	0	65	10	25
18. In the morning, I often come late to my classroom.	65	10.3	10	8.7	6

Items	Never (%)	Rarely (%)	Some-times (%)	Often (%)	Very often (%)
19. I get upset while learning new things	.3	60	6.4	16.3	17
20. I would like to work on more than one project at a time.	50.7	12	8.3	14	15
21. I am unable to accomplish the assigned tasks because I dislike.	2.7	.6	56.3	2.7	37.7
22. Sometimes my mind gets messy that it is hard for it to function.	32.6	15.3	39.7	11.7	.7
23. I am a daydreamer.	.3	59.7	6	17	17
24. It is hard for me to sit quietly during the period.	12	1	15	69	13
25. I am more comfortable when moving rather than sitting still.	1.3	1	17.7	66.7	13.3
26. I would like to talk excessively.	31.6	10.7	42.3	14.7	.7
27. Often, I give a statement on (issue, topic or happening) without thinking, later I regret it.	16.7	56.3	15	1.7	10.3
28. I cannot play quietly.	49.7	11.7	14.3	10	14.3
29. I make quick decisions without thinking enough about the consequences.	2.7	.6	62	2.7	32
30. Often, I feel troubled in prioritizing the tasks.	60	10	10	9	11
31. I become upset easily.	2.3	2.7	53.3	4.7	37

Items	Never (%)	Rarely (%)	Some-times (%)	Often (%)	Very often (%)
32. Even when sitting quietly, I am usually moving my hands or feet.	9	8	18.3	54	10.7
33. My brain feels as if it is a television set with all the channels going at once.	.3	54.3	16	13.7	15.7
34. I am a poor planner.	.3	59.3	10.7	14.7	15
35. In group activities, it is hard for me to wait for my turn.	2.3	6.7	53.7	4	33.3
36. I love to interrupt friends while they are doing their work.	8.4	1	18	60.3	12.3

Table 4.15 shows the responses of students against the statements of a self-Awareness questionnaire for students about the extent of their ADHD Behaviour in Classroom. First 23 items in the questionnaire deal with the inattentive behaviour of students, whereas items 24 to 32 deal with the hyperactive behaviour and items 34 to 36 deal with impulsive behaviour. Each of the statements in this questionnaire displays the level of students' self-awareness about their behaviour in their elementary classrooms.

From the responses of students mentioned above, it is evident that 44.7% of elementary class students sometimes have difficulty in sustaining attention while doing homework, and 41.3% of the students admitted that sometimes they have less attention during lectures. In this table, it can also be seen that 60.7% of students responded that they never lose concentration during lectures.

It is also cleared in the table above that 41.3% of students declare that they sometimes lose concentration during lengthy reading. It is mentioned in the table that 60.3% students often have attention redirect due to external influence, and 60% students believe that after hearing any noise distraction rarely can they focus on their task. 49.3% responded that after having any visual distraction most of the time they change their attention. 60% students responded that they never avoid engaging in tasks that require

continues effort; 43% students believe that they sometimes have a problem in heeding to somebody even while direct talking to them.

The table illustrates that 56.6% students mentioned that it never happened that they cannot manage their study time; 61.7% students give their views that sometimes they fail to meet deadlines, and 56%of students responded that they sometimes fail to give close attention to details. Furthermore, 43% students agree that they do careless mistakes while doing homework, and 54.7% students have the view that the never misplace/damage things that are necessary in order to complete the task. On the other hand, 59.7% students responded that they rarely get bored easily during performing academic tasks.

The table shows that 60.7% students believe that they rarely prefer to take a seat at the backside of the main classroom; 65% of students sometimes do not want to contribute in class discussion; 65% students have responded that they never come late to the classroom in the morning. Moreover, 60% students viewed that they rarely get upset while learning new things. 50.7% students responded that they would never like to simultaneously work on two or more than two projects at a time. 56.3% students believe that they sometimes are unable to accomplish the assigned tasks because of dislikes, and 39.7% students admitted that sometimes their mind gets messy that it is hard for it to function.

The table displays that 59.7% students responded that they are daydreamer, and 69% students said it is hard for them to sit quietly during the period. 66.7% said that they are more relaxed while moving rather than sitting still, and 42.3% said they would like to talk excessively. 56.3% said they often give a statement on (issue, topic or happening) without thinking, and later are regretful. 49.7% said they cannot play quietly; 62% said they make rapid choices without adequate thinking about consequences.

60% said they often feel troubled in prioritizing the tasks; 53.3% said they become upset easily, and 54% said even when sitting silently, they are frequently stirring their hands or feet. 54.3% are of the view that their brain senses as if it is a TV with all the channels simultaneously playing; 59.3% are of the view that they are a poor planner. On the other hand, 53.7% maintained that in group doings it is difficult for them to wait for their turn, and 60.3% love to interrupt friends while they are doing their work.

4.5 Hypothesis Testing

In this study, in order to learn about the phenomena under consideration from various interrelated perspectives, several hypotheses were developed. Hypothesis testing was done through statistical analysis. For this purpose, *mean, standard deviation (SD) and t-test and analysis of variance* (ANOV) were used.

Hypothesis 1

There is no significant difference in the prevalence of ADHD students in the classes of male and female teachers.

Table 4.16

Mean and Standard Deviation of Teachers' Scores on the Prevalence of Students with ADHD in relation with variable Gender (n=200)

	Male Teachers (N=100)		Female Teachers (N=100)	
	M	SD	M	SD
Inattentive	36.0	2.4	36.9	2.0
Hyperactive	14.4	2.5	16.5	1.0
Impulsive	8.2	1.7	11.6	1.1
Total	58.6	6.6	63.0	4.1

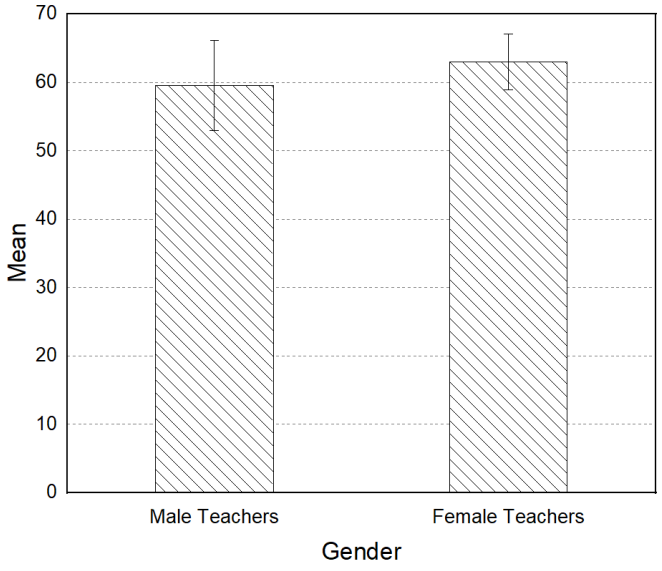

*Figure 4.1.*Graphical representation of Mean and SD of teachers' scores on the prevalence of students having ADHD in relation with variable *gender*.

Table 4.16 shows the *mean* and SD of male and female teachers' scores on the prevalence of students having ADHD in their classes. Table 4.16 makes it clear that

facets related with *inattention*, *hyperactivity* and *impulsivity* are higher in the classes of female teachers as compared to male teachers. On the total scale, Mean value of male is 58.6, whereas Mean value of female teachers is 63.00. Graph 4.1 also shows that; ADHD students are creating more problems in female teachers' classes as compared male teachers' classes.

Table 4.17

T-test of Teachers' Scores on the Prevalence of Students with ADHD in relation with variable Gender (n=200)

Source	T	Df	p-value	95% Confidence Interval of the Difference	
				Lower	Upper
Gender (Male, Female)	4.32	199	0.03	1.43	1.57

T-test was applied to see the difference in the scores of male and female teachers. Table 4.17 shows the value of t that is 4.32 and its p-value is 0.03 which is statistically significant at $p<0.05$, so it was rejected H_0. There is, in fact, no difference between the prevalence of students having ADHD in the classes of male and female teachers. Therefore, it has been concluded that a significant difference exists in the prevalence of ADHD students in the classes of female and male teachers.

Hypothesis 2

There is no significant difference in the prevalence of students having ADHD in the classes of younger teachers' (20-30yrs / 31-40yrs) and older teachers' (41-50yrs).

Table 4.18

Mean and Standard Deviation of Teachers' Scores on the Prevalence of Students with ADHD in relation with Variable, 'Age' (n=200)

Subscale	20-30 (N=137)		31-40 (N=54)		41-50 (N=9)	
	M	SD	M	SD	M	SD
Inattentive	39.9	1.9	36.3	2.3	32.3	2.8
Hyperactive	18.4	1.2	15.9	2.1	10.8	2.9
Impulsive	29.4	1.3	18.4	1.8	16.6	2.2
Total	87.7	4.4	70.6	6.2	59.7	7.9

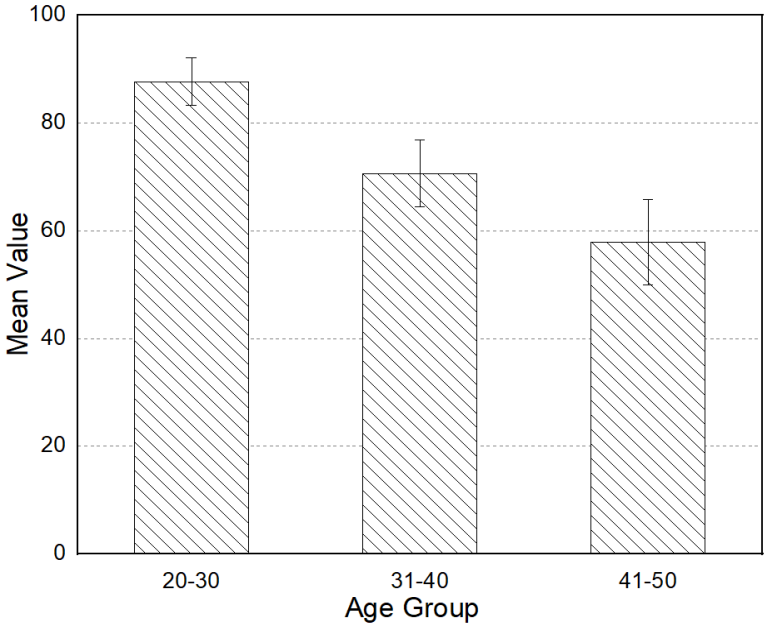

Figure 4.2. Graphical representation of Mean and SD of teachers' scores on the prevalence of ADHD students in relation with variable, i.e., teachers' age.

Table 4.18 describes the Mean (M) and SD of elementary teachers' scores on the prevalence of students with ADHD in relation with variable, i.e., teachers' age.

From the table, it appeared that the prevalence of inattention, hyperactivity and impulsive students are more in the classes of the younger teachers as compared with middle aged or older teachers. So it has been concluded that the prevalence of students with ADHD is higher in the classes of youngest teachers.

The Mean values of the prevalence of ADHD students in the classes of younger teachers (from 20 to 30 years) is M=87.7, and in older ones (41-50years) mean value is 59.7.

Table 4.19

ANOVA of the teachers' scores on the Prevalence of Inattentive, Hyperactive and Impulsive Behaviour of Students in relation with Variable 'Age of Teachers' (n=200)

		Sum of Squares	df	Mean Square	F	p-value
Inattentive	Between Groups	10.125		10.125	6.81	.00
	Within Groups	294.070	199	1.485		
Hyperactive	Between Groups	4.205		4.205	0.96	.00

		Sum of Squares	df	Mean Square	F	p-value
Impulsivity	Within Groups	862.670	199	4.357		
	Between Groups	.405		2.405	0.80	.00
	Within Groups	933.350	199	4.714		
Total	Between Groups	4.205		6.205	7.24	.00
	Within Groups	4021.950	199	20.313		

Table 4.19 presents significant difference in the scores of teachers on the prevalence of students with ADHD in classes of teachers of various age groups (F=7.24, P=.00).

Hypothesis 3

There is no significant difference in the prevalence of ADHD students in the classes of teachers having different qualification levels.

Table 4.20

Mean and Standard Deviation of Teachers' Scores on the Prevalence of ADHD Students related to Teachers' Qualification (n=200)

Subscales	BA/B. SC/B. Ed (N=29)		MA/M. Sc/ M. Ed (N=99)		M. Phil (N=72)	
	M	SD	M	SD	M	SD
Inattentive	37.0	1.8	35	2.0	32	2.1
Hyperactive	25.5	2.0	15.5	2.7	13	3.0
Impulsive	39.0	2.0	19.4	2.9	16	2.9
Total	101.5	5.8	69.9	7.6	61	8.0

Table 4.20 describes the Mean and SD of teachers' scores on the prevalence of ADHD students in relation with variable, i.e., teachers' qualification. Table 4.20 revealed that the prevalence of ADHD students are higher in the class of teachers with less qualification. The Mean values and SD values of teachers with the qualification of BA/B.Ed., SC/B.Ed. is M=101.5. Mean values and SD values, teachers having the qualification of MA/M. SC/ M.Eds. is M=69.9, whereas Mean values of teachers with the qualification of M. Phil is M=61.

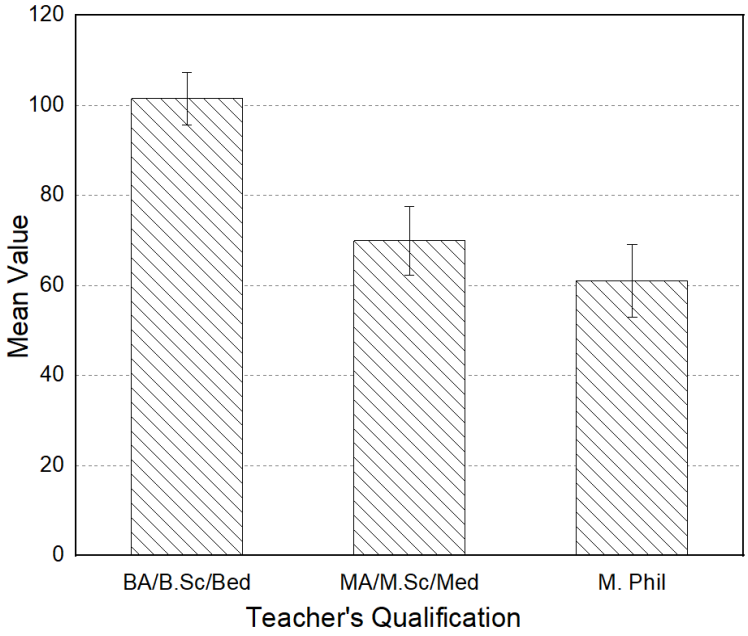

*Figure 4.3.*Graphical representations of Mean and SD of teachers' scores on the prevalence of ADHD students related to teachers' qualification.

Graph 4.3 provides pictorial evidence that teachers having high qualification has better class control as compared to teachers having less qualification.

Table 4.21

ANOVA for the Prevalence of Inattentive, Hyperactive and Impulsive Behaviour of Students in relation with variable, i.e. Teachers' Qualification (n=200)

		Sum of Squares	Df	Mean Square	F	p-value
Inattentive	Between Groups	6.800		3.400	2.252	.00
	Within Groups	297.395	199	1.510		
Hyperactive	Between Groups	20.623		10.312	2.400	.01
	Within Groups	846.252	199	4.296		
Impulsivity	Between Groups	11.648		5.824	1.244	.00
	Within Groups	922.107	199	4.681		
Total	Between Groups	84.763		42.382	3.118	.01
	Within Groups	3941.392	199	20.007		

$P < 0.05$

Table 4.21 provides information about test statement of hypothesis 3. The researcher applied two-way ANOVA. For inattentive, the value of f is 2.252 and its p-value is 0.00 which is statistically significant at p< 0.05. For hyperactive, the value of f is 2.400and its P-value is 0.01 which is statistically significant at p< 0.05. For impulsive behaviour students, the value of f is 1.244 and its p-value is 0.00 which is significant at p< 0.05. Therefore, we rejected Ho 3. There is no difference in the prevalence of students with ADHD in the classes of teachers having different qualification levels and accepted H_1. Entirely there is a significant difference in the prevalence of students with ADHD in the classes of teachers having different qualification levels

Hypothesis 4

There is no significant difference in the prevalence of ADHD students in the public-sector and private sector elementary schools.

Table 4.22

Mean and Standard Deviation of Teachers Scores on the Prevalence of Students having ADHD in Private and Public Sector Schools (n=200)

Subscales	Public Sector (N=128)		Private Sector (N=72)	
	M	SD	M	SD
Inattentive	45.9	2.5	36.6	3.0
Hyperactive	28.4	2.1	15.7	2.8
Impulsive	39.6	1.1	9.4	3.2
Total	113.9	5.7	61.7	9.0

Table 4.22 describes the Mean and SD of teachers' scores for the prevalence of students with ADHD in elementary classrooms in relation with variable, i.e., school sector. From this table, it appears that inattention, hyperactive and impulsive behaviour are more in the public sector elementary classes than the private one. The Mean value and SD value of inattentive behaviour perceived by public sector teachers are (M=45.9; SD= 2.5) respectively. The Mean value and SD value of hyperactive behaviour perceived by public sector teachers are (M=28.4: SD= 2.1). The Mean value and SD value of impulsive behaviour perceived by public sector teachers are (M=39.6: SD= 1.1). On the other hand, the Mean value and SD value of inattentive behaviour

perceived by private sector teachers are (M=36.6: SD= 3). The Mean value and SD value of hyperactive behaviour perceived by private sector teachers are (M=15.7: SD= 2.8). The Mean values and SD values of impulsive behaviour perceived by private sector teachers are (M=9.4: SD= 3.2). It also appeared in the graph that, on the whole, teachers of the public sector have more students with ADHD in their classrooms as compared to private sector.

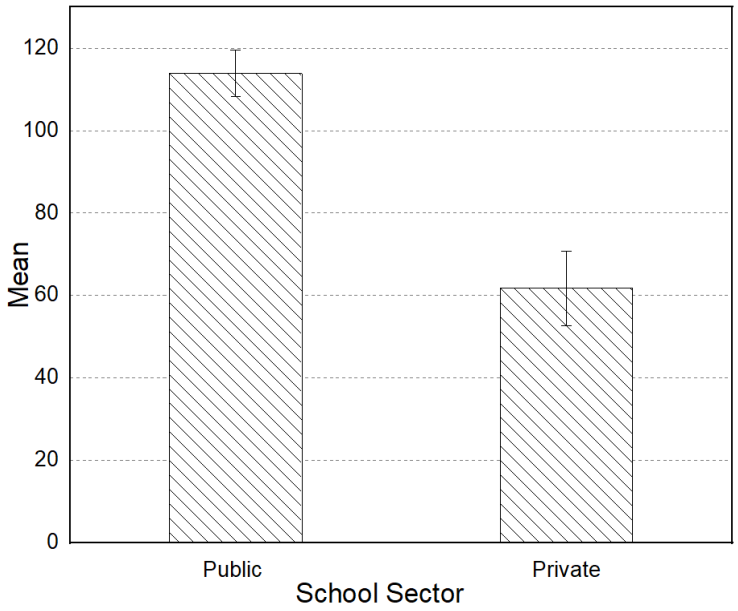

Figure 4-4. Graphical representation of mean and standard deviation of teachers' scores in relation with the prevalence of students with ADHD in Private and public sector schools.

Table 4.23

Mean and Standard Deviation of Teachers' Scores on the Prevalence of Students having ADHD in Private and Public Sectors Schools (n=200)

Source	t	df	p-value	95% Confidence Interval of the Difference	
				Lower	Upper
School sector	39.96	199	0.00	1.29	1.43

To test this hypothesis that there is no difference in the prevalence of students with ADHD in public and private sector elementary classrooms, t-test test has been used to calculate the value of t and that is 39.96 and p-value is 0.00 which are significant at $p< 0.05$.

Hypothesis 5

There is no significant difference in the prevalence of the ADHD students in the classes of teachers having different work experiences.

Table 4.24

Mean and Standard Deviation of Teachers' Scores on the Prevalence of Students with ADHD in relation with Variable, i.e., Teaching Experience (n=200)

Subscale	Less than 1 year(N=5)		1- 3 yrs. (N=155)		3- 7yrs. (N=31)		8- 12yrs. (N= 9)	
	M	SD	M	SD	M	SD	M	SD
Inattentive	46.8	1.3	38.2	2.2	36.4	2.5	31.3	3.0
Hyperactive	35.3	.97	24.5	1.2	20.4	2.2	15.8	2.9
Impulsive	19.0	1.3	12.6	1.2	10.2	1.5	8.5	1.9
Total	101.1	3.57	75.3	4.6	67.0	6.2	55.6	7.8

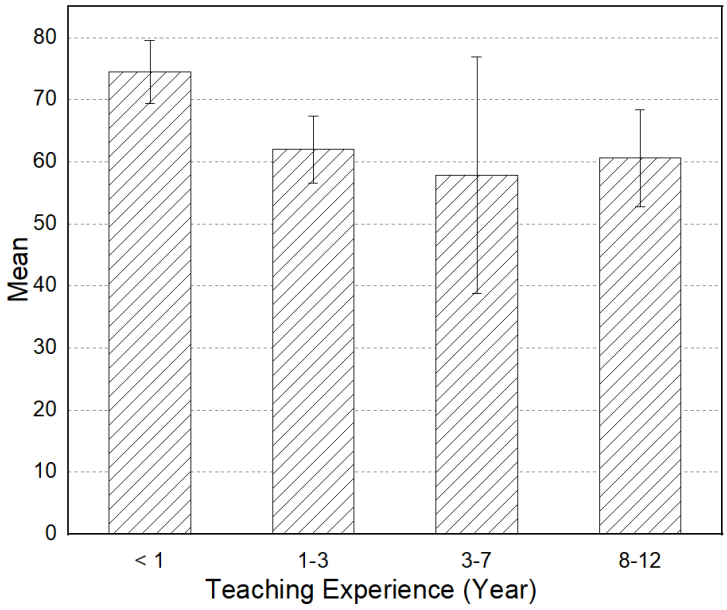

*Figure 4.5.*Graphical representation of mean and standard deviation of teachers' scores on the prevalence of students with ADHD in relation with variable, i.e., Teaching Experience.

Graph also indicated the existence of more students with ADHD in the classes of less experienced teachers' as compared to more experienced teachers.

Table 4.24 describes Mean and SD of teachers' scores on the prevalence of students with ADHD in elementary classrooms in relation with variable, i.e., teaching

experience. From this table, it seems that the existence of teachers with more work experience has lesser existence of ADHD students in their classes. Teachers, who have less work experience, have more existence of ADHD students in their classes. Teachers with less work experience have Mean of 101.1; teachers with more work experience have this Mean, i.e., 55.6.

Table 4.25

ANOVA of Teachers Scores in the Prevalence of Students with ADHD in relation with Variable, i.e., Teaching Experience (n=200)

		Sum of Squares	Df	Mean Square	f	p-value
Inattentive	Between Groups	15.224		15.224		
	Within Groups	288.971	199	1.459	10.43	0.00
Hyperactive	Between Groups	2.890		2.890		
	Within Groups	863.985	199	4.364	16.62	0.00
Impulsivity	Between Groups	2.584		2.584		
	Within Groups	931.171	199	4.703	14.55	0.00
Total	Between Groups	44.651		44.651		
	Within Groups	3981.504	199	20.109	24.22	0.00

Table 4.25 describes the details of statistical hypothesis testing and shows that there is no significant difference in the prevalence of ADHD students in the classes of teachers having different work experiences.

Two-way ANOVA was applied for the prevalence of inattentive value of f and it is 10.43, and its p-value is 0 .00, which are statistically significant at $p< 0.05$. The prevalence of hyperactive value of f is 16.62 and its p-value is 0.00, which are statistically significant at $p< 0.05$. The prevalence of impulsive value of F is 14.55 and its p-value is 0.00 which are statistically significant at $p< 0.05$. So we rejected Ho that there is no difference in the awareness level of teachers having more work experience than less experienced teachers and accepted H_1. After observing the table values, we concluded that there is a significant difference in the awareness level of teachers having more work experience than less experienced teachers in elementary classrooms about the prevalence of students with ADHD among the teachers.

Hypothesis 6

There is no significant difference in the prevalence of students having ADHD in early elementary classes (6th & 7th) and late elementary classes (8th).

Table 4.26

Mean and Standard Deviation of Teachers' Scores on Prevalence of Students with ADHD in relation with variable Grade (n=200)

Subscales	6th (N=61)		7th (N=82)		8th (N=57)	
	M	SD	M	SD	M	SD
Inattentive	30.2	2.2	36.6	2.1	39.6	02
Hyperactive	13.6	2.3	19.7	2.3	28.7	2.3
Impulsive	12.0	1.2	19.0	1.2	23.2	2.2
Total	55.8	5.7	75.3	5.6	91.5	6.5

Table 4.26 describes the Mean and SD of elementary teachers' scores on the prevalence of students with ADHD in 6th, 7th and 8th grades.

Table shows that the prevalence of ADHD gradually increases with the grade; for example, the Mean values of class 5th teachers was 55.8, whereas the mean score of class 8th teachers was 91.5.

From this table, it appears that the existence of inattention, hyperactive and impulsive behaviour is higher in 8th grade as compared to 6th and 5th grade students. Graph 6.4 also shows that the teachers of 8th grade reported higher existence of ADHD as compared to 5th and 6th grade students.

Table 4.27

ANOVA of Teachers' Scores on the Prevalence of Students with ADHD in relation with variable, i.e., Grade (n=200)

		Sum of Squares	df	Mean Square	f	p-value
Inattentive	Between Groups	31.331		1.331	1.870	.00
	Within Groups	302.864	199	1.530		
Hyperactive	Between Groups	2.284		2.284	1.523	.00
	Within Groups	864.591	199	4.367		
Impulsivity	Between Groups	.011		.011	1.559	.00

	Within Groups	933.744	199	4.716		
Total	Between Groups	720.4		7.204	2.355	.00
	Within Groups	4010.951	199	20.298		

Table no. 4.27 describes the result of testing of 6th hypothesis that there is no difference in the prevalence of students with ADHD in early elementary (6th, 7th) and late elementary (8th) classes. Two-way ANOVA was used to see the significance of difference in the responses for the prevalence of inattentive behaviour. The value of F is 2.355 and its p-value is .00 which is statistically significant at $p < 0.05$.

Hypothesis 7

There is no significant difference in the prevalence of students having ADHD at elementary level classes which have diverse students' strengths such as large size classes (more than 40) and average size classes (20-30).

Table 4.28

Mean and Standard Deviation of Teachers' Scores on the Prevalence of Students with ADHD in relation with Variable, i.e., Class Strength (n=200)

Subscale	20-30 (N=73)		30-40 (N=87)		More than 40 (N=40)	
	M	SD	M	SD	M	SD
Inattentive	32.6	3.1	39.9	2.1	42.9	1.7
Hyperactive	15.7	2.5	23.0	2.3	33.0	1.3
Impulsive	19.0	3.2	27.6	2.2	32.6	1.2
Total	67.3	8.8	90.5	6.6	108.5	4.2

Table 4.28 describes the Mean and SD of elementary teachers' scores on the prevalence of students with ADHD in elementary classrooms in relation with variable, i.e., class strength. It appears that teachers who have more than 40 students in their classes have reported higher prevalence of ADHD in their classrooms.

Teachers who have class strength of 20 to 30 reported less prevalence of ADHD. Their mean average is 67.3, whereas teachers who have the class strength of 40 and above have mean value of 108.5.

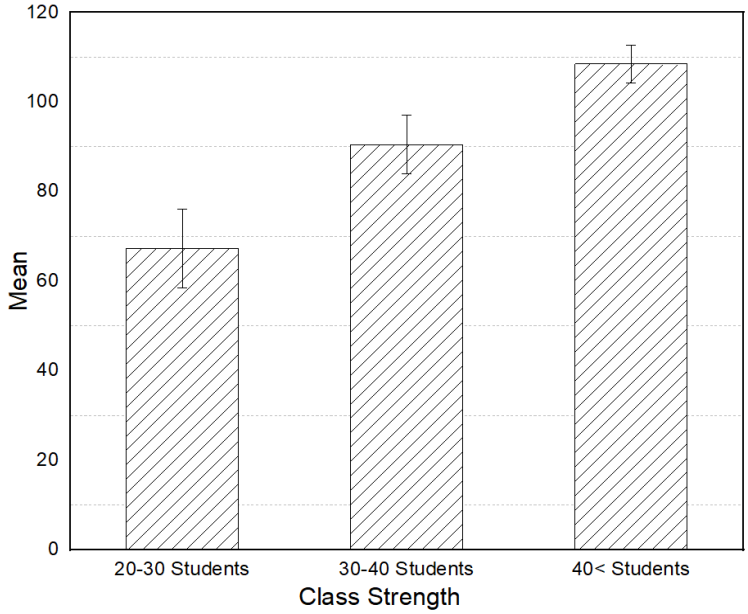

Figure 4.6. Graphical representation of Mean and standard deviation of teachers' scores on the prevalence of students with ADHD in relation with variable, i.e., class strength.

Table 4.29

ANOVA of Teachers' Scores on the Prevalence of Students with ADHD in relation with Variable, i.e., Class Strength (n=200)

		Sum of Squares	Df	Mean Square	F	p-value
Inattentive	Between Groups	3.901		1.950	1.28	.00
	Within Groups	300.294	199	1.524		
Hyperactive	Between Groups	8.701		4.351	1.99	.00
	Within Groups	858.174	199	4.356		
Impulsivity	Between Groups	12.262		1.131	1.23	.00
	Within Groups	931.493	199	4.728		
Total	Between Groups	37.139		18.570	4.91	.00
	Within Groups	3970.016	199	20.249		

Table 4.29 describes the testing of 7th hypothesis showing that there is no difference in the prevalence of students with ADHD in large size classes (more than 40)

as compared to average size classes (20-30). The researcher has applied two-way ANOVA. For inattentive behaviour, the value of f is 1.28 and its p-value is 0.00 which are statistically significant at $p< 0.05$. For hyperactive behaviour, the value of f is 1.99 and its p-value is 0.00 which are statistically significant at $p< 0.05$. For impulsive behaviour, the value of f is 1.23 and its p-value is 0.00 which are statistically significant at $p< 0.05$. The researcher rejected Ho. There is no difference in the prevalence of students with ADHD in large size classes (more than 40) as compared to average size classes (20-30), and hence the researcher accepted H_1. From the values mentioned in the table, it is concluded that there is a significant difference in the prevalence of students with ADHD. It is higher in large size classes (more than 40) as compared to average size classes (20-30).

Hypothesis 8

There is no significant difference in the self-awareness of male and female ADHD students studying at elementary level.

Table 4.30

Mean and Standard Deviation of Students' Scores about the Awareness of their Classroom Behaviour in relation with variable, i.e., Gender (n=300)

Subscales	Male ADHDs (N=150)		Female ADHDs (N=150)	
	M	SD	M	SD
Inattentive	62.12	9.01	57.31	10.03
Hyperactive	29.23	3.52	25.69	4.34
Impulsive	18.35	2.75	15.67	2.55
Total	109.70	15.28	98.67	16.92

Table 4.30 describes the Mean and SD of elementary students' scores on the self-awareness questionnaire about the extent of their ADHD Behaviour in Classrooms in relation with variable, i.e., gender. Subscales wise analysis revealed that overall self-awareness is higher among male ADHD students as compared to female students (M=109.70 Female M=98.67). Students' responses on subscales revealed that overall male students have higher score on inattentive, impulsive and hyperactive behaviour

when compared with female students.

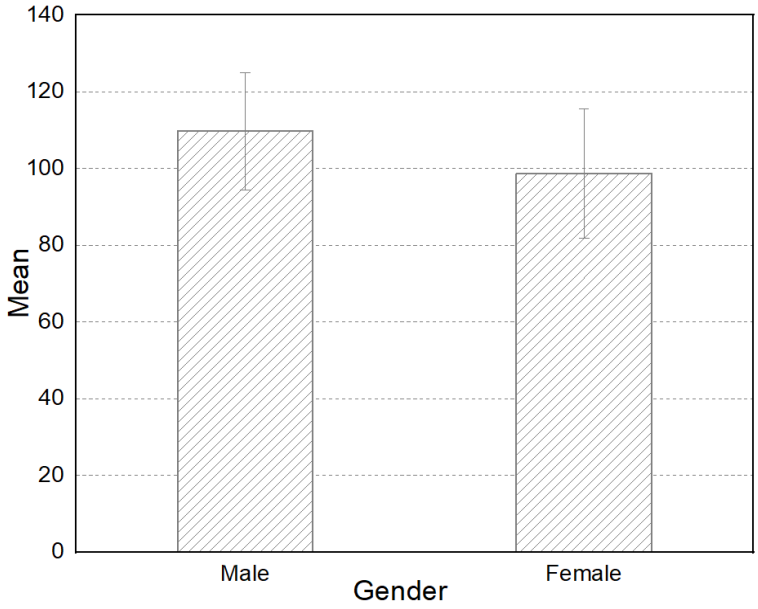

Figure 4.7. Graphical representation of Mean and SD of students' Scores on the self-awareness related to gender. From the above figure, it can be seen that male students are more aware of their ADHD behaviour as compared to female students.

Table 4.31

t-test of Students' Scores about Awareness of the the extent of their ADHD Behaviour in relation with variable, i.e., Gender (n=300)

Source	t-value	df	p-value	95% Confidence Interval of the Difference	
				Lower	Upper
Gender	5.875	299	0.00	1.44	1.56

In order to test the hypothesis that there is no difference in the self-awareness of ADHD in male students as compared to female students of elementary classes, two sample t-test was applied to see the significant difference between the scores of male and female ADHD students.

The result shows that t value is 5.875 and its p-value is 0.00 which are statistically significant at $p< 0.05$ level. So, the researcher rejected Ho that there is no difference in the self-awareness of ADHD in male students as compared to female students and accepted H_1. It is concluded that there is a significant difference in the self-awareness about the extent of their ADHD behaviour in classrooms of male students as compared to female students in elementary classes.

Hypothesis 9

There is no significant difference in self-awareness of the students (about their own behaviour) studying at grade 6th, grade 7th and grade 8th.

Table 4.32

Mean and Standard Deviation of Students' self-awareness Scores about the extent of their ADHD Behaviour in Classroom in relation with variable, i.e., grade Level (n=300)

Subscales	6th (N=43)		7th (N=132)		8th (N=124)	
	M	SD	M	SD	M	SD
Inattentive	60.26	8.90	62.35	7.82	65.17	5.91
Hyperactive	29.77	9.19	36.88	7.26	39.98	6.96
Impulsive	29.42	7.02	32.81	5.45	43.06	4.77
Total	119.45	25.11	132.04	20.53	148.21	17.64

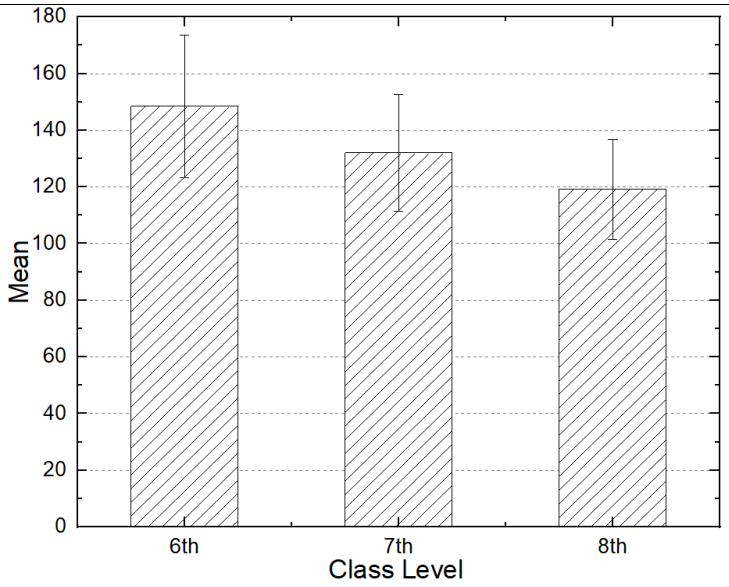

Figure 4.8. Graphical representation of Mean and SD of students' scores on the self-awareness questionnaire about the extent of their ADHD behaviour in classrooms in relation to the variable, i.e., class level.

Table 4.32 describes the Mean and SD of elementary students' scores on the self-awareness questionnaire about the extent of their ADHD behaviour in classroom in relation to variable, i.e., grade level. Mean and SD of elementary students' scores on the self-awareness of their classroom behaviour in 6th, 7th and 8th classes have been calculated. The Mean values and SD values of inattentive behaviour reported by students of 6th class are (M=30.2; SD= 2.2). The Mean values and SD values of

inattentive behaviour responded by students of 7th class are (M=62.35; SD= 7.82). On the other hand, the Mean values and SD values of inattentive behaviour responded by students of 8th class are (M=65.17; SD= 5.91).

The Mean values and SD values of hyperactive behaviour reported by students of 6th class are (M = 29.77; SD = 9.19). The Mean values and SD values of hyperactive behaviour responded by students of 7th class are (M=36.88; SD= 7.26). On the other hand, the Mean values and SD values of hyperactive behaviour responded by students of 8th class are (M=39.98; SD= 6.96). The Mean values and SD values of impulsive behaviour reported by students of 6th class are (M = 29.42; SD = 7.02). The Mean values and SD values of impulsive behaviour responded by students of 7th class are (M=32.81; SD= 5.45). On the other hand, the Mean values and SD values of impulsive behaviour responded by students of 8th class are (M=43.06; SD=4.77).

From this table, it can be seen that almost all students are aware of their ADHD behaviour. The facets of ADHD gradually increase in elementary students. The existence of inattention, hyperactive and impulsive behaviour is higher in students of 8th class.

Table 4.33

ANOVA of Students' self-awareness Scores about the extent of their ADHD Behaviour in Classroom in relation with variable grade Level (n=300)

		Sum of Squares	Df	Mean Square	f	p-value
Inattention	Between Groups	783.317		261.106	2.386	.00
	Within Groups	32387.599	299	109.418		
Hyperactive	Between Groups	84.817		28.272	1.766	.00
	Within Groups	4739.703	299	16.013		
Impulsive	Between Groups	21.733		7.244	1.016	.00
	Within Groups	2110.214	299	7.129		
Total	Between Groups	1440.937		480.312	2.534	.00
	Within Groups	56115.729	299	189.580		

Table 4.33 revealed the ANOVA scores of the hypothesis testing related to students' awareness and grades. Two-way ANOVA was applied for inattentive behaviour, and

the value of *f* is 2.386 and its p-value is .00 which are statistically significant at p< 0.05. For the hyperactive behaviour, the value of *f* is 1.766 and its p-value is .00 which are statistically significant at p< 0.05. For the impulsive behaviour, the value of *f* is 1.016 and its p-value is .00 which are statistically significant at p< 0.05. Hence the Ho is rejected, and it is clear that there is no significant difference in the self-awareness of the students (about their own behaviour) studying at grade 6th, grade 7th and 8th .

Hypothesis 10

There is no significant difference in the self-awareness of the ADHD students of private-sector and public-sector elementary schools.

Table 4.34

Mean and Standard Deviation of Students' Scores on awareness of their Classroom Behaviour in relation with Variable, i.e., School Sector (n=300)

Subscales	Public (N=150)		Private (N=150)	
	M	SD	M	SD
Inattentive	62.55	8.71	58.88	10.32
Hyperactive	38.80	2.91	27.12	5.10
Impulsive	33.05	2.59	12.98	5.76
Total	104.40	17.21	98.98	17.18

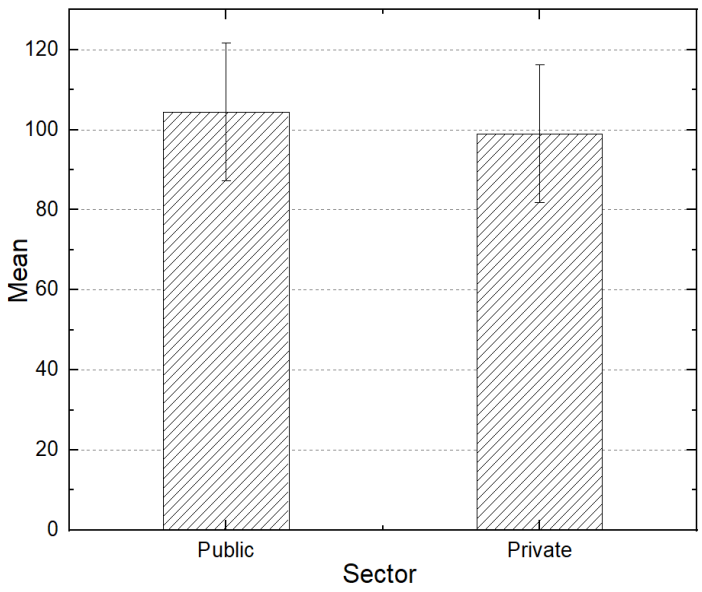

Figure 4.9 the graph about the students of Public score on the awareness questionnaire as compared to the students of Private sector elementary school.

Table 4.34 defines the characteristics (Mean, SD) of elementary students' scores on the self-awareness questionnaire about the extent of their ADHD behaviour in classroom regarding the variable, i.e., school sector. Mean values and SD values of inattentive behaviour were reported by the public sector students, i.e., M=62.55; SD = 8.71 respectively. Mean values and SD values of hyperactive behaviour were reported by the public sector students and they are: M=38.80: SD= 2.91. On the other hand, Mean values and SD values of impulsive behaviour were reported by the public sector students and they are: M=33.05: SD= 2.59. On the other hand, Mean values and SD of private sector students on all subscales of awareness questionnaire are as follows: Inattentive, M=58.88; SD= 10.32; hyperactive M=27.12: SD= 5.10, and impulsive M=12.98: SD= 5.76. Overall mean scores of Public sector students are 104.40 and mean score of private sector students yielded 98.98.

Table 4.35

t-test of Students' Scores on the awareness of their Classroom Behaviour in relation with Variable, i.e., School Sector (n=300)

Source	t-value	Df	p-value	95% Confidence Interval of the Difference	
				Lower	Upper
Sector	3.89	299	0.00	1.44	1.56

$p < 0.05$

For hypothesis testing, two sample t-test was calculated. T-value 3.89 is significant at $p< 0.05$. Therefore, with these results, the researcher rejected Ho that stated there is no significant difference in self-awareness of ADHD students of private-sector and public-sector elementary schools. Therefore, H_1 has been accepted and decided that there is a significant difference in students' self-awareness about their behaviour in public sector elementary classes as compared to private sector elementary classes.

Hypothesis 11

There is no difference in the self-awareness of ADHD children of more qualified fathers and less qualified fathers.

Table 4.36

Mean and Standard Deviation of ADHD Students' Scores regarding Self-awareness of Behaviour in relation with Variable, i.e., Fathers' Qualification (n=300)

Subscale	Matric-BA/BSc (N=76)		MA/M. SC/M. Ed (N=109)		M. Phil (N=109)		PhD (N=6)	
	M	SD	M	SD	M	SD	M	SD
Inattentive	68.6	4.5	59.6	5.9	56.4	6.7	49.3	9.63
Hyperactive	47.7	3.8	41.1	5.1	36.7	5.7	33.3	7.03
Impulsive	38.2	2.6	33.1	5.5	22.7	7.5	19.3	8.86
Total	154.5	10.9	133.8	16.9	115.8	19.9	101.9	25.52

The Mean and SD of elementary students' scores about the extent of their ADHD behaviour in classrooms related to their fathers' qualification is represented in Table 4.36.

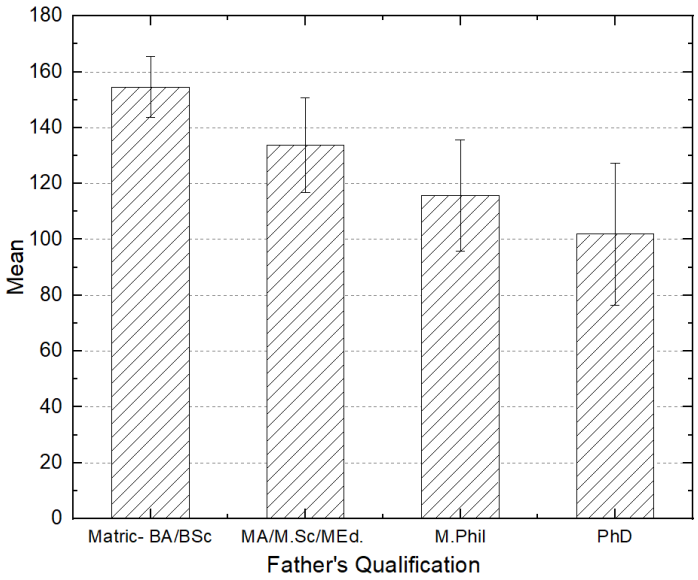

Figure 4.10 .Graphical representation of students' scores. Mean and SD about the extent of their ADHD Behaviour in Classroom related to their fathers' qualification.

The Mean values and SD values of students who have inattentive behaviour and who have fathers' qualification of BA / B.SC or B. Ed are as follows: (M=68.6; SD= 4.5). The Mean values and SD values of students who have inattentive behaviour and who have fathers' qualification of MA/M. SC/Med are as follows: (M=59.6; SD= 5.9). The Mean values and SD values of students who have inattentive behaviour and who have fathers' qualification of M. Phil are as follows: (M=56.4; SD= 6.7).

On the other hand, the Mean values and SD values of students who have inattentive behaviour and who have fathers' qualification of Ph.D are as follows: (M=49.3; SD= 9.63).

The Mean values and SD values of hyperactive behaviour students, whose fathers' qualification is BA/B. SC/Bed are as follows: (M=68.6; SD= 4.5). The Mean values and SD values of hyperactive behaviour students, whose fathers' qualification is MA/M. SC/Med, are as follows: (M=41.1; SD= 5.1). The Mean values and SD values of hyperactive behaviour students, whose fathers' qualification is M. Phil are as follows: (M=36.7; SD= 5.7). Moreover, the Mean values and SD values of students who have hyperactive behaviour and who have fathers' qualification of PhD are as follows: (M=33.3; SD= 7.03).

The Mean values and SD values of impulsive behaviour students, whose fathers' qualification is BA/B. SC/B. Ed, are as follows: (M=38.2; SD= 2.6). The Mean values and SD values of impulsive behaviour students, whose fathers' qualification is MA/M. SC/M Ed, are as follows: (M=33.1; SD= 5.5). The Mean values and SD values of impulsive behaviour students, whose fathers' qualification is M. Phil, are as follows: (M=22.7; SD= 7.5). On the other hand, the Mean values and SD values of impulsive behaviour students, whose fathers' qualification is PhD, are (M=19.3; SD= 8.86). The graph shows less ADHDs in children of highly qualified fathers (M. Phil and PhD) as compared to less educated fathers (Matric, BA/ BSc and M.A/ M.Sc/ M. Ed).

Table 4.37

ANOVA of Students' Scores on Self-awareness of ADHD Behaviour in relation with Variable, i.e., Fathers' Qualification (n=300)

		Sum of Squares	df	Mean Square	f	p-value
Inattention	Between Groups	463.933		154.644	1.400	.00
	Within Groups	32706.984	299	110.497		
Hyperactive	Between Groups	125.551		41.850	2.636	.00
	Within Groups	4698.969	299	15.875		
Impulsive	Between Groups	25.563		8.521	1.197	.00
	Within Groups	2106.384	299	7.116		

		Sum of Squares	df	Mean Square	f	p-value
Total	Between Groups	967.722		322.574	1.687	.00
	Within Groups	56588.945	299	191.179		

$p < 0.05$

Table 4.37 describes hypothesis testing carried out to see the differences in the scores of students with ADHD in relation with variable, i.e., father' qualification. For the inattentive behaviour of students, the value of f is 1.400 and its p-value is .00 which are statistically significant at $p< 0.05$. For the hyperactive behaviour of students, the value of f is 2.636 and its p-value is .00 which are statistically significant at $p< 0.05$. For the impulsive behaviour of students, the value of f is 1.197 and its p-value is also .00 which are statistically significant at $p< 0.05$. Therefore, hypothesis Ho "There is no difference in the self-awareness of ADHD among children of more qualified fathers and less qualified fathers". Hence, H_1 has been accepted and concluded that there is a significant difference in the self-awareness of children (ADHD) of more qualified fathers as compared to less qualified fathers.

Hypothesis 12

There is no difference in the self-awareness of children with ADHD whose mothers are more qualified and those of less qualified.

Table 4.38

Mean and Standard Deviation of Students' Scores on the self-awareness Questionnaire about the extent of their ADHD Behaviour in Classroom in relation with variable, i.e., Mothers' Qualification (n=300)

Subscale	Primary-8yrs (N=48)		8-12yrs (N=114)		12-16yrs (N=132)		M. Phil/PhD (N=6)	
	M	SD	M	SD	M	SD	M	SD
Inattentive	68.8	5.3	60.5	6.0	52.6	7.3	43.2	9.9
Hyperactive	46.8	3.6	38.3	4.8	25.2	8.3	22.7	10.6
Impulsive	52.4	2.4	43.3	4.4	31.1	5.9	29.5	7.8
Total	168.0	11.3	142.1	15.2	108.9	21.5	95.4	28.3

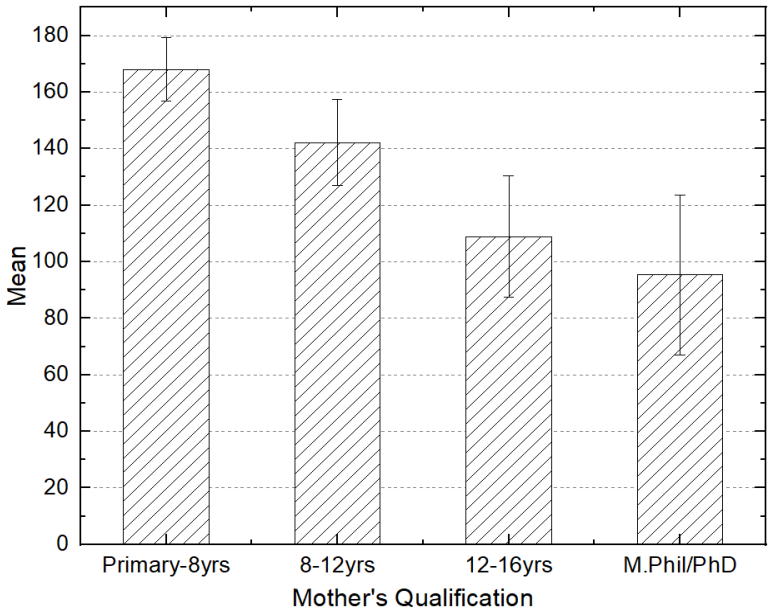

*Figure 4.11.*Graphical representation of students' scores. Mean and SD about the extent of their ADHD Behaviour in Classroom related to mothers' qualification.

Table 4.38 describes students' scores. Mean and SD about self-awareness and their classroom behaviour in relation with variable such as mothers' qualification.

Mean values and SD values on subscale inattentive behaviour responded by students of mothers having the qualification of Primary-8yrs are: M=68.8 and SD= 5.3 respectively. Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of 8-12yrs are: M=60.5 and SD= 6 respectively. Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of 12-16yrs are: M=52.6 and SD= 7.3 respectively. On the other hand, the Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of M. Phil/ Ph.D are M=43.2 and SD= 9.9 respectively.

The Mean values and SD values of hyperactive behaviour responded by students of mothers having the qualification of Primary-8yrs are (M=46.8; SD= 3.6). The Mean values and SD values of hyperactive behaviour responded by students of mothers having the qualification of 8-12yrs are (M=38.3; SD= 4.8). The Mean values and SD values of hyperactive behaviour responded by students of mothers having the qualification of 12-16yrs are (M=25.2; SD= 8.3). On the other hand, the Mean values and SD values of hyperactive behaviour responded by students of mothers having the qualification of M. Phil/ Ph.D. are (M=22.7; SD= 7.6).

Mean values and SD values of impulsive behaviour responded by students of mothers having the qualification of Primary-8yrs are (M=52.4; SD= 2.4). The Mean values and SD values of impulsive behaviour responded by students of mothers having the qualification of 8-12yrs are (M=43.3; SD= 4.4). The Mean values and SD values of impulsive behaviour responded by students of mothers having the qualification of 12-16yrs are (M=31.1; SD= 5.9). On the other hand, the Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of M. Phil/ Ph.D. are (M=29.5; SD= 7.8).

On the whole, it has been reported that children of highly qualified mothers exbihted less facets of ADHD as compared to children of less qualifed mothers.

Table 4.39

ANOVA of Students' Scores on the self-awareness Questionnaire about the extent of their ADHD Behaviour in Classroom in relation with variable, i.e., Mothers' Qualification (n=300)

		Sum of Squares	Df	Mean Square	f	p-value
Inattention	Between Groups	229.087		76.362	0.686	0.00
	Within Groups	32941.830	299	111.290		
Hyperactive	Between Groups	66.016		22.005	1.369	0.00
	Within Groups	4758.504	299	16.076		
Impulsive	Between Groups	66.546		22.182	3.179	0.00
	Within Groups	2065.400	299	6.978		
Total	Between Groups	361.649		120.554	5.234	0.00
	Within Groups	39765.734	299	134.344		

Two-way ANOVA was calculated to test hypothesis related with mothers' qualification. Table 4.39 describes the values on all subscales such as inattentive behaviour, the value of *f* is 0.686 and its p-value is .00 which are statistically significant at $p< 0.05$. For hyperactive behaviour, the value of *f* is 1.369 and its p-value is .00 which are statistically significant at $p< 0.05$. For impulsive behaviour, the value of *f* is 3.179 and its p-value is .00 which are statistically significant at $p< 0.05$. So, the researcher rejected Ho and accepted H_1. Therefore, it has been concluded that there is a significant difference in the awareness of ADHD among the children of highly qualified mothers and less qualified mothers.

Hypothesis 13

There is no significant difference in the self-awareness of ADHD students whose fathers' are employed in the private and public sector organizations.

Table 4.40

Mean and Standard Deviation of Students' Scores on the Self-awareness questionnaire about the extent of their ADHD Behaviour in Classroom in relation with variable, i.e., Father's Profession (n=300)

Subscales	Public-sector (N=169)		Private-sector (N=131)	
	M	SD	M	SD
Inattentive	59.7	10.7	59.7	10.5
Hyperactive	27.7	3.9	27.2	4.1
Impulsive	12.1	2.7	12.9	2.7
Total	99.5	17.3	99.8	17.1

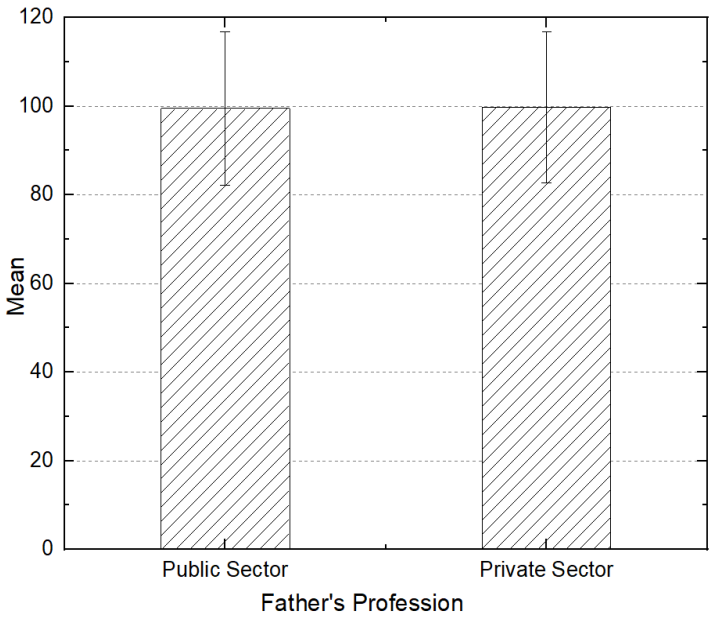

Figure 4.12. Graphical representation of students' scores. Mean and SD about the extent of their ADHD Behaviour in Classroom related to fathers' profession. No significant difference was seen on this variable.

Students' Mean and SD about awareness of their classroom behaviour in relation to the variable such as father's profession has been shown in Table 4.40. The Mean values and SD values of inattentive behaviour responded by students of fathers

having a job at the public sector are M=59.7 and SD= 10.7 respectively. Mean values and SD values of hyperactive behaviour responded by students of fathers having a job at the public sector are M=27.7 and SD= 3.9 respectively. On the other hand, the Mean values and SD values of impulsive behaviour responded by students of fathers having a job at the public sector are M=12.1 and SD= 2.7 respectively. Mean values and SD values of inattentive behaviour responded by students of fathers having a job in private sector are M=59.7 and SD= 10.5 respectively.

The Mean values and SD values of hyperactive behaviour responded by students of fathers having a private sector job are (M=27.2; SD= 4.1). On the other hand, Mean values and SD values of impulsive behaviour responded by students of fathers having a private sector job are (M=12.9; SD= 2.7). From this table, it appears that the existence of inattention and hyperactive behaviour is approximately the same in children of fathers pursuing a job in the public sector or private sector.

Table 4.41

ANOVA of Mean and Standard Deviation of Students' Scores on the Self-awareness questionnaire about the extent of their ADHD Behaviour in Classroom in relation with variable such as Father's Profession (n=300)

		Sum of Squares	df	Mean Square	f	p-value
Inattention	Between Groups	1.126		1.126	0.68	0.06
	Within Groups	33169.790	299	111.308		
Hyperactive	Between Groups	14.102		14.102	3.84	0.08
	Within Groups	4810.418	299	16.142		
Impulsive	Between Groups	.813		.813	0.11	0.06
	Within Groups	2131.133	299	7.151		
Total	Between Groups	14.342		14.342	0.74	0.09
	Within Groups	57542.324	299	193.095		

Two –way ANOVA was performed to test the hypothesis that there is no significant difference in the self-awareness of ADHD students whose fathers are employed in the private and public sector organizations.

From table 4.41, it can be seen that on subscale, i.e., inattentive, the value of *f is* 0.68 and its p-value is .06 which are not statistically significant at p> 0.05. For hyperactive, the value of *f* is 3.84 and its p-value is .08 which are not statistically

significant at p> 0.05. For impulsive behaviour, the value of *f* is 0.11 and its p-value is .06 which iare not statistically significant at p> 0.05.

On the basis of above calculations, Ho that there is no difference in the self-awareness of ADHD students, whose fathers are employed in the private and public sector organizations, is accepted and no significant difference has been seen on this variable.

Hypothesis 14

There is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women.

Table 4.42

Mean and SD of ADHD Students' Score on Awareness about the extent of their ADHD Behaviour in Classroom in relation with Variable, i.e., Mothers' Profession (n=300)

Subscales	Working mother (N=105)		House-wife (N=195)	
	M	SD	M	SD
Inattentive	60.9	9.9	57.3	11.5
Hyperactive	27.4	3.9	23.6	4.2
Impulsive	13.7	2.7	12.9	3.9
Total	102.0	16.5	93.5	19.6

Table 4.42 shows Mean and SD of ADHD students about awareness of their classroom behaviour in relation with variable, i.e., mothers' profession.

From this table, it can be seen that students whose mothers work are more aware about their classroom undesired behaviour. The children of working mothers' Mean value is 102.0, and non-working mothers' Mean value is 93.5.

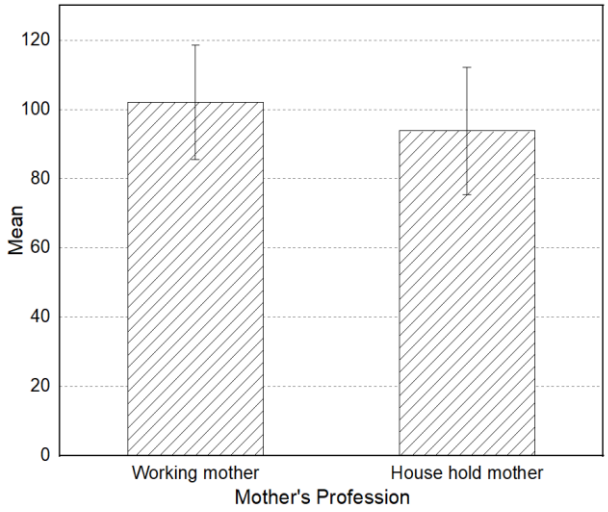

Figure 4.13. Graphical representation o*f ADHD Students' Score on Awareness about the extent of their ADHD Behaviour in Classroom in relation with Variable, i.e., Mothers' Profession (n=300)*

Table 4.43

ANOVA of Students' Score on Awareness about the extent of their ADHD Behaviour in Classroom in relation with Variable, i.e., Mothers' Profession (n=300)

		Sum of Squares	Df	Mean Square	f	p-value
Inattention	Between Groups	22.572		22.572	1.20	0.00
	Within Groups	33148.34	299	111.236		
Hyperactive	Between Groups	2.006		2.006	13.72	0.00
	Within Groups	4822.514	299	16.183		
Impulsive	Between Groups	5.629		5.629	1.78	0.00
	Within Groups	2126.318	299	7.135		
Total	Between Groups	1.465		1.465	1.80	0.00
	Within Groups	57555.20	299	193.138		

Two-way ANOVA was used to test the hypothesis. There is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women as the results show in Table 4.43. For inattentive behaviour, the value of *f* is 1.20 and its p-value is 0.00 which are statistically significant at $p < 0.05$ level. For hyperactive behaviour, the value of *f* is 13.72 and its p-value is 0.00 which are statistically significant at 0.05 level of significance. For impulsive behaviour, the value of *f* is 1.78 and its p-value is 0.00 which are statistically significant at $p > 0.05$ level of

significance. Therefore, the hypothesis Ho was rejected that there is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women and H1 was accepted.

Hypothesis 15

There is no significant difference in the self-awareness of ADHD students belonging to the family of various income groups.

Table 4.44

Mean and Standard Deviation of Students' Scores on the Self-Awareness Questionnaire about the extent of their ADHD Behaviour in Classroom in relation with Variable, i.e., Family Income (n=300)

Subscale	20,000-30,000 (N=1)		31,000-40,000 (N=166)		41,000-50,000 (N=98)		51,000 and above (N=35)	
	M	SD	M	SD	M	SD	M	SD
Inattentive	66	4.1	54.8	5.9	49.4	7.8	43.2	9.5
Hyperactive	47	5.5	39.1	8.1	30.8	9.7	21.2	10.2
Impulsive	28	3.8	20	2.7	17.7	2.2	14.7	1.7
Total	141	13.4	113.9	16.7	97.9	19.7	79.1	21.4

Students' Mean and SD on the self-awareness questionnaire in relation with variable, i.e., family monthly income has been displayed in 4.42. The SD values and Mean values on subscale inattentive behaviour responded by students, who are from the family income of 20,000-30,000, are (SD= 4.1, M=66). The Mean values and SD values on subscale inattentive behaviour responded by students, who are from the family income of 31,000-40,000, are (M=54.8; SD= 5.9). The Mean values and SD values on subscale inattentive behaviour of students' score, who are from the family income of 41,000-50,000, are (M=49.4; SD= 7.8). The Mean values and SD values on sub-scale inattentive behaviour students with a family income of 51,000 and above are M=43.2 and SD= 9.5 respectively.

Mean values and SD values of hyperactive behaviour responded by students with a family income of 20,000-30,000 are (M=47; SD= 5.5). The Mean values and SD

values of hyperactive behaviour responded by students with a family income of 31,000-40,000 are (M=39.1; SD= 8.1). The Mean values and SD values of hyperactive behaviour responded by students with a family income of 41,000-50,000 are (M=30.8; SD= 9.7). The Mean values and SD values of hyperactive behaviour responded by students with a family income of 51,000 and above are (M=21.2; SD= 10.2). The Mean values and SD values of impulsive behaviour responded by students with a family income of 20,000-30,000 are (M=28; SD= 3.8).

The Mean values and SD values of impulsive behaviour responded by students with a family income of 31,000-40,000 are (M=20; SD= 2.7). The Mean values and SD values of impulsive behaviour responded by students with a family income of 41,000-50,000 are (M=17.7; SD= 2.2). The Mean values and SD values of impulsive behaviour responded by students with a family income of 51,000 and above are (M=14.7; SD= 1.7).

Overall students, who belongs to less income groups, have more awareness about their ADHD behaviour, and they also exhibit higher score on all subscales of ADHD (Rs 20,000-30,000 Mean=141, and Rs 51,000 Mean =79.1).

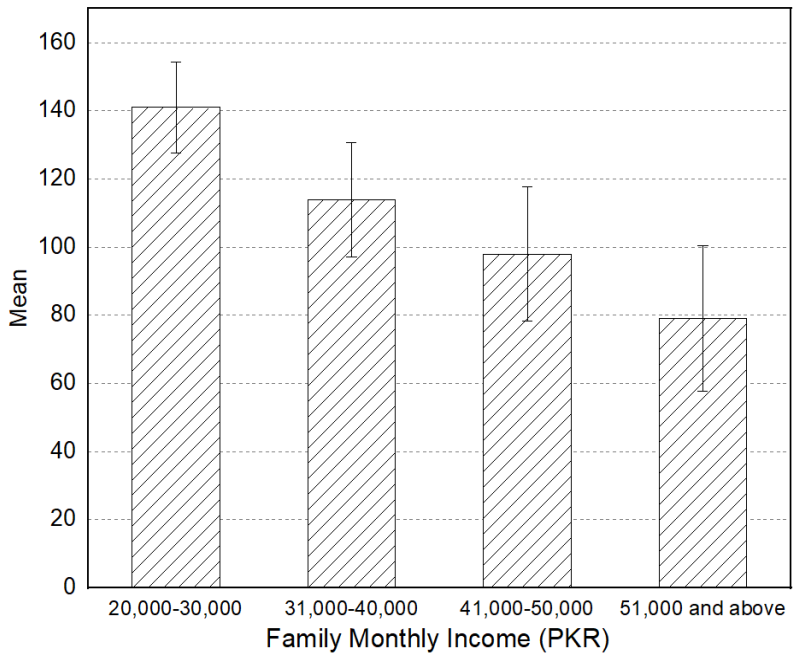

Figure 4.14. Graphical representation of students' scores. Mean and SD are displayed about the extent of their ADHD behaviour in classroom related to family income. The graph illustrates that ADHD is higher in the children who belong to lower monthly income family than the children of the high-income family.

Table 4.45

ANOVA of Students' Scores on the Self-Awareness Questionnaire about the extent of their ADHD Behaviour in Classroom in relation with Variable, i.e., Family Income (N=300)

		Sum of Squares	Df	Mean Square	F	p-value
Inattention	Between Groups	263.259		87.753	7.89	.00
	Within Groups	32907.658	299	111.175		
Hyperactive	Between Groups	44.390		14.797	9.16	.00
	Within Groups	4780.130	299	16.149		
Impulsive	Between Groups	19.920		6.640	9.31	.00
	Within Groups	2112.027	299	7.135		
Total	Between Groups	154.451		51.484	2.65	.00
	Within Groups	57402.216	299	193.926		

Two-way ANOVA was applied to test the above-mentioned hypothesis as shown in Table 4.45. For inattentive, the value of f is 7.89 and its p-value is 0.00 which are statistically significant at $p< 0.05$.

For hyperactive, the value of *f* is 9.16 and its p-value is 0.00 which are statistically significant at $p< 0.05$. For impulsive, the value of *f* is 9.31 and its p-value is 0.00 which are statistically significant at $p< 0.05$. Therefore, Ho statement "There is no significant difference in the self-awareness of ADHD students belonging to the family of various income groups" was rejected and H_1 accepted. It is determined that there is an effect of monthly family income on students' self-awareness about ADHD behaviour.

Hypothesis 16

There is no significant difference in the self-awareness of ADHD students having less number and more number of siblings.

Table 4.46

Mean and SD of ADHD Students' Scores on the Self-awareness Questionnaire of their Classroom Behaviour in relation with Variable, i.e., Number of Siblings (n=300)

Subscales	1-2(N=56)		2-5(N=192)		5-7(N=4the 7)		more than 7(N=5)	
	M	SD	M	SD	M	SD	M	SD
Inattentive	54.4	9.2	58.9	8.6	61.1	8	65	7.5
Hyperactive	26.3	5.6	29.2	5.1	31.3	4.3	35.6	3.4
Impulsive	18.6	7.7	20.2	6.7	23.7	5.6	28	4.7
Total	99.3	22.5	108.3	20.4	116.1	17.9	128.6	20.1

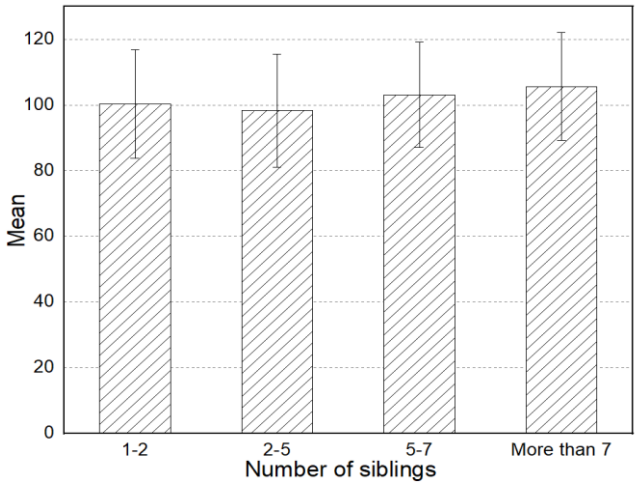

Figure 4.15. Graphical representation of students' scores. Mean and SD about the extent of their ADHD Behaviour in Classroom related to the number of siblings.

Table 4.46 depicts the Mean and SD of ADHD students' scores on the self-awareness questionnaire in relation with variable, i.e., number of siblings. The Mean values and SD values of inattentive behaviour responded by students with 1 or 2 sibling(s) are (M=54.4; SD= 9.2). The Mean values and SD values of inattentive behaviour responded by students with 2 to 5 siblings are (M=58.9; SD= 8.6). The Mean values and SD values of inattentive behaviour responded by students with 5 to 7 siblings are (M=61.1; SD= 8). The Mean values and SD values of inattentive behaviour responded by students having greater than 7 siblings are (M=65; SD= 7.5).

Mean values and SD values of hyperactive behaviour responded by students with 1 to 2 siblings are M=26.3; SD= 5.6. The Mean values and SD values of hyperactive behaviour responded by students with 2 to 5 siblings are M=29.2; SD= 5.1. The Mean values and SD values of hyperactive behaviour responded by students with

5 to 7 siblings yielded M=31.3; SD= 4.3. The Mean values and SD values of hyperactive behaviour responded by students having greater than 7 siblings are M=35.6; SD= 3.4. The Mean values and SD values of impulsive behaviour responded by students with 1 to 2 siblings are M=18.6; SD= 7.7. The Mean values and SD values of impulsive behaviour responded by students with 2 to 5 siblings are M=20.2; SD= 6.7. The Mean values and SD values of impulsive behaviour responded by students with 5 to 7 siblings are M=23.7; SD= 5.6. The Mean values and SD values of impulsive behaviour responded by students having greater than 7 siblings are M=28; SD= 4.7.

Overall ADHD students who are having more number of siblings have higher score on the self-awareness questionnaire. The subscale wise analysis revealed that overall they have more tendencies of inattentive, hyperactive and impulsive behaviour than ADHD students having less number of siblings such as 1 to 2 siblings, and their Mean is 99.3 which is more than 7 siblings and their M is 128.6.

Table 4.47

ANOVA of ADHD Students' Scores on the Self-awareness Questionnaire of their Classroom Behaviour in relation with Variable, i.e., Number of Siblings (n=300)

		Sum of Squares	Df	Mean Square	F	p-value
Inattention	Between Groups	389.289		129.763	1.172	0.00
	Within Groups	32781.627	299	110.749		
Hyperactive	Between Groups	333.401		111.134	7.32	0.00
	Within Groups	4491.119	299	15.173		
Impulsive	Between Groups	23.989		7.996	1.12	0.00
	Within Groups	2107.958	299	7.121		
Total	Between Groups	698.534		232.845	1.21	.00
	Within Groups	56858.132	299	192.088		

Table 4.47 reveals the procedure of ANOVA carried out to test hypothesis. It is a two-way ANOVA test. For inattentive behaviour, the value of *f* is 1.172 and its p-value is 0.00 which are statistically significant at $p< 0.05$. For hyperactive behaviour, the value of *f* is 7.32 and its p-value is 0.00 which are statistically significant at $p< 0.05$. For

impulsive behaviour, the value of *f* is 1.12 and its p-value is 0.00 which are statistically significant at p< 0.05.

4.6 Research Questions

Research question 1

What are the physical conditions of elementary classrooms as perceived by teachers?

Table 4.48

Percentage of Teachers' Scores about the Physical Conditions of elementary classrooms (n=200)

Source	Frequency	Percent (%)
Excellent	8	4.0%
Good	64	32%
Fair	26	13%
Underprivileged	102	51%
Total	200	100%

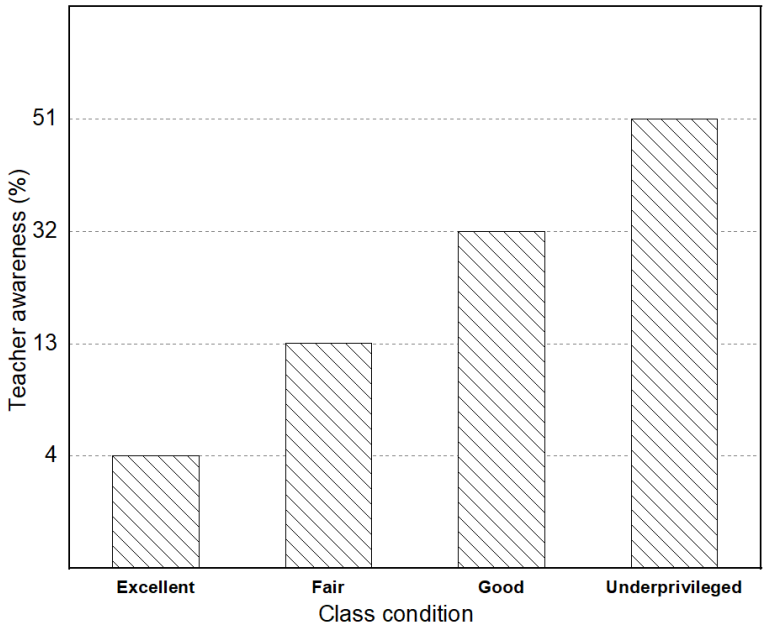

Figure 4.16. Graphical description of teachers' scores related to Physical conditions of elementary classrooms.

The percentage of the perception of teachers about the physical condition of elementary classrooms has been shown in Table 4.46. It is evident that 51 percent

teachers perceived the conditions of elementary classrooms as *underprivileged*, 13 percent teachers perceived the conditions of elementary classrooms *fair* and 32 percent teachers perceived the conditions of elementary classrooms as *good*.

The table also uncovered that only 4 percent of teachers have viewed the physical conditions of elementary classrooms as *excellent*.

Research question 2

Is there any difference in classroom conditions of the public and private elementary classrooms?

Table 4.49

Comparison of Mean and SD of Teachers' Scores about the Difference of physical Classroom Conditions related to Elementary Classes of Public and Private Sector (n=200)

	Public Sector (N=100)		Private Sector (N=100)	
Classroom Condition	M	SD	M	SD
	3.7	0.51	5.15	0.38

Table 4.49 shows that the Mean value and SD value of teachers' scores about the classroom conditions of the private sector and public sector elementary level classrooms. The private sector has a Mean value of 5.15 which is greater than the Mean value of public sector which is 3.7. The value of the standard deviation of the private sector is 0.38 and the value standard deviation of the public sector is 0.51.The mean difference between the public and private sector classroom conditions is 1.45. These values illustrate that the perceived condition of private sector is better than the public sector classrooms.

Table 4.50

Comparison of Mean and SD of Teachers' Scores about the Difference of physical Classroom Conditions of Elementary Classes of Public and Private Sector (n=200)

Source	t	*df*	p-value	95% Confidence Interval of the Difference	
				Lower	Upper
School sector	3.05	199	0.02	1.29	1.43

$p < 0.05$

Table 4.50 describes the difference between t values of the scores of public-and private sector teachers regarding physical conditions of elementary classrooms. Two sample t-tests were performed, the value of t is 3.05 and its p-value is 0.02 which are less than the level of statistical significance of 0.05. The value of t-test is also supporting the significant difference in the physical conditions of public and private sector teachers' elementary classrooms.

Research question 3

What is the level of teachers' awareness regarding the learning difficulties of elementary level students?

Table 4.51

Teachers' Level of Awareness about learning difficulties *of Elementary level Students*

Dimensions of LD	N=200	Percentage
Overall		
Low	147	73.5
High	53	26.5
Concept		
Low	147	73.5
High	53	26.5
Characteristics		
Low	112	56
High	88	44
Causes		
Low	130	65
High	70	35
Identification		
Low	156	78
High	44	22
Training		
Low	150	75
High	50	25
Guidance		
Low	161	80.5
High	39	19.5

Table 4.51 above illustrates the entire level of elementary school teachers' awareness of learning difficulties at various levels. 73.5% of the respondents have a low level of awareness about learning difficulty. As far as the characteristics of ADHD students are concerned, 56% respondents have low level of awareness, and 65% have low level of awareness about the causes of learning difficulty. 78% shows low level of awareness about the identification of learning difficulty, and 75% displayed a low level of training to handle learning difficulties. 80.5% of

the respondents have exposed that they do not know about how to guide such students who have learning difficulty.

The graph illustrates that teachers have a low level of awareness about the learning difficulties in elementary classrooms.

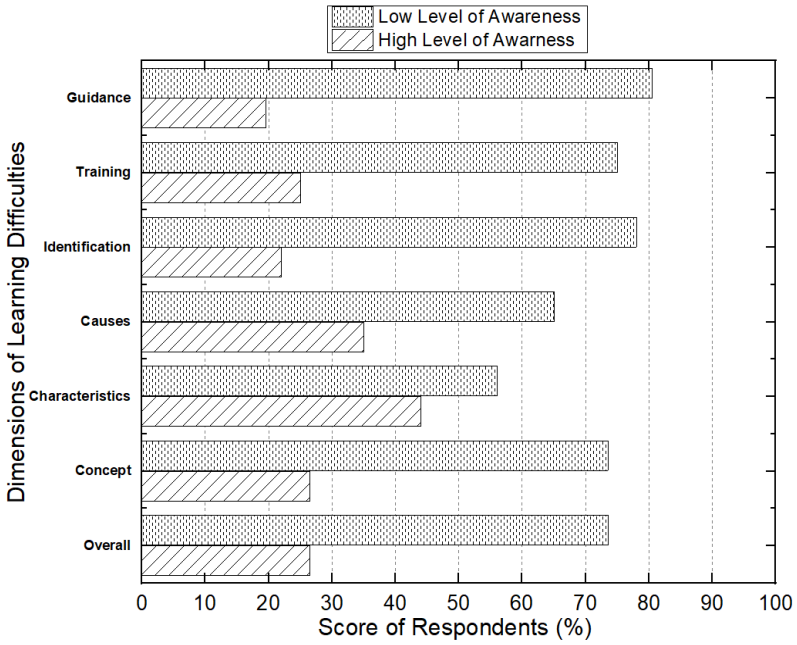

Figure 4.17. Graphical representation of the overall level of awareness about LD.

Research question 4

How many types of learning difficulties have been seen in the elementary classroom by teachers?

Table 4.52

Responses of Teachers about Awareness Related to the Type of Learning Difficulties in Elementary Classes (n=200)

Learning Difficulties of the Students	Frequency	Percent (%)
1. Paying no attention in listening to teachers' instructions.	52	26
2. Dyscalculia	13	6.5
3. Dysgraphia	9	4.5
4. Dyslexia	7	3.5
5. Learning processing disorder	7	3.5
6. Nonverbal learning disability	10	5

Learning Difficulties of the Students	Frequency	Percent (%)
7. Visual-motor deficit	10	5
8. Dyspraxia	8	4
9. Memory	14	7
10. ADHD	70	35

Table 4.52 illustrates the replies of elementary school teachers regarding the presence of learning difficulties among elementary students**.** It appears from the table that the existence of students with ADHD is 35%, and 26% students pay less attention to listening to instructions given by teachers. 7% students have issue with memorization and 6.5% students face difficulty in calculations. Moreover, 5% teachers reported the existence of students having Visual-motor Deficit; 4% reported to have students of dyspraxia, and only 3.5% reported the presence of students with dyslexia and learning processing disorder.

Figure 4.18 displays the percentages of various type of LD observed by teachers in their classroom.

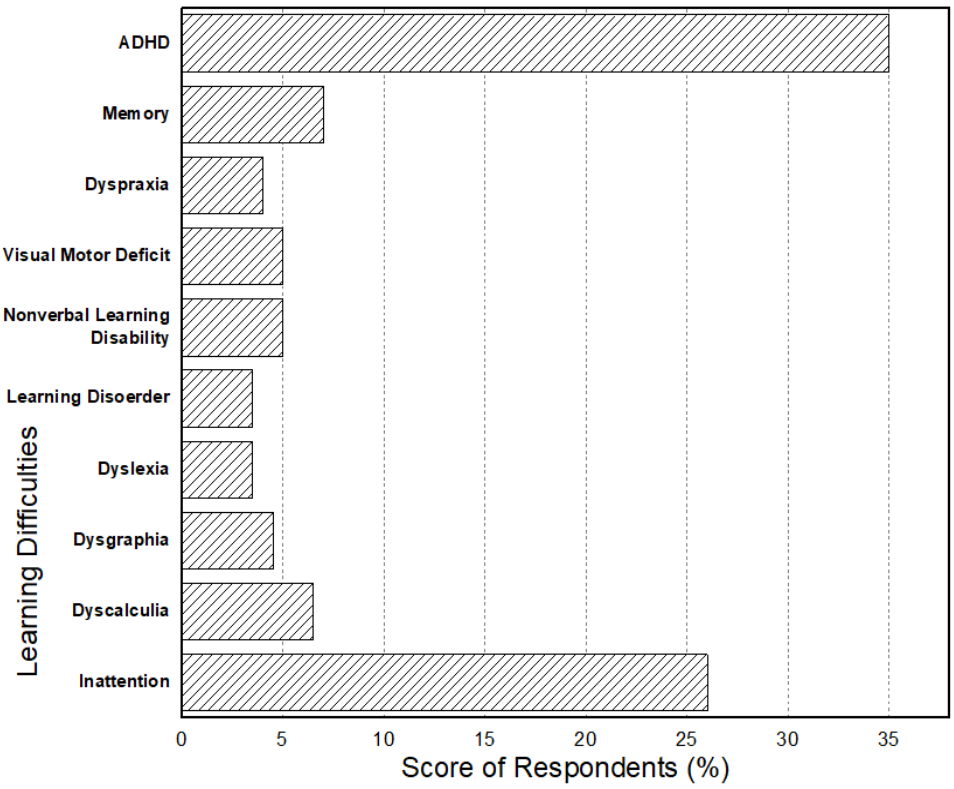

Figure 4.18. Graphical representation of the responses of teachers about awareness related to the type of learning difficulties.

Research question 5

What is the prevalence of students having ADHDs in elementary classes?

Table 4.53

Teachers' Scores about the Prevalence of Students with ADHD in Elementary Classes (n=200)

Statements	Response Categories				
Items	Never %	Rarely %	Some-times %	Often %	Very Often %
In my classroom, there are pupils who:					
Inattentive:					
1. Do not give close attention to details.	0	0	93.5	6.5	0
2. Make careless mistakes in schoolwork or other activities.	0	2	8	85	5
3. Have a problem in keeping attention on tasks or doing activities.	0	1.5	55.5	37,	6
4. Do not seem to listen to when spoken to directly.	0	61	31	7	0
5. Do not follow instructions	0	6.5	56.5	31	6
6. Fail to finish schoolwork, tasks, or duties in the workplace	0	6.5	54.5	39	0
7. Have trouble in organizing activity.	0	0	62.5	37.5	0
8. Do not want to do things that take a lot of mental effort for a long period of time (such as homework or schoolwork).	0	0	85	14	1

Statements	Response Categories				
Items	Never %	Rarely %	Some-times %	Often %	Very Often %
9. Lose things needed for tasks and activities (e.g., pencils, books, school assignments or tools).	0	51	42	6	0
10. Easily distracted.	0	7	45	41	6
11. Forgetful in daily activities.	0	6.5	33.5	53	7
Hyperactive:					
12. Fidgets with hands or feet or squirms in seat.	0	60.5	7.5	32	0
13. Gets up from the seat when remaining in seat is expected.	2.5	36	53	8	.5
14. Run about or climb when and where it is not appropriate (adolescents or adults may feel very restless).	30	51	18	0	0
15. Have trouble playing quietly or enjoying leisure activities quietly.	.5	32	67	0	0
16. Are “on the go” or act as if “driven by a motor”.	7	38.5	49	5.5	0
Impulsive:					
17. Talk excessively.	4.5	41	0	53	1.5
18. Blurt out answers before questions have been finished.	0	42	35	23	0
19. Have trouble waiting for one’s turn.	0	7.5	56	36.5	0
20. Interrupt or interfere with others’ conversation.	0	8	58	29.5	4.5

Table 4.53 shows the responses of teachers against the 20 statements of the questionnaire related to the ADHD prevalence among students in elementary classes.

First 11 items in the questionnaire deal with the inattentive behaviour; from 12 to 17 items in the questionnaire deal with hyperactive behaviour, and from 18 to 20 items in the questionnaire deal with impulsive behaviour. Each statement in this questionnaire shows the level of teachers' response occurrence about ADHD among their students in their classrooms.

From the responses of teachers mentioned in the table above, 93.5% teachers believe that most of the students are not paying close attention to particulars in their classes. 85% teachers admitted that often students make careless mistakes in their classes. From the responses, it is also evident that 55.5% teachers consider that most of the students are not keeping attention on assigned jobs or play activities. It is mentioned in the table that 31% students are inattentive in listening while talking with the teacher. 56.5% teachers respond that often students do not follow instructions. 54.5% teachers admitted that most of the students fail to finish class work, tasks or responsibilities in the workplace.

From the responses of teachers mentioned in this table above, it can be seen that 62.5% teachers responded that often students have trouble in organizing activities in their classes. 85% teachers admitted that often students do not want to participate in tasks that take extra mental effort over an extented period of time; 51% teachers believe that most of the students rarely have careless behaviour and lose things needed to complete task and activities, and 45% teachers admitted that students often get easily distracted.

From the responses of teachers, it was found that 33.5% teachers consider that students sometimes are forgetful in daily activities, and 51% teachers have the view that most of the students have careless behaviour and lose things needed to complete task and activities in their classes. 60.5% teachers believe that most of the students rarely do fiddling with feet or hands or wriggle in their seats. 53% teachers responded that students often have trouble in sitting on the seat when they are supposed to be seated.

It is also illustrated in the table that 51% teachers admitted that students rarely run about in the class when or where it is not appropriate; 67% teachers believe that most of the students rarely have trouble playing quietly or enjoying leisure activities. Moreover, 49% teachers believe that sometimes some students run or act as if they were operated by the motor. 53% teachers believe that most of the students rarely talk

excessively in the class; 42% teachers believe that rarely have students burst out answers before questions have been finished.

Table 4.53 also exposed that 56% teachers responded that sometimes students have trouble in waiting for their turn, and 58% teachers responded that sometimes students interrupt or interfere into others' conversation. From the responses of teachers, it was clear that there is a great prevalence of ADHD among the elementary level classroom students.

Research question 6

What kind of behavioural problems are displayed by students who have ADHD at the elementary level classes?

Table 4.54

Responses of Teachers related to Awareness about the Observed Behavioural Characteristics of the Students with ADHD

Characteristics	Frequency	Percent (%)
1. Are disorganized	23	11.5
2. Lack focus	44	22
3. Get up frequently to walk or run around	3	1.5
4. Have trouble playing quietly or doing hobbies quietly	5	2.5
5. Talk excessively	13	6.5
6. Are Impatient	60	30
7. Having a hard time waiting to talk or react	8	4
8. Have a hard time waiting for their turn	26	13
9. Start conversations at inappropriate times	18	9

Explanation regarding the percentage of responses of teachers related to awareness about the behavioural characteristics of the students having ADHD observed in elementary classrooms is given in Table 4.54.

It is clear from the table that out of 200 responses of teachers, 30 % teachers have observed impatience among students in their classes. 22 % teachers have observed the lack of focus among students in the classes, and 13 % teachers have observed that students do not wait for their turn. 11.5 % teachers faced students who have difficulty of being disorganized; 9 percent teachers have observed that students start conversation

at inappropriate time in the class. Moreover, 6.5 % teachers have observed excessive talking among students when they are supposed to sit silently in the classes. 4 % teachers observed reactive attitude of students in the class; 2.5 % teachers observed noisy attitude of the students when staying calm was essential for them, and 1.5 % teachers observed students recurrently running and rambling in the class during they were delivering the lecture.

Research question 7

What kinds of challenges are being faced by teachers during teaching elementary students?

Table 4.55

Challenges Being Faced by Teacher during Teaching elementary Students

Source	Frequency	Percent (%)
Discipline	86	43%
Lesson Planning	26	13%
Size of class	44	22%
Time Management	18	9%
Assistance or Support	26	13%

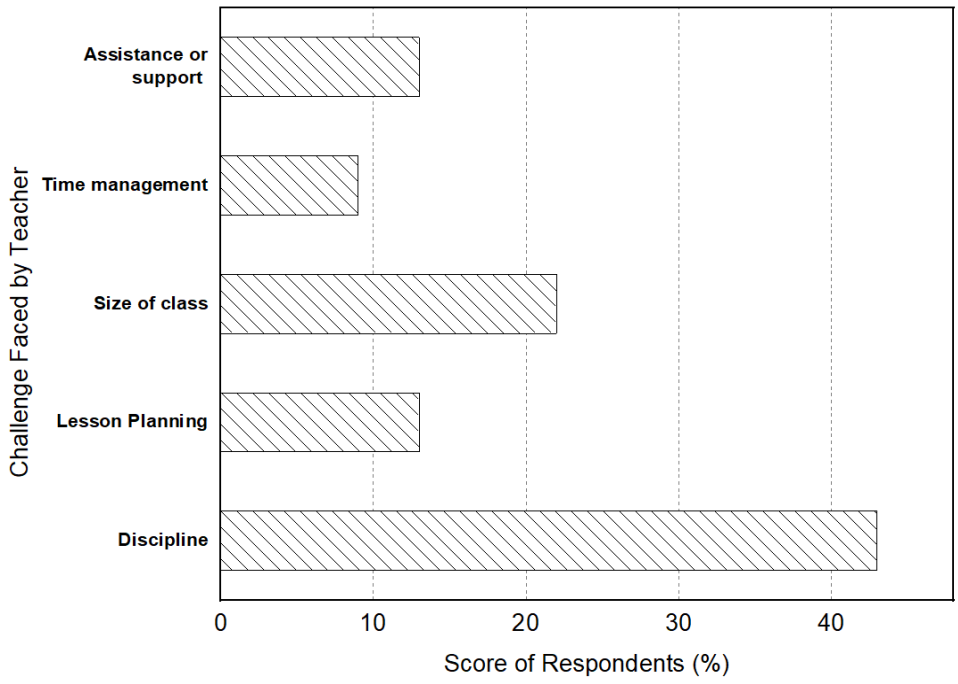

Figure 4.19. Graphical Representation of challenges being faced by teachers.

Table 4.55 shows the percentages of teachers' responses on the item of challenges faced by them at elementary. In the table above, it is clearly observed that 43 % teachers had challenges of discipline, and 22% had the problem of class size. There are also some challenges of lesson planning such as 13%, assistance or support issues such as 13% and 9%-time management issues.

The graph above illustrates that generally teachers face the challenge of discipline in their classrooms.

Research question 8

What kinds of interventions are being used by teachers to handle ADHD at elementary classroom?

Table 4.56

Interventions being used by teachers to handle *ADHD Students at Elementary level*

Intervention being used	Frequency	Percent (%)
Capture Students' Attention before Giving Directions	48	24%
Class Participation: Keep Students Guessing	30	15%
Employ Proximity Control	18	9%
Give Clear Directions	20	10%
Give Opportunities for Choice	32	16%
Provide a Quiet Work Area	6	3%
Provide Attention Breaks	29	14.5%
Reduce Length of Assignments	8	4%
Select activities (that require active student responding)	9	4.5%

Table 4.56 shows the percentages of teachers' responses on their way to managing students with ADHD. From this table, it can been seen that 24% percent teachers are captured by students' attention before giving instruction. 16% give choice to studnets while 15% try to invovle studnets in classroom activities; 14.5 % provide attention break, while 10% teachers give clear directions and 9% employ *proximity control*. 4.5 % choose various activities; 4 % reduce the length of assignment, and 3 percent provide place for peaceful working.

Phase-II of the Study

The main purpose of this study was to design interventions for the quality handling of the ADHD students at elementary level. Before going to develop interventions, descriptive research methodology was used to unravel the phenomena of ADHD at elementary level classrooms.

Descriptive research was conducted to achieve the following objectives.

1. To explore the extent of physical facilities available at elementary schools.
2. To explore teachers' awareness about learning difficulties at elementary level classrooms.
3. To explore the prevalence and behavioural problems of ADHD students at elementary level.
4. To measure teachers' demographic variations such as age, gender, qualification, sector, experience, grade and strength of the class in relation with the prevalence of ADHD students in their classes.
5. To measure the effect of students' demographic variations such as gender, grade, sector, fathers' qualification, fathers' profession, mothers' qualification, mothers' profession, monthly income of family and number of brothers and sisters in determining the extent of ADHD.
6. To find out various challenges that are being faced by teachers in managing ADHD students at elementary level.
7. To develop interventions for higher academic achievement and behavioural management of elementary level ADHD students.
8. To measure the effects of teaching interventions on academic performance and behavioural management of ADHD students.

In order to attain the objectives mentioned above, baseline information about teachers' awareness about ADHD, its prevalence among students at elementary classes, a log of existing interventions used by teachers to handle students' disruptive behaviour, etc., were investigated. In addition to this, ADHD students' self-awareness about their behaviour was also explored to learn the facets of several ADHD behaviours. On the basis of the findings, it was found out that John's theory of interventions works well according to our cultural context. The proposed interventions have three major domains for the academic success and behavioural management of ADHD students. These interventions are basically designed for teachers which include instructional

interventions, physical classroom management interventions and behavioural interventions. Underlying assumptions is that through the implementations of above mentioned interventions, effective handling of ADHD students is possible

Detail descriptions of interventions are enlisted in Table 4.57.

Table 4.57

Proposed Interventions for Elementary School Teachers to Manage ADHD Student in Classes

Major type of interventions for Teachers	Detail of interventions
Instructional interventions	1. Provide instructions by using possible tools and technology with visual aids to ADHD students 2. List detailed stepwise instructions on board 3. Use specific, brief and easy words for instructions 4. Encourage ADHD students to repeat the stated instructions in their own words 5. Make frequent direct eye contacts with ADHD students during delivering instructions 6. Structure tasks into small sub-tasks for ADHD students
Behavioural interventions	1. Have frequent effective verbal praise for the ADHD students on showing positive behaviour 2. Overlook the specific behavioural disruptive form the ADHD students exhibit 3. Minimize the potential choices of distraction from the classrooms 4. Give ADHD students reward after every successful completion of task 5. Engage ADHD students in constructive physical activities 6. Use personal visual signals (gentle hand tap, color cards, head gestures) on undesirable behaviour of ADHD student
Physical classroom management interventions	1. Change ADHD students seating arrangement frequently (if desired). 2. Ask ADHD students to be seated at front/ near the class teacher. 3. Ask ADHD students to be seated along outstanding classmates. 4. Do not let students with ADHD to be seated near windows and doors. 5. Create conducive classroom conditions in terms of physical facilities. 6. Provide sound proof classrooms to minimize distractions.

For testing the effectiveness of these interventions, two separate experiments were conducted -- one for teachers and another for ADHD students.

4.7 Simple Experimental Design (Causal-Comparative)

The findings of phase I revealed that teachers who work at the elementary school have less or insufficient knowledge about ADHD students. At present, they are not using any effective method through which they can manage academic and behavioural problems of ADHD students effectively. The major goal of this training was to impart knowledge and hand on experience for the better academic performance and behavioural management of ADHD students at elementary level. Training would enhance teachers' skills to manage the behavior of ADHD students in effective manner in classrooms situation. Therefore, developed interventions were chosen to test through simple pre-test post-test experimental design. The simple experiment pretest post-test designed was used to provide training to elementary teachers. Before imparting training to teachers, their knowledge about ADHD students was checked through self-report questionnaire. The self-report questionnaire for the teachers was based 40 items which deal with various aspects of the management of students with ADHD.

Hypothesis 17

There is no significant difference in the pre-training and post-training scores of elementary teachers (about knowledge of teaching interventions of handling ADHD children).

Independent Variable

Teachers' training about instructional, behavioural and physical classroom management interventions for handling students with ADHD

Dependent Variable

Effective handling of ADHD students for academic achievement and behavioural management

Sample

A stratified random sample of 40 teachers was collected from 6 schools -- 3 from the private sector and 3 from the public sector.

Duration of Training

Training of 5 days was conducted to train 40 teachers, who were engaged in teaching of elementary classes, from these six schools.

Procedure

The heads of 6 elementary schools (three from the public sector and three from the private schools) were contacted and briefed about the purpose of experimentation. The importance of the management of ADHD behaviour for their academic success was discussed with them. They were also requested to nominate maximum number of teachers for training of teaching interventions. The heads nominated teachers (the list of schools is attached) on the condition that training should be stared during summer vacations. For getting permission from heads and consent from teachers, 40 teachers were shortlisted. Training started in the month of July for this purpose, and the heads were intimated and verbal permission was taken. The schools' heads further nominated 40 different teachers and those were engaged in five days training for four hours daily sessions. Before the training, pre-test was conducted through the 40 item self-report questionnaire for teachers (based on knowledge of ADHD and teaching interventions for ADHD students). This self-reported questionnaire was based on Diagnostic and Statistical Manual of Mental Disorders and Conner's teachers.

The training program was mainly based on lectures and printed materials. Reading material about learning difficulty of ADHD was also provided to the participants. The first days of training was introductory in nature and after that test administration formal sessions started. Orientation sessions about practical training were divided into five days program. The agenda of first day was to impart lectures on the background information about the concept of ADHD students (to create awareness among teachers about learning and learning difficulties of ADHD. The second day was scheduled to impart knowledge of diagnostic tools, i.e., Conner's teacher and parents rating scales, and hands on experience of testing and scoring was provided to participants. During the third day, knowledge of various types of teaching methods was provided to teachers that could be applied for quality handling of ADHD students. During 4^{th} and day 5^{th} days, knowledge of instructional interventions, behavioural management and physical classroom management was provided to the participants. The training was provided in a group.

4.7.1.1 Interventions for teachers to deal with ADHD students

One of the major goals of this research was to propose effective interventions for elementary school teachers in Pakistan to manage ADHD students. After conducting the research, some teaching interventions have been proposed to train teachers at elementary classrooms. The different steps according to which teachers can be trained to deal with the learning difficulties of ADHD students are as follows: (see Figure 21).

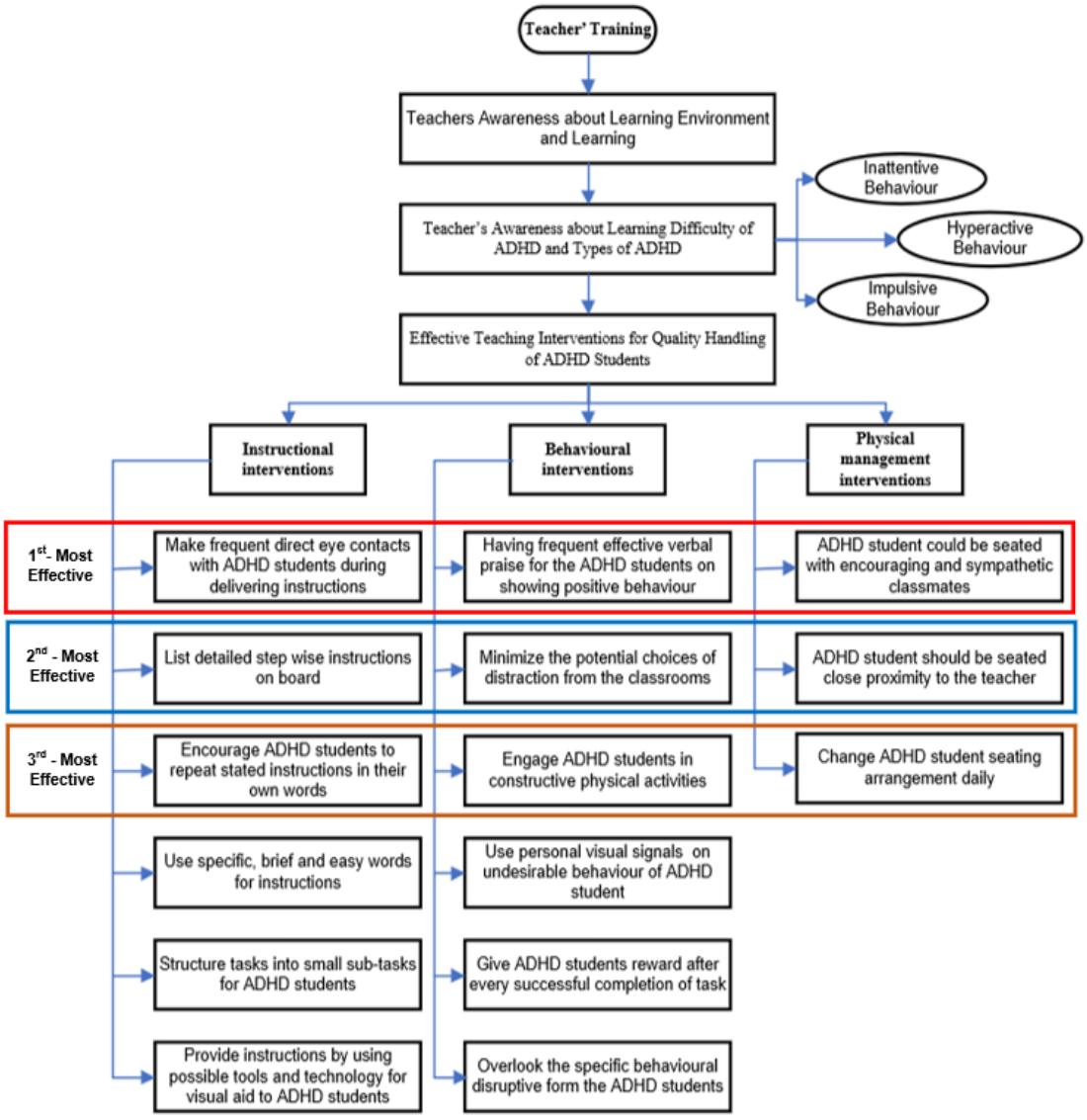

Figure 4.20. Interventions for elementary teachers to deal with ADHD students

This figure shows that there is, at first, a need to give teachers awareness about learning process in detail, such as what learning styles students use in classrooms. The knowledge of different learning styles of the students is critical for their academic success. As elementary classroom teachers, it is significant for them to comprehend these differences in order to enhance students' learning potential.

It is just as important for all stakeholders, i.e. parents and teachers to follow the same procedures in coordination and cooperation keeping the needs of ADHD students. During the teachers' training, give aware to teachers about different learning styles. When students get involved in the process of learning, they face some hurdles during that process of learning. These hurdles are basically learning difficulties. After reviewing several research studies, it is found that ADHD is the most important learning difficulty that many elementary students face during the learning process, and most of the teachers are unaware of it.

Following is a brief description of training for teachers to effectively manage elementary school students who have ADHD.

4.7.1.2 Teachers' awareness of learning difficulties

The teacher has a vital part to play in any education system. The teacher has an immense influence on the mental, physical and intellectual inclinations of students. So, teachers' awareness of students' learning is very important. It is crucial for the general education teacher to recognize the learning difficulties (LD) among his or her students. They need a better understanding of all those problems which students encounter in class. These problems can vary from student to student. Since learning difficulties are very complex phenomena, therefore, it is a prime responsibility of the teacher to overcome all learning difficulties of students which create hindrance in smooth learning. It is pertinent for teachers to know about all the techniques through which they can improve the learning of their students. Proper training and coaching are needed for elementary general education teachers. These learning difficulties may be revealed in the form of problems in listening, speaking, writing, reading and analytical skills, etc. The lack of understanding of these LD in academic activities will foretell the academic failure of many students. It is evident from the study that there is a significant gap in the primary school teachers' awareness about the levels of LD among students. For many primary school teachers, it is completely a new concept. They are expert in their respective subjects but are not aware of the LD among students. Besides, during their academic education, they have not done any specialized course about LD. Moreover, one of the main reasons for deficiency in awareness about LD could be that they don't have any dedicated workshop or training about LD in their whole professional career. Therefore, they don't know how to identify LD problems among elementary classroom students. Some teachers who can find this problem do not know which procedure they should adopt to positively address the LD.

No doubt, the general education teachers' insight into the sources, reasons and significances of the LD have a robust effect on the outcome of positively engaging the ADHD students in the elementary classroom. It is, therefore, recommended that according to the above-proposed model, primary school teachers' level of awareness about LD should be enhanced gradually. Primary school teachers should have periodically dedicated workshops and short courses about LD among students. By this practice, the teachers' awareness level could be increased about LD and their point of view could be transformed into a more scientific point of view.

4.7.1.3 Teachers' awareness of ADHD

According to the American Psychiatric Association, ADHD could be defined as a constant repetition of inattentiveness, hyperactivity and spontaneity. It could affect the development and functioning of students, and it often becomes more observable during the period when the child joins the school. The social, academic and behavioral problems faced by the child could be the direct consequence of ADHD. Most importantly ADHD has a very serious learning implication for the child. Students having ADHD has low grades as compared to the students who do not have any symptom of ADHD. It could be visible in low test grades. Elementary school teachers could be the first persons who can identify the student having ADHD. Consequently, it is very significant that teachers should have awareness specifically about ADHD.

It is evident that the primary school teachers' awareness of ADHD has a direct effect on the educational and behavioral performance of students. The detection rate of a student suffering from ADHD is enhanced with the teacher has a high level of prior awareness and knowledge ADHD. Afterwards, these students could be provided with educational and behavioral support. There are numerous international academic studies that have explored the impact of teachers' pre-service and in-service awareness about learning the difficulty of ADHD. it also has an immense impact on classroom management. Thus, teachers must be given proper awareness about all learning problems students can face inside the classroom. The awareness level of teachers should be increased by short courses or in-service training. Hence in the second step of the model, the teachers of elementary school should be trained about ADHD.

4.7.1.4 Types of ADHD

ADHD is well established, and its main symptoms are a persistent inattentive, hyperactive and impulsive behaviour. The constant repetition of inattention, hyperactivity and impulsivity are also considered as subtypes of ADHD.

This model proposes that teachers should know about different ADHD symptoms. Most teachers are not aware of behaviour which involves ADHD. Therefore, they do not pay heed to different behavioral issues of students in the class. Even these problems vary from student to student depending on different factors such as age, culture, gender, etc. Teachers should know about the symptoms of ADHD and its division in groups. Students may have inattention, hyperactivity and impulsivity. Some students have highly inattentive behaviour, whereas other students exhibit hyperactive-impulsivity. However, those who exhibit both, they may have severe difficulty to behave well in the classroom.

Inattentive type:

The inattentive type of ADHD is also known as Attention Deficit Disorder (ADD). Inattentive behaviour of a child can be seen when he/ she is distracted from his/her task, forgets the entire things which need to be remembered, always does the disorganized work, has a lack of concentration on work, and shows carelessness. The child also has little focus on the given task.

A teacher without having proper awareness of these problems cannot mould the behaviour of the student. This model proposes that giving awareness to teachers about the inattentive disorder and how it can be diagnosed and the teacher can control the inattentive behaviour of a child.

After reviewing several studies, several symptoms have been highlighted on the basis of which a teacher can diagnose the child's inattentive behaviour. Keeping in mind, this type of behaviour must have at least six symptoms.

Inattentive students are mostly observed as a daydreamer, frequently change a task without finishing the previous one, are easily distracted from the important task and have less attention towards details that are necessary to notice. Moreover, they always feel bored during performing the task and make careless mistakes in the given work; they lack self-organization and management, and easily forget all the given instructions.

If a teacher discovers a child with this type of behaviour in his/ her classroom, it is the time to treat this child with several interventions to keep the child on track. These interventions are as follows

Make a to-do list, small size projects, give clear and time to time instructions, and get into a routine, cut down the things which distract students, and give rewards on the completion of the task.

Hyperactiv-ImpulsiveType:

If the teacher observes that the child during class is not sitting still or every time is in the habit of movement, the child is having a spontaneous energy spark, and does not know when to talk and interrupts during talking, the teacher should not wait for the turn, and use intervention. Further, the child starts to run from desk to desk, behaves like driven by an electric motor, repetitively walks and jumps, lacks patience, is unable to wait for his/ her turn, comments on things abruptly, then it must be clear to the teacher that these types of students are hyperactive-impulsive.

4.7.1.5 Teachers' interventions for ADHD students

Once the teacher decides to use interventions, the first and foremost question which may come to the mind is the purpose of using interventions, intervention procedure and which intervention works properly as per requirements. Teachers' support is very important for ADHD students. They need to know behavioral issues most likely faced by ADHD students in classroom settings, should know different causes for that out of normal behaviour and should recommend how to manage this problem.

Students with ADHD face both academic and social problems, and it is tough to handle them in the general classroom. For overcoming the problem associated with ADHD, teachers need to work with these students for improving their behaviour and implementing strategies which are needed. Students with ADHD can be a real challenge for the elementary classroom teacher. Interventions on the part of the teacher are a key to improve those learning difficulties.

However, Teacher having knowledge and skill about ADHD can use the following strategies to successfully engage and encourage students with ADHD.

Equip teachers with behavioral interventions which can be the intervention of physical classroom accommodations / optimal classroom arrangements for a student with ADHD and instructional intervention / instructional tools to adjust the learning environment.

The behavioral intervention includes several strategies:

Praise can be important tool to motivate students towards the desired positive classroom behaviour. Genuine praise in different manners and different contexts can support to build the self-concept of ADHD. The use of praise rather than punishment can bring positive changes in the behaviour of students with ADHDs. Another effective behavioral intervention is ignoring inappropriate behaviour. Remove the objects from

the learning area that distract the attention of students during the process of learning. Give break to students to leave the class area for a while for the sake of change in repetitiveness. Teachers can engage students in constructive classroom activities. In this way, their energy can be utilized in an effective way. On undesired behaviour, teachers can pass visual cues, colour cards, hand gestures and focus. Teachers' understanding and problem-solving skills can support the handling of the behaviour.

The intervention of physical classroom accommodations / classroom seating arrangements for students with ADHD include several strategies:

Since the environment has a tremendous impact on the student, so environment intervention could be one of the best strategies. The classroom seating arrangement is very important. Students having ADHD should be seated near or close to the teacher. Moreover, they should also be seated away from high distraction areas, e.g. doors or windows. They should also be seated away from talkative or dominant classmates. Furthermore, they could be seated with encouraging and supporting classmates who can enhance cooperative learning. Ask that supporting student to help organize the classwork and assignment during class.

The instructional intervention / instructional tools to modify the learning environment include:

Another important intervention is instructional intervention by elementary classroom teachers. First and foremost is that they should use a possible visual aid to provide instructions. Teachers ought to list the instructions and directions on the whiteboard and also brief the same verbally to the ADHD students. The teachers can use short and simplified words in their instructions. Teachers can repeat instructions for the ADHDs and can also ask students about their understanding after imparting instructions. Moreover, by maintaining close physical proximity with students and maintaining eye contact can enhance the effectiveness of instructions. Teachers can also use a positive form of instructions rather than negative form just like replacing the instruction of "don't talk" to "please listen carefully". Positive consistent reinforcement by praising them for minor good deed and improvement in their behaviour would be very effective if used precisely. Usually, the ADHD student exhibits uneven performance during their study. The teacher should be aware of this phenomenon and deal with it wisely by encouragement and appreciation.

Another important intervention can be used while taking test or examination. Teachers can provide extra time to complete regular classroom test. Teachers can guide

in understanding of test items to ADHD students. Format of the test should be from easy to difficult so the student should get confidence to attempt the test. Encourage them to reply in any format from pictures, diagrams or mapping, etc. which they consider easy for them. Score the content rather than handwriting.

Besides, the teacher can break the assignment into small chunks and ask the student to attempt that chunk in a flexible time frame. It would certainly help the following students to accomplish their task quickly and efficiently. Students with ADHD face difficulty in organizing things. So, the teacher could help them by using daily, weekly and monthly planners as well as calendars. Furthermore, the vital task of the teacher could be the classroom behavioral intervention. ADHD students' interpersonal skills are usually very weak. Therefore, teachers' support is needed in this situation. The teacher should give some extra time to students in elementary classes. The teacher should not expect appropriate behaviour from them; it should be rather cultivated and cultured through successive positive reinforcements. The teacher should provide close supervision during leisure time such as recess or lecture break. Also, keep close contact with parents of ADHD students and work in a team with the common goal of positively grooming them in academic as well as interpersonal skills.

Pretest was conducted before training. The questionnaire of 40 items based on content related with knowledge of various aspects of ADHD students was asked. The participants were requested to fill the questionnaire before formal training. After five days of extensive training, the same questionnaire was re-administered on the training participants to assess improvement in knowledge and understanding about the concept of ADHD and teaching interventions. For statistical analysis, mean, SD and t-test were applied on the scores of 40 items questionnaire.

Table 4.58

Comparison of Per-Training and Post-Training Teachers' Knowledge about ADHD On the Questionnaire (n=40)

Type of group	Mean	SD	t	P-value
Pre-Training	30.36	5.89		
Post-Training	47.8	4.17	6.1	.000

P< 0.05

The table above shows that value of t is 5.6 on teachers before and after training scores. Teachers' pre and post-training scores yielded statistically significant difference.

Hypothesis 18

There was no significant difference in the score of ADHD students of experimental group and control group on classroom achievement test.

Hypothesis 19

There was no significant difference in the score of ADHD students of experimental group and control group on behavioural rating scale.

4.8 Implementation of teaching Interventions to students with ADHD

4.8.1 Experimental Study for the Testing of Effective Interventions for Academic Achievement and Behavioural Management of ADHD

4.8.1.1 Preview

Teachers' ability of classroom management has a great impact on behaviour and achievement of students. Some teachers have deficiency of proper knowledge about individual difference of learning due to which they are helpless to manage the disruptive behaviour of ADHD. Therefore, ADHD students are facing problems in the acquisition of learning due to unpreparedness of teachers. Based on the conclusions of research in hand, effective teaching interventions were devised which need to be tested experimentally. So their effectiveness can be determined empirically in the classroom setting.

4.8.1.2 Details of experimental study are as under:

Simple pre-test post-test experimental and control group design was applied to check the effectiveness of interventions.

Independent Variables

Effective teaching interventions for handling ADHD in classroom setting, the detail is as under:

Instructional Management

1 Provide instructions by using possible tools and technology for a visual aid to ADHD students.
2 List detailed stepwise instructions on board.
3 Use specific, brief and easy words for instructions.
4 Encourage ADHD students to repeat stated instructions in their own words.
5 Make frequent direct eye contacts with ADHD students during delivering instructions.

6 Structure tasks into small sub-tasks for ADHD students.

Behavioral Management

1. Have frequent effective verbal praise for ADHD students on showing positive behaviour.
2. Overlook the specific behavioural disruptive form of ADHD students.
3. Minimize the potential choices of distraction from the classrooms.
4. Give ADHD students reward after every successful completion of the task.
5. Engage ADHD students in constructive physical activities.
6. Use personal visual signals (gentle hand tap, color cards, head gestures) on undesirable behaviour of ADHD student.

Physical Management

1 Change ADHD student seating arrangement daily
2 ADHD students should be seated in close proximity to the teacher
3 ADHD student could be seated with encouraging and sympathetic classmates
4 Students with ADHD may not be seated near windows and doors.
5 Classrooms conditions may also be conducive in terms of physical facilities.
6 Sound proof classroom can minimize disturbances

Dependent Variables

1. Better Academic Achievement.
2. Manage disrupting behaviour of ADHDs, including improved attention span and minimizing distracted impulsive behaviour.

Participants

A purposive sample of 30 students was collected from class 8^{th}. For the sample selection, three public sector schools for boys located at Rawalpindi were selected. Teacher observation was used to shortlist students who showed disruptive behaviour. Teachers nominated 47 students who were showing disruptive behaviour in the classroom. After initial labeling, diagnostic tool was applied to screen out students during which 36 students were identified as ADHD. Out of them, 5 were not willing to participate in the study and one student was sick; therefore, only 30 participants were

selected for the study after initial screening. The venue of teaching was selected in boys' elementary school with the permission of headmaster. An experiment was designed for three-month duration. Before conducting experimentation, pretesting was conducted on 18 item students' behavioural scale. Behavioural Scale was developed by using DSM-V checklist. All 30 students were tested on behavioural scale; behavioural scale was also administered on participants after experimentation along with achievement test. The score behaviour of the students was calculated through SPSS to observe differences. No significant difference was seen in the scores of students.

Afterwards, these 30 ADHD students were randomly placed in two groups termed as experimental group and control group.

Control Group

From a group of 30 ADHD students, 15 students were randomly placed in the control group. The pretest test was administered to gauge the disruptive behaviour of the students. The result of the retesting was recorded for statistical analysis. For the students of control group classroom setting, physical facilities were the same as in the classroom of students placed in the experimental group.

The teacher who was already working in that school was requested to participate in the study. After his willingness, he was briefed about the purposes of the study. He was requested to teach English to the students of the control group with the conventional method (it was already prevailing in the public sectors schools) for three months.

Experimental Group

Out of an initial pool of 30 students, 15 were randomly assigned to experimental group (already pretested and gauged their disruptive behaviour).

Experimenter Training

For the teaching of an experimental group, the teacher, who is teaching English to the 8^{th} class students, was requested to take part in this study after his consent. The experimenter was briefed about the purpose of the study. Both of them had M. Ed degree in education with 10-year teaching experience.

The teacher, who was shortlisted for experimental group, was provided one-week training about three major teaching interventions for ADHD students. A hands-on training was imparted about the instructional interventions, behavioural management interventions and physical classroom management interventions. After training, the experimenter became ready to impart teaching of English through interventions to the students of experimental group.

Procedure

The duration of the experiment was three months from 5- 9-2018 to 5-12-2018. During this period, 30 ADHD participants (student of 8^{th} class were taught the subject of English to both groups, i.e., control group and experimental group separately. The participants of the control group were taught English for three months through traditional / conventional methods of teaching, while the participants of Experimental group were taught English by using teaching interventions which comprised instructional interventions, behavioural management interventions and physical classroom management interventions.

After the completion of three months, the test was taken from students of both groups. In addition to this, students of both the groups were also tested through behavioural scale (the same test and behavioural scale were used for both the groups).

Statistical analysis was performed to calculate the difference between the scores of experimental and control group participants.

Table 4.59

Comparison of experimental group and Control Group Respondents' Scores on Achievement Test (n=30)

Type of group	Mean	SD	t	P-value
Control Group	161.13	7.89		
Experimental Group	840.8	6.23	24.6	.000

P< 0.05

The table above describes the mean, SD and t value of the achievement test scores of the students of experimental and control groups. From this table, it appears that a significant difference exists in the scores of students who were taught through traditional methods in comparison with those who were taught through interventions.

Table 4.60

Comparison of experimental group and Control Group Respondents' Scores on 18 item Behavioral scale (After the implementation of interventions) (n=30)

Type of group	Mean	SD	t	P-value
Control Group	53.7	3.89		
Experimental Group	36.8	3.23	4.6	.002

$P < 0.05$

The table above shows a significant difference in the scores on 18 item behavioural scale of students' belonging to experimental and control groups (post-interventions). Results are statistically significant at 0.02 level of significance.

Conclusion

Pre-intervention and post-interventions tests were conducted on the participants of experimental and control groups. Students' academic performance was measured through objective and subjective achievement tests. Paper A of English contains 48 Marks, whereas paper B contains 52 Marks. Overall in both groups, ADHD students were participants but after intensive teaching of 3 months (one hour a day, 4 days a week) the performance of the participants of experimental groups was markedly better than the participants who were taught through the traditional method.

For the measurement of behavioural management of ADHD students, differences in the pre and post-teaching (i.e., through interventions) ratings were taken on behavioural rating scale. A significant difference was noted in the behaviour of the participants of experimental group.

Hence, it can be concluded that the academic performance and behavioural management of ADHD students is possible if they are taught through instructional, behavioural and physical classroom management interventions simultaneously.

Summary

Chapter 4 deals with the presentation of result in a tabular form. This chapter deals with results of the descriptive research, along with the experimentation procedure, and interpretations are also presented. The results have been portrayed through tables and graphs for better understanding of the readers. The next chapter (i.e., chapter 5) deals with discussion, summary of the findings, and conclusions of the present study.

CHAPTER-5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 Summary

Today teachers are facing challenges in fulfilling their academic responsibilities efficiently due to the existence of students who are showing undesired behaviour in classrooms. Most of them are without visible disabilities, but still are unable to learn due to ADHD. It is a disorder due to which students seem to be hyperactive, impulsive, disorganized and have difficulties in following classroom norms. For labeling of ADHD, a diagnosis through test is necessary.

ADHD is well researched area in the Western context but new in the Pakistani context. If diagnosed and teachers are aware of the mechanisms to handle such students, positive changes can be brought in their behaviour. Elementary level teaching is challenging for the teachers due to the developmental changes that occur in the behaviour of students. Teachers play a central role in imparting education, and existence of such students in the class can multiple the role of well-trained teachers. No doubt, such students are a source of disturbance for the rest of class, resultantly facing humiliation. Many of them due to repeated failure may quit education and may increase rate of school dropout. Blaming or labeling is not a solution to this problem. The system of education may develop educators who are well aware and well trained to manage the behaviour of these students. These students are having learning difficulties due to which they do not go fine with others.

In our cultural context, teachers who are working public sector schools have very less information about learning difficulty/ ADHD due to which they are unable to take the challenge of their educational and behavioural modifications. Instead of doing something in a positive direction, they are complaining about them to parents and administration. They want to exclude these types of students. Therefore, this research was planned to fill the gap. In this study, effective teaching interventions for the academic achievement and behavioural management of students with ADHD was studied at elementary level classes.

Major objectives were as under:

1. To explore the extent of physical facilities at elementary schools.

2. To explore teachers' awareness about learning difficulties of elementary level students.
3. To explore the prevalence and behavioural problems of ADHD students at elementary level.
4. To measure teachers' demographic variations of age, gender, qualification, sector, experience, grade and strength of the class in relation to the prevalence of ADHD students in their classes.
5. To measure the effect of students' demographic variations of gender, grade, sector, fathers' qualification, fathers' profession, mothers' qualification, mothers' profession, monthly income of family and number of brothers and sisters in determining the extent of ADHD.
6. To find out various challenges that are being faced by teachers in managing ADHD students at elementary level.
7. To develop interventions for higher academic achievement and behavioural management of elementary level ADHD students.
8. To measure the effects of teaching interventions on academic performance and behavioural management of ADHD students.

The study was conducted in two phases, i.e., descriptive and experimental. Phase I was descriptive in which exploration of the phenomenon was made in the light of teachers' awareness about the concept of ADHD, its prevalence and various challenges faced by teachers in managing ADHD students at elementary level. Phase II was experimental in nature which was designed to measure the effects of teaching interventions on academic performance and behavioural management of ADHD students. The population of the study included elementary level teachers and students. The study was delimited to elementary level schools of Rawalpindi only.

For data collection, four research questionnaires were developed through standard procedure. The source of information was literature reviewed for the development of research questionnaires, in addition to this Conner's behaviour rating scale, DSM-V were extensively reviewed to understand the singularities. After reviewing all sources, teachers' interviews statements for four questionnaires were developed.

Details are as under:

Three questionnaires were used to collect the data from teachers.

1. A questionnaire for teachers' awareness about ADHD students.
2. A questionnaire for teachers 'awareness about the ADHD prevalence among students having problem in elementary level classrooms
3. A questionnaire related to interventions used by teachers to manage students having ADHDs and issues in general elementary level Classrooms.

One questionnaire was used to collect data from students having ADHDs.

1. A self-Awareness questionnaire for students about the extent of their ADHD Behaviour in Classroom.

One separate demographic sheet was developed to collect data from elementary school teachers' demographic information which contained 8 items. Another separate demographic sheet was used to collect elementary school students' demographic information which contained 9 items.

Questionnaires were finalized in piloting testing; items analysis, reliability and validity of research questionnaires were established. Psychometric properties of the research questionnaires were determined in pilot testing, and it was carried out on 50 students and 50 teachers of public-sector and private-sector elementary schools of Rawalpindi. The validity and reliability of the research instrument for the current research were ascertained by empirical analysis. All research tools possessed enough reliability; therefore, after that for the attainment of objectives and the verification of hypotheses, data were collected from 200 teachers and 300 students. The data from teachers were collected through stratified random sampling technique, whereas the data from students were collected through purposive sampling technique. The collected data were analyzed through Mean, Standard Deviation, t-test and Analysis of variance (ANOVA) through SPSS. Results revealed that most teachers have diminutive knowledge of ADHD. A significant difference was found in the prevalence of ADHD among the private and public sector schools. Based on the findings and theory, teaching interventions were developed which include instructional, behavioural and physical classroom management interventions for better academic performance and behavioural management of ADHD students. These interventions were tested through 2 simple experiments on 40 teachers and 30 students respectively. Afterwards, 40 elementary school teachers were trained in pre-test post-test simple experimental study. A training was imparted about the various interventions for academic success and behavioural management of ADHD.

The proposed interventions were tested in experimentation on 30 students through the design of control group and experimental group. A significant difference was found in the academic performance of students of experimental and control group on achievement test when it was taught through interventions. Hence, if proper awareness and training are provided to elementary level teachers, it will build their capacity of handling ADHD students which will eventually be able to meet the challenges of life such as academic purists, behavioural problems, etc. in effective manners.

In this research, several null hypotheses were formulated to attain the research objectives. Hypotheses were formulated to check the teachers' awareness about ADHD students and the prevalence of ADHD students in elementary classrooms. Students' extent of ADHD behavior and their self-awareness were also explored through null hypotheses. In additions to this, research questions were also formulated to get the real picture of the phenomenon.

5.2 Findings

Findings of the research questions revealed that teachers considered the element of classroom condition as one of the main reasons of students' learning difficulty. They elaborated that in the effective instructional and learning process, classroom condition plays a major role. The size of class, proper space for easy movement in the classroom, furniture according to students' needs and ventilation system, teachers' load, these are the basic requirements of a familiar/usual classroom. Here, they work and there is a lack of above mentioned physical facilities. The absence of classroom facilities hinder the learning process. Most of the elementary school teachers reported that classrooms are overcrowded and have little space for easy movement in the classroom. Most of the teachers also reported there is no proper ventilation in classroom, and work load is also heavy for teachers. No proper furniture is available according to students' requirements. Teachers responded that without proper resources and facilities, it is hard for them to focus on students' individualized learning needs.

Findings of the question 2 exposed that teachers from public-sector and private-sector schools reported that in the public sector schools class size is different. More number of students are enrolled here. Although in many public schools the space of rooms is larger than private sector, yet they are overcrowded with strength of 30 to 40 students per class which hinders the learning process. Teachers also mentioned that

there is great ignorance of the student-teacher ratio in public sector schools. As a result, teachers have no connection with the child in the class. Greater class means no attention to effective handling of students. They also mentioned that class size is one of the main reasons for students learning difficulty. Learning difficulty is a major challenge for teachers and students. If it is left unaddressed then such students' needs cannot be met in the elementary classrooms. On the other hand, teachers of private schools mentioned that there are better classroom conditions in their schools. They have properly equipped classrooms, have less strength of students in the classroom, have more interaction with students, can provide more meaningful activities to students and feel easy to handle students with any type of difficulty.

Objective 2 was related to the exploration of teachers' awareness about learning difficulties of elementary level students.

Findings of the objective 2 displayed that elementary teachers have a lack of awareness of learning difficulty concept. They give a positive response about the misbehaviour of students in their classrooms during the study but they have no idea that this misbehaviour is a learning difficulty. Majority of teachers responded that they have low-level awareness about overall learning difficulties and the type of characteristics of learning difficulties. Teachers mentioned that they have low awareness about the identification of learning difficulty and the causes of learning difficulty. When teachers were asked about specific teachers' training, teachers responded that they are not properly trained to handle learning difficulties of students. They mentioned that there is no special module in the teachers' training programs to address the issue of learning difficulties.

The objective 3 deals with the exploration of the prevalence and behavioural problems of the ADHD students at elementary level. The findings reveal that teachers are typically deficient in the knowledge of ADHD. In fact, there is not any specific parameter for a teacher to identify the behaviour of a child; on the other hand, a teacher can observe and recognize students' specific behaviour performance in the classrooms and frequently makes recommendations for the assessment for these children. As the behaviours included in ADHD are inattentive, hyperactive and impulsive, the responses of teachers against the 20 statements of the questionnaire related to the ADHD prevalence among students of elementary classrooms were taken. From those 20 items, 11 items in the questionnaire dealt with the characteristics of inattentive behaviour, 6

items were linked with the characteristics of hyperactive behaviour and 3 items were based on the characteristics linked with impulsive behaviour.

The objective 4 deals with the measurement of teachers' demographic variations such as age, gender, qualification, sector, experience, grade and strength of the class in relation with the prevalence of ADHD students in their classes. For the fulfillment of this objective, the following hypotheses were formulated.

1. There is no significant difference in the prevalence of ADHD students in the classes of male and female teachers.
2. There is no significant difference in the prevalence of students having ADHD in the classes of younger teachers' (20-30yrs. / 31-40yrs.) and older teachers' (41-50yrs).
3. There is no significant difference in the prevalence of ADHD students in the classes of teachers having different qualification levels.
4. There is no significant difference in the prevalence of ADHD students in the public-sector and private sector schools.
5. There is no significant difference in the prevalence of ADHD students in the classes of teachers having diverse work experiences.
6. There is no significant difference in the prevalence of students having ADHD in early elementary (6^{th}, 7^{th}) and late elementary (8^{th}).
7. There is no significant difference in the prevalence of ADHD students in elementary level classes having diverse students' strengths.

Finding related with the first hypothesis reveal that Mean and SD values of male and female teachers' scores about ADHD students' problem in elementary classrooms. It appeared that the prevalence of inattention and hyperactivity and impulsivity were more common in the classes of female teachers as compared to male teachers. Table 4.16 shows the Mean and SD of male and female teachers' scores on the prevalence of students having ADHDs in their classes. The table makes it clear that facets related with inattention, hyperactivity and impulsivity are higher in the classes of female teachers as compared to male teachers. On the total scale Mean values of male are 58.6, whereas Mean values of female teachers are 63.00.

1. Results in connection with variable *age* can be seen in Table 4.18. It describes the Mean (M) and SD of elementary teachers scores on the prevalence of students with ADHD in relation with variable *teachers' age.* The result revealed

that the prevalence of inattention, hyperactivity and impulsivity are more in the classes of the younger teachers as compared to middle aged or older teachers. So it has been concluded that prevalence of students with ADHD are higher in the classes of the youngest teachers. The Mean values of the prevalence of ADHD in the classes of younger teachers are (from 20 to 30 years) M=87.7 and older ones (41-50years) are 59.7.

2. ADHD students in relation with variable *teachers' qualification* was measured and found that prevalence of ADHD students was higher in the classes of teachers with less qualification. The Mean values and SD values of teachers with the qualification of BA/B. SC/B.Ed. are M=101.5 and Mean values and SD values of teachers having the qualification of MA/M. SC/ M. Ed are M=69.9, whereas the Mean values teachers with the qualification of M. Phil are M=61.
3. The sector related differences were enlisted in table 4.22, which shows the Mean and SD of teachers' scores for the prevalence of students with ADHD in elementary classrooms. From this table, it appears that the existence of inattentive, hyperactive and Impulsive behaviour students were more in the public sector elementary classes. The Mean values and SD values of inattentive behaviour perceived by the public sector teachers were (M=45.9; SD= 2.5). The Mean values and SD values of hyperactive behaviour perceived by the public sector teachers were (M=28.4: SD= 2.1). The Mean values and SD values of impulsive behaviour perceived by the public sector teachers were (M=39.6: SD= 1.1). On the other hand, the Mean values and SD values of inattentive behaviour perceived by the private sector teachers were (M=36.6: SD= 3). The Mean values and SD values of hyperactive behaviour perceived by the private sector teachers were (M=15.7: SD= 2.8). The Mean values and SD values of impulsive behaviour perceived by the private sector teachers were (M=9.4: SD= 3.2).
4. Results about the prevalence of students with ADHD in elementary classrooms regarding the variable *teaching experience* are described in Table No 4.24. The results revealed that teachers' *work experience* helped to reduce the existence of ADHD. Teachers, who have less work experience, have more ADHD in their classes.

5. Grade wise differences in the prevalence of ADHD have been listed in Table 4.26. It shows that the prevalence of ADHD gradually increases with grade as the Mean values of class 5th teachers was 55.8, whereas the mean score of class 8th teachers was 91.5. From this table, it appears that the existence of inattentive, hyperactive and impulsive behaviour is higher in 8th grade as compared to 6th grade and 5th grade students.
6. The result related with class strength has been shown in Table 4.28. From the table, it appears that teachers who are having more than 40 students in their classes have reported higher prevalence of ADHD students. The Mean values of teachers having class strength of 20 to 30 reported the less prevalence of students with ADHD. The mean value is 67.3, whereas teachers who are having class strength of 40 and above have the mean value of 108.5.

Results related with the various challenges that are being faced by teachers in managing ADHD students at elementary level are discussed below. In order to get results, various hypotheses were formulated which have already been discussed earlier.

1. Table 4.30 describes the Mean and SD values of elementary students' scores on the self-awareness questionnaire about the extent of their ADHD behaviour in classroom in relation with variable *gender*; its subscales wise analysis revealed that overall self-awareness is higher among male ADHD students as compared to female students (M=109.70 Female M=98.67). The Mean values and SD values of students' awareness about inattentive behaviour on subscales revealed that overall male students have higher scores on inattentive, impulsive and hyperactive behaviour when compared with female students.

2 In Table 4.32, the Mean and SD values of elementary students scores on self-awareness questionnaire about the extent of their ADHD behaviour in classroom in relation with variable *grade level* is described. The Mean values and SD values of inattentive behaviour reported by students of a 6th class were (M=30.2; SD= 2.2). The Mean values and SD values of inattentive behaviour responded by students of a 7th class were (M=62.35; SD= 7.82). On the other hand, the Mean values and SD values of inattentive behaviour responded by students of an 8th class were (M=65.17; SD= 5.91). The Mean values and SD values of hyperactive behaviour reported by students of a 6th class were (M=29.77; SD= 9.19). The Mean values and SD values of hyperactive behaviour responded by students of 7th class were (M=36.88; SD= 7.26).

Furthermore, the Mean values and SD values of hyperactive behaviour responded by students of 8th class were (M=39.98; SD= 6.96). The Mean values and SD values of impulsive behaviour reported by students of 6th class were (M=29.42; SD= 7.02). The Mean values and SD values of impulsive behaviour responded by students of 7th class were (M=32.81; SD= 5.45). On the other hand, the Mean values and SD values of impulsive behaviour responded by students of 8th class were (M=43.06; SD= 4.77). Overall all students were aware of their ADHD behaviour, and facets of ADHD gradually increase in elementary students. The existence of inattentive, hyperactive and impulsive behaviour are higher in the students of 8th class

3 Table 4.34 depicted the Mean and SD of elementary students' scores on self-awareness questionnaire about the extent of their ADHD behaviour in classroom regarding the variable *school sector*. Mean values and SD values of inattentive behaviour reported by the public sector students were M=62.55; SD= 8.71. Mean values and SD values of hyperactive behaviour reported by the public sector students were M=38.80: SD= 2.91. On the other hand, Mean values and SD values of impulsive behaviour reported by public sector students were M=33.05: SD= 2.59. Further, Mean values and SD of the private sector students on all subscales of awareness questionnaire were as follows: inattentive, M=58.88; SD= 10.32, hyperactive M=27.12: SD= 5.10 and impulsive M=12.98: SD= 5.76. Overall the mean score of Public sector students was 104.40 and the mean of private sector students yielded 98.98.

4. Result related with Mean and SD of elementary students' scores about the extent of their ADHD behaviour in classroom regarding variable fathers' qualification is represented in Table 4.36. The Mean values and SD values of inattentive behaviour responded by students of fathers having the qualification of BA/B. SC/Bed were (M=68.6; SD= 4.5). The Mean values and SD values of inattentive behaviour responded by students of fathers having the qualification of MA/M. SC/Med were (M=59.6; SD= 5.9). The Mean values and SD values of Inattentive behaviour responded by students of fathers having the qualification of M. Phil were (M=56.4; SD= 6.7). On the other hand, the Mean values and SD values of inattentive behaviour responded by students of fathers having the qualification of Ph.D were (M=49.3; SD= 9.63). The Mean values and SD values of hyperactive behaviour responded by students of fathers having the

qualification of BA/B. SC/Bed were (M=68.6; SD= 4.5). The Mean values and SD values of hyperactive behaviour responded by students of fathers having the qualification of MA/M. SC/Med were (M=41.1; SD= 5.1). The Mean values and SD values of hyperactive behaviour responded by students of fathers having the qualification of M. Phil were (M=36.7; SD= 5.7). Moreover, the Mean values and SD values of hyperactive behaviour responded by students of fathers having the qualification of PhD were (M=33.3; SD= 7.03). The Mean values and SD values of impulsive behaviour responded by students of fathers having the qualification of BA/B. SC/B Ed were (M=38.2; SD= 2.6). The Mean values and SD values of impulsive behaviour responded by students of fathers having the qualification of MA/M. SC/Med were (M=33.1; SD= 5.5). The Mean values and SD values of impulsive behaviour responded by students of fathers having the qualification of M. Phil were (M=22.7; SD= 7.5). On the other hand, the Mean values and SD values of impulsive behaviour responded by students of fathers having the qualification of PhD were (M=19.3; SD= 8.86).

5. Table 4.38 describes the results of the students' scores about the variable mothers' qualification. Mean values and SD values on subscale inattentive behaviour responded by students of mothers having the qualification of Primary-8yrs were (M=68.8; SD= 5.3). The Mean values and SD values of Inattentive behaviour responded by students of mothers having the qualification of 8-12yrs were (M=60.5; SD= 6). The Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of 12-16yrs were (M=52.6; SD= 7.3). On the other hand, the Mean values and SD values of inattentive behaviour responded by students of mothers having the qualification of M. Phil/ Ph.D were (M=43.2; SD= 9.9). On the whole, it has been inferred that children of highly qualified mothers exbihted less facets of ADHD as compared to children of less qualifed mothers.
6. Students' Mean and SD about the awareness of their classroom behaviour in relation to the variable *fathers' profession* has been shown in Table 4.40. Results revealed that the existence of inattention and hyperactive behaviour is approximately the same in children of fathers pursuing a job in the public sector or private sector.
7. Table 4.42 shows the Mean and SD of ADHD students about awareness of their classroom behaviour in relation with variable *mothers' profession*. It displays

that that students whose mothers are working women have more awareness about their classroom undesired behaviour; children of working mothers' Mean value is = 102.0, and non-working mothers' is = 93.5.

8. Students' Mean and SD on the self-awareness questionnaire in relation with variable *family monthly income* has been shown in Table 4.42. The SD values and Mean values on the sub-scale, i.e., inattentive behaviour responded by students of family income 20,000-30,000 were (SD= 4.1, M=66). The Mean values and SD values on the subscale inattentive behaviour responded by students of family income 31,000-40,000 were (M=54.8; SD= 5.9). The Mean values and SD values on the subscale inattentive behaviour of students of family income 41,000-50,000 were (M=49.4; SD= 7.8). The Mean values and SD values on the subscale inattentive behaviour students of family income 51,000 and above were M=43.2; SD= 9.5. The Mean values and SD values of hyperactive behaviour responded by students with a family income 20,000-30,000 were (M=47; SD= 5.5). The Mean values and SD values of hyperactive behaviour responded by students with a family income 31,000-40,000 were (M=39.1; SD= 8.1). The Mean values and SD values of hyperactive behaviour responded by students with a family income 41,000-50,000 were (M=30.8; SD= 9.7). The Mean values and SD values of hyperactive behaviour responded by students with a family income 51,000 and above were (M=21.2; SD= 10.2). The Mean values and SD values of impulsive behaviour responded by students with a family income 20,000-30,000 were (M=28; SD= 3.8). The Mean values and SD values of impulsive behaviour responded by students with a family income 31,000-40,000 were (M=20; SD= 2.7). The Mean values and SD values of impulsive behaviour responded by students with a family income 41,000-50,000 were (M=17.7; SD= 2.2). The Mean values and SD values of impulsive behaviour responded by students with a family income 51,000 and above were (M=14.7; SD= 1.7). Overall students who belongs to less income groups have more awareness about their ADHD behaviour. They were also exhibiting higher score on all subscales of ADHD (Rs. 20,000-30,000 Mean=141, Rs. 51,000Mean =79.1).
9. Results provided in table No. 4.46 depicted the Mean and SD of ADHD students' scores on the self-awareness questionnaire in relation with variable *number of siblings*. Overall ADHD students who were having more number of

siblings have higher score of the self-awareness questionnaire. Subscale wise analysis revealed that overall they have more tendencies of inattentive, hyperactive and impulsive behaviour than ADHD students having less number of siblings (having 1-2 siblings, Mean= 99.3; having more than 7 siblings M=128.6).

The objective 7 deals with the development of teaching interventions for higher academic achievement and behavioural management of elementary level ADHD students. Based upon the exploration of phenomena empirically, the following interventions were developed for Elementary school teachers.

Table 5.1

Proposed Teaching Interventions

Major type of interventions for Teachers	Details of interventions
Instructional interventions	1. Provide instructions by using possible tools and technology for visual aid to ADHD students. 2. List detailed stepwise instructions on board. 3. Use specific, brief and easy words for instructions. 4. Encourage ADHD students to repeat the stated instructions in their own words. 5. Make frequent direct eye contacts with ADHD students during delivering instructions. 6. Structure tasks into small sub-tasks for ADHD students.
Behavioural interventions	7. Have frequent effective verbal praise for the ADHD students on showing positive behaviour. 8. Overlook the specific behavioural disruptive form of the ADHD students. 9. Minimize the potential choices of distraction from the classrooms. 10. Give ADHD students rewards after every successful completion of task.

Major type of interventions for Teachers	Details of interventions
Physical classroom management interventions	11. Engage ADHD students in constructive physical activities. 12. Use personal visual signals (gentle hand tap, color cards, head gestures, etc.) on undesirable behaviour of ADHD students. 13. Change ADHD students seating arrangement frequently (if desired). 14. Ask ADHD students to be seated at front/ near the class teacher. 15. Ask ADHD students to be seated along outstanding classmates. 16. Do not let students with ADHD be seated near windows and doors. 17. Create classrooms conditions that are conducive in terms of physical facilities. 18. Provide sound proof classrooms to minimize distractions.

The last objective deals with measurement of the effects of teaching interventions on academic performance and behavioural management of ADHD students. For this purpose, the effectiveness of these interventions were established in two separate experiments -- one on teachers and another on ADHD students.

1. It was hypothesized that there is no significant difference on pre-training and post-training scores of elementary teachers on the self–report questionnaire. The result revealed significant difference in the scores of teachers before and after training .Teachers' pre and post-training scores yielded a statistically significant difference when t-test was applied.
2. It was hypothesized that there is no significant difference in the score of ADHD students of experimental group and control group on classroom achievement test. The experimentation was planned to calculate the difference in the performance of participants of control and experimental groups. Results showed a significant difference in the scores of students who were taught through

traditional methods in comparison with those who were taught through teaching interventions.

3. It was hypothesized that there was no significant difference in the score of ADHD students of experimental group and control group on behavioural rating scale. For the measurement of behavioural management of the ADHD students, differences in the pre and post-teaching (through interventions) ratings were taken on behavioural rating scale. A significant difference was there in the behaviour of the participants of experimental groups.

The findings depicted that academic performance and behavioural management of ADHD students can improve if instructional, behavioural and physical classroom management interventions are applied simultaneously while teaching to ADHD students.

5.3 Discussion

Diversity exists in nature. It exists in humans even in animals and plants. Living things ought to follow nature and its regulations. Obviously the rule of diversity can be seen in the context of teaching learning process, where students and teachers are the main components. Students are having vibrant differences of intelligence, aptitudes, attitude, abilities and interests. In determining individual differences of students, genetic and environment are two key players; however, sometimes due to some disorder, students seem different from others in comprehension of the instructions and following norms. Without understanding of the teaching instructions and following classroom norms, success is hard to achieve. This could be one of the strong reasons of students' failure despite efforts on the part of teachers.

Finding of the study helped to conclude that in elementary schools many students are having learning difficulties and learning problems due to which they face humiliation and failures. Findings also revealed that majority of our school teachers are not well equipped to face the challenges of learning difficulties of students. Teachers working in elementary schools often ignore the detection of such learning difficulties. Therefore, they label such students as dull, less intelligent, disturbance creators, etc. The lack of knowledge leads to a lack of better support for that type of students; consequently, they lead such learners towards low self-esteem and low self-efficacy and school dropout. Students start negatively thinking about themselves; they are not

able to learn anything as their peers do. In addition to this negative remark of the teachers, peers and family hurt them on daily basis.

If schools and teachers provide proper support, such students may be able to give their best. With proper support and timely help, teachers' role is vital. Generally, it has been observed during research that teachers are facing hardship due to disruptive behaviour of many students in classroom. Students are unable to conform to the teachers' instruction and produce no or poor quality work at school. Often teachers lack patience to face such types of challenges. Due to unsympathetic teachers' behaviour, students also feel lowly confident and do not share their concerns and difficulties. Teachers think such students are incompetent to learn, read or write at normal pace. (Westwood, 2008).

Mathew, Gormley and Dupaul (2015) mentioned that ADHD is a learning difficulty that has an excessive influence on students' learning. It affects students' mind that creates hurdle in the way/ process of learning. Further, most of the time we as parents hear the teacher saying about our child, "your child is not focusing on instructions which I gave to him/her or your child does not concentrate on tasks during class" (Kos *et al*., 2006) defined the classroom environment is the most difficult environment for ADHD students because of the constant conflict between "core symptoms of this disorder" and appropriate classroom behavioural expectations (p.148).

The present study was based on the development of teaching interventions for ADHD students that can lift the academic success and behavioural management. This was the core assumption that if teaching interventions are applied carefully, it would enable teachers to manage the learning difficulties and behaviour of ADHD students. After this accommodation, ADHD students may perform brightly like common students of their class.

The major objectives of current study were to explore the extent of physical facilities at elementary schools. The study also explored teachers' awareness about learning difficulties of elementary level students. The attempt was made to explore the prevalence and behavioural problems of ADHD students, too. This study measured teachers' demographic variations such as age, gender, qualification, sector, experience, teaching grade level and strength of the class in relation with the prevalence of ADHD students in their classes. This study also measured the effect of students' demographic variations such as gender, grade, sector, fathers' qualification, fathers' profession, mothers' qualification, mothers' profession, monthly income of the family and number

of brothers and sisters in determining the extent of ADHD. This study was conducted to find out various challenges that are being faced by teachers in managing ADHD students at elementary level. An important objective was to develop interventions for higher academic achievement and behavioural management of elementary level ADHD students.

In order to achieve the research objectives, several hypotheses and research questions were formed. The first hypothesis deals with teachers' gender. Findings revealed that there is a significant difference between female and male teachers' responses to the prevalence of ADHD in elementary classes. T-test was applied to see the difference in the scores of male and female teachers. From Table 4.17, it can be seen that the value of t is 4.32 and its p-value is 0.03 which are statistically significant at $p<0.05$ so we rejected H_0. There is no difference between the prevalence of students having ADHD in the classes of male and female teachers. Therefore, it has been concluded that a significant difference exists in the prevalence of ADHD students in the classes of female and male teachers. Gender can affect teachers' ability to direct students' behaviors towards successes. Female teachers have extra behavioural issues with ADHD students of their classrooms as compared to male teachers. Female teachers have less control over the class; as a result, they faced undesirable behaviour from students. Theory also supported this finding that often female teachers lack control in the classrooms (Farrington *et al*., 2012).

The second hypothesis was related to the age of the teachers; findings represent that the classes of younger teachers face more behavioural issues as compared to older teachers. From table 4.19, it can be seen that significant difference exists in the scores of teachers of various age groups in the prevalence of students with ADHD in classes ($F=7.24$, $P=.00$). The Mean values given in Table 4.18 depicted the prevalence of ADHD as higher in the classes of younger teachers. Gershenson (2016) claimed that over the past years, numerous studies confirmed that new teachers do not have the requisite knowledge to understand the complex interrelationships among management of students' behaviour and academic tasks.

Teachers' qualification was another variable for the handling of ADHDs. The result of the study exposed that there was a significant difference in the prevalence of students with ADHD in the classes of teachers having different qualification levels. Having rejected Ho 3, it is clear that there is no difference in the prevalence of students with ADHD in the classes of teachers having different qualification levels and H_1 was

accepted. Since results of the study make this clear that teachers having less qualification have more students with ADHD as compared to teachers having high qualification. Teacher quality is the first characteristic that appears when parents, teachers, school leaders and researchers examine schools to determine school quality. Teacher quality can be evaluated based on the number or types of qualifications a teacher holds. There are many different qualifications that an educator can possess which will enhance his/her ability to improve students' behaviour (Sawchuk, 2009).

The role of sector was also explored and found that there is a significant difference among the prevalence of students with ADHD in the public sector classes as compared to private sector classes, and it also appeared from the results that on the whole teachers of the public sector have more students with ADHD in their classrooms as compared to private sector school teachers. To test this hypothesis, that there is no difference in the prevalence of students with ADHD in public and private sector elementary classrooms, t-test was calculated. The value of t was 39.96 and p-value was 0.00 which were significant at $p< 0.05$ (Table 4.23). Overall mean also revealed that the existence of ADHD students were higher in the public sector schools. According to National Assessment of Educational Progress (NAEP) which is a representative at national level for the assessment of American students' knowledge in various subject areas, it reports that private schools performed better than public schools in all aspects of management and environment (Perie, Vanneman, & Goldstein, 2005).

The teaching experience was another variable that was explored in this study; results revealed that there are more students with ADHD in less experienced teachers' classrooms as compared to more experienced teachers. The results showed significant difference in the awareness level of teachers having more work experience than that of less experienced teachers in elementary classrooms.

Two-way ANOVA was applied for the prevalence of inattentive value of f and it was 10.43 and its p-value was 0 .00, which are statistically significant at $p< 0.05$. The prevalence of hyperactive value of f was 16.62 and its p-value was 0.00 which were statistically significant at $p< 0.05$. The prevalence of impulsive value of f value was 14.55 and its p-value was 0.00 which were statistically significant at $p< 0.05$. So, we rejected Ho that there is no difference in the awareness level of teachers having more work experience than that of less experienced teachers in elementary classrooms. So we accepted H_1 (table 4.25).

Teacher quality is sometimes related to how many years of experience a person has taught or even taught a particular subject. As educators, we should be our own worst critics constantly seeking to improve what we do in the classroom. Most people would think that a teacher with multiple years' experience would do a better job than a first or second year teacher. In general discussion among members of the educational profession, teacher experience is considered an enduring characteristic (Sachiko, 2008).

Studies on the effect of teacher experience on student learning have found a positive relationship between teacher effectiveness and his/her years of experience, but it is not always a significant or an entirely linear one. The evidence currently available suggests that while inexperienced teachers are less effective than more senior teachers (Rivkin, Hanushek, & Kain, 2005).

The Prevalence of ADHDs students were explored in various grades and results revealed that that there is a significant difference in the prevalence of ADHD in the early elementary (6th, 7th) classes as compared to late elementary (8th) classes. From Table 4.27, it can be seen that the result of testing of 6 hypothesis that there is no difference in the prevalence of students with ADHD in early elementary (6^{th}, 7th) and late elementary (8^{th}) classes. Two-way ANOVA was applied to see the significance of difference in the responses for the prevalence of inattentiveness. The value of F is 2.355 and its p-value is .00 which are statistical significant at $p< 0.05$. Literature is also saying that ADHD is not just a childhood disorder. Although the symptoms of ADHD begin in childhood, yet it can continue through adolescence and adulthood if not treated timely. Even though hyperactivity tends to improve as a child becomes a teen, problems with inattention, disorganization, and poor impulse control often continue through the teen years and into adulthood (National Institute of Mental Health, 2016).

The size of class matters a lot at elementary level; therefore, it was explored and found that classes with more number of students are having more students with ADHD characteristics. Class size is one of the crucial issues faced by students, teachers and management. This issue has been commonly discussed or argued since the inception of the formal schooling system. A set of theories focus on student behavior, which generally propose that students in smaller class sizes are more likely to be engaged socially and academically, and less likely to display problematic behavior. Thus it allows teachers to focus more on the subject-matter instruction (Biddle & Berliner, 2002).

From Table 4.29, it can be seen that the testing of 7th hypothesis describes that there is no difference in the prevalence of students with ADHD in large size classes (more than 40) as compared to average size classes (20-30). Two-way ANOVA was applied and for inattentive behaviour, the value of f was 1.28 and its p-value was 0.00 which were statistically significant at $p< 0.05$. For hyperactive behaviour, the value of f was 1.99 and its p-value was 0.00 which were statistically significant at $p< 0.05$. For impulsive behaviour, the value of f was 1.23 and its p-value was 0.00 which were statistically significant at $p< 0.05$. Therefore, Ho was rejected. There is no difference in the prevalence of students with ADHD in large size classes (more than 40) as compared to average size classes (20-30) and H_1 was accepted. It has been concluded that there was significant difference in the prevalence of students with ADHD was higher in large size classes (more than 40) as compared to average size classes (20-30). Self-awareness of one's own behaviour was considered a variable for performance indicator in managing behaviour.

Hypothesis 8 was "there is no significant difference in self-awareness of male and female ADHD students studying at elementary level". Results indicated that there is a significant difference in the self-awareness (about the extent of their ADHD behaviour in classroom) of male students as compared to female students in elementary classes. Male students were more aware about their ADHD in the classroom as compared to female students. The result can be seen in Table 4.31. it gives the value of ***t*** which was 5.875 and *p*-value was 0.00 which were statistically significant at $p< 0.05$ level. So, Ho was rejected that there is no significant difference in the self-awareness of male and female ADHD students studying at elementary level". H_1 was accepted and concluded that there is a significant difference in the self-awareness about the extent of their ADHD behaviour in classroom.

Hypothesis 9 was formed to see the difference in the self-awareness of students "There is no significant difference in the self-awareness of the students (about their own behaviour) studying at grade 6th, 7th and 8th.

Students' awareness in relation with grades was explored and found that there is a significant difference in students' self-awareness about their behaviour in late elementary (8th) classes as compared to early elementary classes (6th, 7th). Table 4.33 revealed that for inattentive behaviour, the value of *f was* 2.386 and p-value was .00

which were statistically significant at $p< 0.05$. For the hyperactive behaviour, the value of *f was* 1.766 and p-value was .00 which were statistically significant at $p< 0.05$. For the impulsive behaviour, the value of *f* was 1.016 and p-value was .00 which were statistically significant at $p< 0.05$. Ho that there is no significant difference in the self-awareness of students (about their own behaviour) studying at grade $6^{th,}$ 7^{th} and 8th.

Literature is also saying that ADHD is not just a childhood disorder. Although the symptoms of ADHD begin in childhood, ADHD can continue through adolescence and adulthood if not treated timely. Even though hyperactivity tends to improve as a child becomes a teen, problems with inattention, disorganization, and poor impulse control often continue through the teen years and into adulthood.

The role of sector was explored in relation with students' awareness about their ADHD and found a significant difference in students' self-awareness about their behaviour in public sector elementary classes as compared to private sector elementary classes. For hypothesis testing two sample t-test was calculated, t-value 3.89 was significant at $p< 0.05$. Therefore, with these results we rejected Ho which stated there is no significant difference in the self-awareness of ADHD students of private-sector and public-sector elementary schools. Therefore, H_1 has been accepted that there is a significant difference in students' self-awareness about their behaviour in public sector elementary classes as compared to private sector elementary classes. Public schools are often work according to their full capacity; the number of students outnumber the teacher. While this situation may not bother some students or parents, most children find themselves acting a certain way to attract attention from their teacher and peers. Whether the students seek attention by pursuing good grades or through acting out for negative attention, children need positive affirmation and special attention to thrive in their school years, and not just survive. A private school offers smaller class sizes, more individual attention, and a better understanding of how each student prefers to learn. This allows the teacher to take time and cater lessons to teach in a more personal way. According to parents and students, the small class has a positive impact on student learning and achievement, and it enables teachers to cater to all the students present in the class and observe their behaviour.

Students' demographic variation plays an important role in determining their behaviour. In this regard, parents are playing a very important role in determining the

child behaviour. Father characteristics and qualification can have impacts on children behaviour, too.

Fathers' qualification impact was explored in relation with ADHDs and found that there is a significant difference in the prevalence of ADHD among the children of highly qualified fathers as compared to less qualified fathers. From Table 4.37, it can be seen that for the inattentive behaviour of students, the value of ***f*** 1.400 was statistically significant at $p< 0.05$. For the hyperactive behaviour of students, the value of ***f*** 2.636 was statistically significant at $p< 0.05$. For the impulsive behaviour of students, the value of ***f*** 1.197 was statistically significant at $p< 0.05$. Therefore, hypothesis Ho "There is no difference in the self-awareness of ADHD among children (ADHD) of more qualified fathers and less qualified fathers", was rejected. Hence, H_1 has been accepted that there is a significant difference in the self-awareness of ADHD children who have more qualified fathers as compared to less qualified fathers.

It was hypothesized that there is no difference in the self-awareness of (ADHD) children of more qualified and less qualified mothers. Two-way ANOVA was calculated to test hypothesis related with mothers' qualification. From Table 4.39, it can be seen that on all subscales, a significant difference was found at $p< 0.05$. So, we rejected Ho and accepted H_1. Therefore, it has been concluded that there was a significant difference in the awareness of ADHD among the children of highly qualified mothers and less qualified mothers. The children of highly qualified mothers have fewer ADHDs as compared to less educated mothers. Zhijun, Zeyun and Baicai (2016) found a significant positive effect of the parents' income and educational levels on the academic achievement of primary school students based on a longitudinal survey of families. Muraina and Ajayi (2011) examined the causal-effects of parents' education on students' behaviour. The results revealed that parents' education has the vital influence on the behaviour of students. DeBaryshe, Patterson and Capaldi (1993) argued that parental education is directly related to styles of parenting. In their study, parents with lower educational attainment used coercive strategies for discipline which, in turn, predisposed their children to antisocial and abnormal behaviours.

Fathers' profession was considered another variable of differentiation and found that existence of inattention and hyperactive behaviour is approximately the same in children of fathers pursuing a job in the public sector or have their own business. It was hypothesized that there is no significant difference in the self-awareness of ADHD students whose fathers are employed in the private and public sector organizations.

Two-way ANOVA was performed to test the hypothesis that there is no significant difference in the self-awareness of ADHD students whose fathers are employed in the private and public sector organizations (see Table 4.41).

It was hypothesized that there is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women. The result reported significant difference in the self-awareness of children whose mothers were working or homemakers.

Table 4.34 revealed that for inattentive behaviour, the value of *f* was statistically significant at $p < 0.05$ level of significance. For hyperactive behaviour, the value of *f* was 13.72 statistically significant at 0.05 level of significance. For impulsive behaviour, the value of *f* 1.78 was statistically significant at $p > 0.05$ level of significance. Therefore, the hypothesis Ho was rejected that there is no significant difference in the self-awareness of ADHD students belonging to homemakers and working women and H1was accepted. The point of parents' occupation and students' behaviour development has been supported by the different studies. Students from parents with high occupation level performed poorly compared to those students from parents' low and middle occupation level (Walter, 2018). Parents have informal jobs and are mainly self-employed without a guarantee to turnover cannot afford to spend a great deal of time on their children (Usaini & Abubakar, 2015). Highly educated parents with high or low occupation level have better outcomes compared to their peers whose parents have low educational and occupation level (Castillo *et al*., 2011). Overall this study confirms parents' effect on their children's behaviour control. It finds positive connection between educational and occupational levels of father and mother (Al Agha *et al.*, 2017). Family's socio-economic status, father's education, occupation and income affect children's performance (Das & Sinha, 2017). Parents' occupation identifies the parents' ability to finance the academic performance, too (Gabriel, Muli, Muasya, Maonga, & Mukhungulu, 2016).

Hypothesis 15 states that "there is no significant difference in the self-awareness of ADHD students belonging to the family of various income groups". Two-way ANOVA was applied to test the above-mentioned hypothesis, and from Table 4.45 it can be seen that for inattentive, the value of ***f*** 7.89 was statistically significant at $p< 0.05$. For hyperactive, the value of *f* 9.16 was statistically significant at $p< 0.05$ and for

impulsive, the value of *f* 9.31 was statistically significant at p< 0.05. Therefore, Ho statement "There is no significant difference in the self-awareness of ADHD students belonging to the family of various income groups" was rejected and H_1 was accepted. The theory also supported that parental monthly income affects children's behaviour; the findings of research also revealed that ADHD children were higher in low monthly income families than the children of the high income family.

Hypothesis 16 was formed to see the effect of sibling; it stated that "there is no significant difference in the self-awareness of ADHD students having less number and more number of siblings". The number of siblings can also impact behaviour. From Table 4.47, it can be seen that for inattentive, the value of *f* 1.172 was statistically significant at p< 0.05. For hyperactive, the value of *f* 7.32 was statistically significant at p< 0.05. For impulsive behaviour value of *f* s 1.12 was statistically significant at p< 0.05. Overall the mean score elaborated that the existence of ADHD students is higher in the families where children are having more than 6 or 7 siblings.

Hypothesis 17 was designed to see the effect of training about knowledge of teaching interventions of handling ADHD children; it is stated that "there is no significant difference in the pre-training and post-training scores of elementary teachers (about knowledge of teaching interventions of handling ADHD children)". From table 4.58 The table above shows that value of t is 5.6 on teachers before and after training scores. Teachers' pre and post-training scores yielded statistically significant difference. Results displayed that the training of teachers created positive effect on teachers' knowledge about ADHD.

Hypothesis 18 was developed to see effect of interventions on students' achievement scores; it is stated that "there was no significant difference in the score of ADHD students of experimental group and control group on classroom achievement test". From the table 4.59 it appears that a significant difference exists in the scores of students who were taught through traditional methods in comparison with those who were taught through interventions. Results demonstrated that the students taught by using several interventions have improvement in academic achievement scores.

Hypothesis 19 was established to see the effect of interventions on students' classroom behaviour; it is stated that There was no significant difference in the score

of ADHD students of experimental group and control group on behavioural rating scale. From the table 4.60 shows a significant difference in the scores on 18 item behavioural scale of students' belonging to experimental and control groups (post-interventions). Results are statistically significant at 0.02 level of significance. Overall the use of interventions created great effect on students' behaviour.

In order to evaluate the awareness and knowledge of elementary school teachers regarding ADHD in the Pakistani main school system, the research questions mentioned in chapter 1 were developed to learn these phenomena more deeply. Here, the researcher intends to give answers of the research questions raised in chapter 1.

Answer to Research Questions

Question NO 1. What is the perception of teachers about elementary classrooms physical condition?

This question was related to classroom conditions and it was posed to teachers. Teachers are considered the element of classroom. They told there is a tiny discussion on this topic of ideal classroom conditions specifically. They elaborated that in the effective instructional and learning process, classroom condition has a major role. The size of class, proper space for easy movement in the classroom, furniture according to students' needs and ventilation system, teachers' load, etc., are the basic requirements of a familiar/usual classroom. Here they work, and there is a lack of above mentioned physical facilities. The absence of classroom facilities hinder the learning process. Most of the elementary school teachers reported that classrooms are overcrowded and have little space for easy movement. Most of the teachers also reported there is no proper ventilation in classroom, the workload is also heavy on teachers on daily basis. There is no proper furniture according to students' requirements. Teachers responded that without proper resources and facilities, it is hard for them to focus on students' individualized learning needs.

Question NO 2. Is there any difference in physical conditions of the public and private elementary classrooms?

It has been reported by elementary teachers that the difference exists. Teachers from public-sector and private-sector schools reported that in the public sector schools class size is different. More number of students are enrolled here although in many schools space of rooms is larger than private sector but still they are overcrowded with the strength of 30 to 40 students per class and it hinders learning. Teachers also

mentioned that there is great ignorance of the student-teacher ratio in public sector schools. As a result, teachers have no connection with the child in the class. Greater class means no attention to effective handling of students. They also mentioned that class size is one of the main reasons for students learning difficulty. Learning difficulty is a major challenge for teachers and students. If it is left unaddressed, such student's needs can't be met in the elementary classrooms. On the other hand, teachers of private schools mentioned that there is a better classroom condition in their schools. They have properly equipped classrooms, have less strength of students in the classroom, have more interaction with students, can provide more meaningful activities to students and feel easy to handle students with any type of difficulty.

Question NO 3. What is the level of teachers' awareness and knowledge regarding the elementary classroom students' learning difficulties?

Learning difficulty or disability is linked with interruption in learning; it deviates one from the task and shows undesirable behaviour during the learning process. When elementary teachers were asked about it, they gave a positive response about the misbehaviour of students in their classrooms during the study, but they have no idea that this misbehaviour is a learning difficulty. Majority of teachers responded that they have low-level of awareness about the overall learning difficulty and the concept of learning difficulty, and any type of characteristics of learning difficulties. Teachers mentioned that they have very less awareness about the identification of learning difficulty and its causes. When teachers were asked about specific teachers' training, teachers responded that they are not properly trained to handle learning difficulty students. They mentioned that there is no special module in the teacher training programs to address and handle learning difficulties.

Question NO 4. How many types of learning difficulties have been seen in the elementary classroom by teachers?

Teachers have no idea about the learning difficulties just mentioned above. These can be they do not listen, come late, have poor hand writing, are poor in mathematics, do not sit in a proper way, and are unabel to write from board.

Althogh they are unable to name the technical terminalogy, yet its different facets are revealed such as Auditory Processing Disorder (APD)(difficulty in perceiving auditory information), Dyscalculia (trouble in performing arithmetical calculations), Dysgraphia (inability to write articulately/ logically), Dyslexia (reading disorder), Language Processing Disorder (LPD) (issues in understanding and interpretation of words they hear), Non- Verbal Learning disability (NVLD) (issues in

understanding facial expressions, voice tones and body languages, Visual Perceptual (issues in learning information from environment through seeing, or the ability to copy), Dyspraxia (difficulty in activities requiring coordination and movement), Memory (issue to accumulation and retrieval of stored information for task completion), ADHD (disorder that comprises issues in staying focused and applying due attention, issues in controlling or regulating behaviour and hyperactive).

Question NO 5. What is the ADHD prevalence among students in elementary classes?

Literature displays that teachers are typically deficient in knowledge of ADHD. In fact, there is not as such a specific parameter for a teacher to identify the behaviour of a child; on the other hand, a teacher can observe and recognize students' specific behaviour performance in the classrooms and can make recommendations for the assessment for these children.

The behaviour of ADHD students include: inattentiveness, hyperactivity and impulsivity. Therefore, the responses of teachers against the 20 statements of the questionnaire related to the ADHD prevalence among students of elementary classrooms were taken. From those 20 items, 11 items in the questionnaire dealt with characteristics of inattentive behaviour, 6 items were linked with characteristics of hyperactive behaviour and 3 items were based on characteristics linked with impulsive behaviour. From the responses of teachers, it was exposed that 57.12% of the sampled students had occurrence of ADHD in the elementary level classes.

Question NO 6. What type of behavioural problems are exhibited by ADHD students in the elementary classes?

There are many factors responsible for contributing to the behaviour of students. While investigating the behavioural characteristics of ADHD students, it is very hard to find out perfect causation of ADHD. With the help of literature, the questionnaire was developed based on several characteristics of ADHD and responses of teachers were taken. The percentage of responses of teachers related to awareness about the behavioural characteristics of the ADHD students observed in elementary classes was collected. From the responses of teachers, it comes out that the behaviour displayed by students in the class was: a less focus on teachers' instructions or a lack of focus among students in the class, waste of time, a difficulty in waiting for their turn among students

in the class, etc. or we can say that they are unable to be organized, do excessive talk in the class, show reactive attitude in the class, make a noise where they should stay quiet, recurrently move, run or walk and in the class.

Question NO 7. What kinds of challenges are being faced by teachers during teaching to elementary students?

Teachers and students spend most of their day time with each other, and there is a variety of behaviour that the teacher faces in the classroom. These diversities of behaviour are very much challenging for the teacher. The undesirable behaviour of students can be frustrating for the teachers. The percentage of teachers' responses on the item of challenges faced by teachers related to ADHD students in the elementary classes have determined that teachers face many challenges such as discipline. The teacher has to manage the undesirable behaviour of students that needs time and it carries off the lecture time. The undesirable behaviour of the child creates disturbance in the whole class and makes difficulty for teachers in classroom activities which the teacher has prepared for students. Class size is also a major challenge for teachers as the students having behaviour problem require individual attention that cannot be possible in large classes. There are also some challenges of time management that create hurdle during smooth teaching-learning process.

Question NO 8. What type of management interventions are used by teachers in the elementary classroom to handle ADHD?

Interventions are defined as evidence-based tactics, strategies, approaches, or methods employed by teachers within the general classroom environment and school situation to aid in strengthening the positive behaviour of students.

Mainstream elementary teachers have no proper training and awareness about management strategies to handle ADHD students. They try to use their own experiences to handle the learning problems of the students.

Percentage of the teachers' responses to the items of management strategies used for managing students with the ADHD in Elementary classrooms were calculated. The first most used strategy was to gain students' attention before giving instruction. Secondly, they try to give opportunities for choice in selecting the class task to the students. Thirdly they motivate students to take part in in-class activities.

Question NO 9. What types of educational interventions are used by teachers in the elementary classroom to handle students with ADHD?

Teachers of elementary educational classes were mostly engaged in applying management interventions to accommodate ADHD behavior of students. However, they have limited focus on educational interventions.

Analysis of teachers' responses revealed some educational interventions often used by teachers in elementary classrooms were the peer tutoring with physical arrangement along with variation in material and presentations.

Findings of the research study were significant because all the hypotheses were confirmed except one. It was found from the result of this study that teachers were facings the learning difficulties of their students because this issue of learning difficulty was not noticed by most of them. Teachers responded that they were facing poor classroom conditions; further, many teachers mentioned that most students have less span of attention during classes. ADHD students generally demonstrate an unwanted behaviour during the class lecture.

The ADHD prevalence among elementary classrooms students was also found by the teachers and it is also evident from the results of this study. During the lectures, teachers normally face challenges related to the discipline of the elementary students which create difficulties for the teacher to cover the lesson which they have set for the class. The classes with large size are also a great challenge for the elementary teachers.

Results of the study revealed that teachers' demographic variation has created a great difference among the responses related to the prevalence of ADHD in their classrooms. Female teachers have more students with learning difficulty of ADHD as compared to male teachers. It was also presented and confirmed that the young teachers have more students with ADHD then the experienced ones. Likewise, the results of the study established that the teachers from public-sector face more ADHD issues than the teachers from the private-sector. Less qualified teachers have more ADHD students in their classes. Higher-strength of students in classes has more ADHD as compared to less number of students' classes. Chances increases in eight class as compared to the other two classes which are sixth and seventh. Classrooms with the underprivileged conditions have enlarged number of students with ADHD as compared to classes having excellent conditions.

If we talk about the students, results showed that most of them are self-aware of their learning difficulties. Due to demographic variation among students, males are

more inattentive and hyperactive and impulsive as compared to female students. ADHD prevalence is more in elementary classes of the public sector as compared to the private one. Parental qualification seems to a major factor in the existence of ADHD behaviour. Children of highly educated parents found to have fewer ADHD problems as compared to others. It is to be highlighted that the fathers' profession has no effect on the behaviour of students. However, children of working women are found to be higher in ADHD prevalence. Existence of impulsive, hyperactive and inattentive behaviour is also high in students having more than seven siblings.

The findings from the questionnaires for teacher specified that teachers' knowledge and awareness about ADHD and interventions to handle ADHD is insufficient. Therefore, some suitable interventions were proposed and checked the effectiveness of these interventions for quality handling of ADHD students by pilot testing. The data were collected by the self-reported questionnaire based on DSM-V and Conner's teacher and parents rating scale before and after 5 days of training 40 teachers (preferably class teachers) from three elementary level classes for this pilot study. The training program was mainly based on printed reading material related to awareness about learning environments, learning difficulty, diagnostic tools of ADHD, teaching interventions, and application of teaching interventions. The statistical analysis of data shows that outcome of this training was some improvement in teachers' knowledge regarding ADHD interventions and application of interventions in the elementary classroom. Similar findings are found that the teacher training program about ADHD significantly enhanced the awareness of the teachers about ADHD interventions and their effective real-time application in classrooms (Lasis, Ani, Lasebikan, Sheikh, & Omigbodun, 2017). The effectiveness of in-service training of 274 teachers makes connection between the teacher' awareness about ADHD and effective application of this awareness in the classrooms, and it was also reported by (Latouche & Gascoigne, 2017).

Thus, the findings of the current study might find that general lack of awareness and preparedness of elementary school teachers, and training of teachers about ADHD would enhance the effectiveness of these teachers to incorporate the ADHD students in elementary classrooms.

Teachers training can enable teachers to handle ADHD students in more efficient way. In phase II of this study, experimental study was designed due to the

reason that finding of phase I revealed that teachers who are working at the elementary school have less or insufficient knowledge about ADHD students. Teachers are not using any effective method through which they can manage academic and behavioural problems of ADHD students successfully. Therefore, teacher training was designed and one of the major goals of this training was to impart knowledge and hand-on experience for the better academic performance and behavioural management of ADHD students of elementary level. Underlying assumption was this that training would enhance teachers' skills to manage the behavior of ADHD students in effective manner in classrooms situation.

It was hypothesized that there is no significant difference on pre-training and post-training scores of elementary teachers on the self-report questionnaire.

In this simple experiment, independent variable was taken as teachers' training about instructional, behavioural and physical classroom management interventions for handling of students with ADHD and dependent variable was effective handling of ADHD students for academic achievement and behavioural management. A stratified random sample of 40 teachers was collected from 4 schools, 3 from the public sector and 1 from the private sector.

The interventions were decided to test in through simple pre-test post-test experimental design. Simple experiment pretest post-test designed was used to provide training to elementary teachers. Before imparting training to teachers, their knowledge about ADHD students was checked through the self-report questionnaire. The self-report questionnaire for the teachers was based on 40 items which deal with various aspects of the management of students with ADHD. Pretest was conducted before training, questionnaire of 40 items based on the content related with knowledge of various aspects of ADHD was administered. The participants were requested to fill the questionnaire before formal training. After five days of extensive training, the same questionnaire was re-administered to the participants to assess their improvement in knowledge and understanding about the concept of ADHD and teaching interventions. Statistically significant difference has been reported. Table 4.45 revealed that the value of ***t*** is 5.6 on teachers before and after training scores. Teachers' pre and post-training scores yielded statistically significant difference.

Based on the findings, various effective teaching interventions were devised which need to be tested experimentally so their effectiveness can be determined empirically in the classroom setting. Therefore, simple pre-test post-test experimental and control group design was applied to check the effectiveness of interventions.

Following two hypotheses were formed

1. There was no significant difference in the score of ADHD students of experimental group and control group on the classroom achievement test.
2. There was no significant difference in the score of ADHD students of experimental group and control group on the behavioural rating scale.

Effective teaching interventions for handling ADHD in classroom setting, include Instructional Management, Behavioral Management and Physical Management were taken as independent variables and better academic achievement. Managing disrupting behaviour of ADHDs includes improved attention span and minimization of distracted impulsive behaviour and they were taken as dependent variables

Furthermore, to check the effectiveness of teachers' training about proposed interventions on students' behaviour, the sample of 30 students of 8th class were taken from three public sector and one private sector elementary schools. The subject of English was taught by 2 teachers for three months' (one control group and one to experimental group). The teacher of experimental group provided training of teaching interventions (about ADHD students' academic performance and behavioural management). After three months' experimentation process, two tests were separately administered to participants of experimental and control groups. Achievement test was made for the measurement of academic achievement while 18 items behavioural rating scale was developed to see behavioural changes in ADHD students of experimental group. The statistical analysis was performed on results; it was found that performance of the 15 participants were marked improved than the performance of 15 participants of control group. From Table 4.59, it is clear that a significant difference can be seen on achievement test scores of the students of experimental and control groups who taught through traditional methods in comparison with those who were taught through interventions. Table 4.60 provides details of the differences in score of students of experimental and control groups (post interventions) on behavioral rating scale. Results are statistically significant at 0.02 level of significance. On the basis of the

findings of experimental study of phase II, it can be concluded that academic performance and behavioural management of ADHD students are possible if they are taught through instructional, behavioural and physical classroom management interventions simultaneously.

Literature also revealed a study which was conducted to find the effective implementation of different type of classroom-based interventions through the meta-analysis and systematic review by Harrison *et al.*, 2019. They have also found a positive outcome from the students having ADHD when effective interventions were implemented in elementary classrooms. Similarly, in another research, a randomized test of 58 school teachers and their students, after having web-based intervention about ADHD, showed positive results of the students (Corkum *et al.*, 2015).

5.4 Conclusions

In many cultural contexts, ADHD students are putting continuous efforts in their academics accompanied by teachers who are also struggling to address student's particular needs. Efforts were made only on medical treatments to cope with the behavioural problems of the students, without showing any attention related to the educational interventions which may have long-lasting consequences in students' academic career. Significance of teaching interventions is that if teachers are aware of these, they can fairly understand the reasons for behavioural problems of the students and will strive hard to develop important practical arrangements to deal with undesirable behaviour of students. There is a need to understand that major challenge is the behaviour of the students, and not the students themselves. When a teacher learns the challenging behaviour of students, he/she develops a healthy environment in the class to encourage the acceptable behaviour of students and puts all his effort to make unlearn the behaviour which is not demanding at all.

In the context of developed nations of the world, the research on the exploration of educational interventions for the ADHDs students is not new; however, in Pakistan, the context is the foremost thing.

The first objective of the study was to explore the extent of physical facilities at elementary schools. Results helped the researcher to conclude that physical conditions of most of the mainstream elementary schools were underprivileged.

The second objective of the study was to explore teachers' awareness about learning difficulties of elementary level students. Majority of teachers had a lack of awareness about ADHD / learning difficulties.

The third objective of the study was to explore the prevalence and behavioural problems of ADHD students of elementary level. From the responses of teachers, it was determined that the existence of ADHD is higher among students of elementary level.

Following types of behavioral problems were reported: students were disorganized during class work, were less focused on assigned tasks, were unable to sit at designated place for a longer period, were running around, were creating noises in the class during work, doing unnecessary talk during the teaching, and were showing over-reaction while dealing with other students of the class.

The fourth objective of the study was to measure teachers' demographic variations such as age, gender, qualification, sector, experience, teaching grade level and strength of the class in relation with the prevalence of ADHD students in their classes. From results, it was explored that teachers' demographic variations (gender, age, qualification, sector, experience, and teaching different grade level and class strength) influence their way of handling of ADHD. ADHD prevalence was higher in the classes of female teachers as compared to male teachers. The prevalence of ADHD students was higher in the classes of the younger teachers as compared to older ones. The prevalence of ADHD students was higher in the classes of less qualified and less experienced teachers, and it was higher in the public sector schools as compared to the private sector. Moreover, students of grade 7^{th} and 8^{th} were exhibiting more characteristics of ADHD as compared to students of grade 6^{th}. The presence of ADHD was higher in overcrowded classes as compared to class with average strength. In the private sector classrooms, conditions were better than the public sector schools.

The next objective of the study was to find out various challenges that are being faced by teachers in managing ADHD students at elementary level. Teachers facing challenges include: students' behavioral problems, a lack of discipline, a large number of students in the classes, lesson planning and time management issues.

Teachers of elementary classes had no proper training and awareness about management of ADHD students' behaviour. Based on their past experiences, they tried to control disruptive behavior through punishment and scolding. Only small percentage

of teachers was familiar with some educational interventions like peer tutoring with physical arrangement.

It has been concluded that interventions developed in the present study, would be effective for academic performance and behavioural management of ADHD students if they are taught through instructional, behavioural and physical classroom management interventions simultaneously.

5.5 Recommendations

Students having ADHD are unable to manage their academics and social life due to a lack of control over their behaviour and emotions. The teacher is the one who can recognize and identify the behavioural, emotional and learning problems of such students. After an extensive research and literature review, it has become clear that in our country teachers working in the elementary schools lack awareness of the concept of ADHD. This lack of awareness creates hardships in continuing education of such students effectively. Resultantly, they increase the quantity of school dropouts. Teachers' lack of awareness about ADHDs can be due to several reasons. The foremost reason is the lack of professional training about addressing the needs of ADHD in elementary classes. Training on this can enable teachers to address learning difficulties of such students well in time.

ADHD is a real problem for many students and their families due to its outcomes of behavioral, social and academic deficiencies. Information/knowledge about the management of students with ADHD can be valuable for the students, teachers and parents. If behavioral problems of such students are not taken seriously at an early stage, it may create difficulties for ADHDs, and also for the people around them. Therefore, concrete steps should be taken. Sometimes medication can also help, but one should remember that only through medication eradication of ADHD is not possible. For effective extinction of this behaviour integrated approach is required in which parents, teachers and the child himself can play a vital role. In the educational context, teaching interventions for the management of ADHD students can be useful before moving towards any type of medical treatment.

In the light of conclusions, some of the general recommendations are to improve the physical facilities of the classrooms; class size may not be more than thirty students. Before assigning duty to newly inducted teachers, it is necessary to brief them about individual differences of the students. Teachers may also be briefed about types of

learning difficulties and formulation of individual education plan of students with ADHD.

However, the following are some of the specific recommendations for parents, teachers and teachers' training institutions. (Although data were collected only from teachers and students, but in recommendations parents, teachers and teachers' training institutions were included since they are stakeholders in the process of education).

5.5.1 Recommendations for parents

1 Effective parenting has a dynamic role in the management of ADHD students; parents play a significant role in the overall personality development of their children. The lap of mother is the first institute for her child; it is the first and foremost duty of the parents that they may do a conscious effort to learn about the academic achievements and hardships of their children, understand the causes that aggravate the disruptive behaviour of their children

2 Family upbringing is one factor which could lead a child towards learning of ADHD. Parents are no doubt well-wishers of their offspring; they ought to observe keenly their children's behaviour. They also need to observe how their children are performing at home and school. If they feel some type of inconsistency in the behaviour and performance of their child, they may seek experts' guidance so that undesirable behaviour can be managed without unnecessary delay.

3 Normally a communication gap exists between parents and teacher. There may be less communication gap between parents, teachers and professionals who work together which can be more spirited. if any behavioral problem are reported at home, parents may seek the expert's advice from schools' teachers or counselors. Early detection and early interventions can be more fruitful for handling ADHD.

4 There are special needs and demands of students with ADHD as compared to normal students. Parents may try to understand what are the needs and demands of their ADHD child and should try to manage them accordingly. Parents can seek professional help of psychologists and counselors to learn various techniques such as patience and self-control. They may be ready for active participation in the management of their children's behaviour in an effective manner. This way, there may be less communication gap between parents and teachers.

5 In a few cases, medication can be used to enhance the performance of ADHD students significantly; therefore, parental awareness about medication is very necessary. Schools would provide help to parents to seek medication when it is required with teaching interventions.

Recommendations of the present study would be supportive for parents of ADHD to understand the needs of their children because parents can play a vital role along with teachers to cope with learning difficulties and behavioral management in a better way.

5.5.2 Recommendations for teachers

The teacher is the major element of the education system. The teacher is always considered as a better resource for knowledge, enthusiasm, affection, care and support for their students. Teachers need to formulate a strong relationship of trust, affection and care with their students. Today's classrooms have diversity with reference to languages, attitudes and behaviour especially. Teachers have to face all those diverse behaviours in the classrooms. For these teachers may have some strong observation in the class to identify the diversities, they may be able to handle those diversities. Before going to the management, one should be aware of the problem and its nature. Teachers may have some awareness about learning difficulties that students face during their classes which make them hard to learn anything.

1 The teachers may have a concern about learning difficulties in general and especially ADHD. Teachers should be more cognizant about ADHD issues of students, because they affect students mentally, physically and socially. Having appropriate knowledge, awareness, expertise and productive plan can enable teachers to manage students with ADHD in the elementary classroom.
2 The teachers can make efforts for effective learning of students by making them self-aware of their learning difficulties that they are facing during their educational course and hence make them cognizant of them to control them.
3 Class organization problems are most frequently observed issues faced by class teachers. These problems could be managed by teachers by providing advance organizers before the beginning of the class so that students stay on task and are organized. In the classroom, teachers also face several behavioural problems that affect the classroom teaching-learning process. Teachers can also solve behavioural problems by pre-telling students about their behavioural expectations. It is supposed that pre-telling would be very effective to control hyperactive behaviour of students.

4 For teachers, the important part is giving instructions to students. Teachers spend most of their time on giving instructions. The aim of giving instructions is to make clear to the students about what, why, where and how to do various tasks. If students do not understand what instructions, the teacher is giving to them then it's a worthless activity of giving instructions. The teacher must learn how to give instructions that are more effective and understandable for students, for these clear instructions may be provided in simple language to the students, a language which students can easily understand. The expectations must be stated clearly before giving any type of task so students may able to put their efforts to meet those expectations. Instructions may be in a logical and comprehensive way and in a loud voice that students can hear properly. How the teacher can know that student understands what he is saying? Hence, after giving instructions and before starting task, ask several questions to students what they are going to do.

5 The concentration of students who have some behavioural complications, for instance, disruptive, hyperactive, inattentive behaviour, are poor on the assigned task or assignment. The teachers may improve the concentration of such students by designing detailed schedule of every sub-tasks required for completion of the assigned activity and share it with the students and then follow that schedule. Thus the teachers may devise a pre-plan of every assigned activity to engage ADHD students in the classroom. As a teacher, we may know the normal span of attention of a normal student that varies from 10 to 20 minutes. Keeping in mind the span attention for normal student and learning difficulties of ADHD students, teachers may plan short breaks for the students for task completion so that monotony of class environment during the task could be reduced.

6 Observation is an activity that the teacher performs in the class during teaching in which the teacher observes to stay up-to-date about students and their behaviour. However, during the general observation when some or any symptoms of ADHD are found in any student, the class teacher may seek help from school counselor or psychologist.

7 Teachers ought to have constant contact with parents of ADHD students regarding the progress of their children in studies. Teachers can arrange parent-teacher meetings to minimize the communication gap with parents of students.

8 Self-awareness is also a very important thing for any human being. School teachers may impart self-awareness in students about indifferent behaviour through some activity for students such as learning skills, study skills and life skills, etc. and they can be instilled through interventions in children with ADHDs.

5.5.3 Recommendations for teachers' training Institutions

For the professional development of teachers, training is a necessary element and when there is a matter of knowledge about special focus, awareness and treatment of learning difficulty students, there is a need to properly train teachers to manage students with learning difficulties. After conducting this research, it becomes clear that ADHD is basically a difficulty that students face during class. ADHD is a difficulty that distracts individuals from the actual task, creates restlessness and impulsive behaviour. Several approaches have been suggested by the researcher that can be supportive for ADHD students to perform well in their life tasks. The role of teachers' training institutes is very crucial to train the teachers professionally. The responsibility of teachers' training institutes is to train the prospective teachers as they become advisers, coordinators and counselors for their students. This advisory teacher will regularly review the reports of students which will be given to them by students' subject teachers when they sense something troubled with their students. If the advisor feels a student has difficulty in learning, then he allows the student to stay in contact with the advisory teacher on a consistent basis in a planned way to keep a check on student's progress. The training program significantly improves the knowledge and attitudes of the teachers in the intervention group towards ADHD. Considerations may be given to incorporating ADHD training programs into teacher-training curricula, with regular reinforcement through in-service training. Equipping the teachers with behavioural interventions, the intervention of physical classroom accommodations, modified classroom seating arrangements, instructional tools and tactics to modify the classroom learning environment will help teachers a great deal.

In Pakistan, elementary school teachers usually have 14 years of formal education and degree in education (B. Ed/ M. Ed) which is related to general teaching and pedagogy. But these education degrees mainly focus on the normal student. There is very less focus on students with special needs like ADHD students. There are no specialized programs in Pakistan that can primarily target grooming of the ADHD students. It is very rare that an elementary classroom teacher will identify and

implement classroom intervention without prior training about ADHD. Hence, regardless of the moral and professional obligation of the elementary classroom teacher to integrate the children having ADHD in the regular classroom, no specialized training has been provided to Pakistan primary school teachers. However, the academic outcome of students having ADHD issues strongly depend on the elementary classroom teacher. Therefore, teachers should have more knowledge about ADHD causes, identification and management for the elementary classroom. Therefore, it is documented that an effective mechanism would be professional teacher training about ADHD. Hence resources should be made available for professionally educating on job teachers and future teachers so that students having ADHD issues could be included in the elementary classes. This process will create a more optimistic and conducive learning environment for ADHD students, which eventually lead to a conducive atmosphere where students with ADHD may have equal opportunities as normal students without labeling, humiliation and disrespectfulness.

5.6 Suggestions for Future Researchers

After conducting the research, the following are the suggestions for the future researchers.

1. The current study was based on the elementary level students only. Since ADHD can lead to certain fatal learning difficulties, therefore, it needs to be assessed at an early level. If it is detected at an earlier stage of learning, teachers can use certain interventions which can be helpful in removing learning difficulties. Thus the future research can be done at the primary level.
2. Due to the limited time available for the research study, the current study was delimited to Rawalpindi. Further research can be done to wider jurisdiction.
3. The further researches can be exploratory which could find underlying causes and reasons for ADHD students of public or private schools.
4. The present study was quantitative in nature, and questionnaires and rating scales were used to explore the phenomenon. In order to learn this phenomenon, in-depth qualitative research could also be done to learn about this phenomenon.
5. Several interventions were proposed in this study. Further researches in this area can plan longitudinal study so that long term effects of interventions can be determined.

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APPENDICES

Appendix-A

DIAGNOSTIC PLAN FOR ADHD STUDENTS (FROM DSM- V)

Student name: _____

School sector a) Public b) Private

School Type . a) special school b) mainstream.

Class level a) 6th b) 7th c) 8th

Please answer these below statements specifically to your class

Does the child with ADHD in your class:

Inattention:

- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
- Often has trouble holding attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
- Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted
- Is often forgetful in daily activities.

Hyperactivity and Impulsivity:

- Often fidgets with or taps hands or feet, or squirms in seat.
- Often leaves seat in situations when remaining seated is expected.
- Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless.
- Often unable to play or take part in leisure activities quietly.
- Is often "on the go" acting as if "driven by a motor".
- Often talks excessively.
- Often blurts out an answer before a question has been completed.
- Often has trouble waiting his/her turn.
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

Appendix-B

ELEMENTARY SCHOOL TEACHERS' DEMOGRAPHIC INFORMATION

NOTE: Kindly read this questionnaire carefully and Fill in the questionnaire. Tick the most appropriate level in your opinion. I assured you that this information will be kept confidential and only used for research purposes.

1. Gender:

a) Male ☐ b) Female ☐

2. Age: ____ years.

3. Teachers' Qualification (ordinary/general):

a). Certificate ☐ b). Diploma ☐ c). BA/B. Sc ☐ d). M.A/ M.Sc ☐

4. Special Education:

a). Certificate ☐ b). Diploma ☐ c). Specialization ☐

5. Type of school in which you are teaching:

a). Public ☐ b). Private ☐

6. Your experience as a teacher in mainstream education, in years:

a). Inexperienced ☐ b). 1 year ☐ c). 2-5 years ☐ d). 6-10 years ☐ e). over 10 years ☐

7. Which standard/grade do you teach?

a) 6^{th} ☐ b) 7^{th} ☐ c) 8^{th} ☐

8. Average number of pupils in the classes you teach

a) 20-30 ☐ b) 31-40 ☐ c) 41- 50 ☐

Appendix-C

QUESTIONNAIRE FOR TEACHERS' AWARENESS ABOUT ADHD STUDENTS

NOTE: Kindly read this questionnaire carefully and fill in the questionnaire. Tick the most appropriate level in your opinion (only select one of available choices). I assure you that this information will be kept confidential and only used for research purposes.

1. Have you had students with learning difficulties in your class?

Yes ☐ No ☐

2. How do you describe your classroom conditions?

Excellent ☐ Good ☐ Fair ☐ Insufficient ☐

3. What kind of student(s) with learning difficulties have you experienced in your class?

a) Auditory Processing Disorder (APD) (difficulty in perceiving auditory information)

b) Dyscalculia (difficulty in making arithmetical calculations)

c) Dysgraphia (inability to write articulately/ logically)

d) Dyslexia (reading disorder)

e) Language Processing Disorder (LPD) (children will have trouble understanding and making sense of the words they hear)

f) Non- Verbal Learning disability (NVLD) (trouble understanding communication that isn't verbal. That includes body language, tone of voice and facial expressions)

g) Visual Perceptual/Visual Motor Deficit (Affects the understanding of information that a person sees, or the ability to draw or copy)

h) Dyspraxia (difficulty in activities requiring coordination and movement.)

i) Memory (difficulty to store and retrieve information required to carry out tasks)

j) Attention Deficit Hyperactivity Disorder (ADHD): ADHD is a disorder that includes difficulty in staying focused and paying attention, difficulty in controlling behaviour and hyperactive

4. Are you ready to accept pupils with learning difficulty of ADHD in your classroom?

Yes ☐ No ☐

5. How would you rate your knowledge and skills for teaching students with learning difficulty of ADHD?

a) Excellent

b) Good

c) Fair

d) Unsatisfactory

6. When the students having ADHD have been identified?

a) In classroom

b) During the lecture

c) During performing task

d) During playing

e) While discussion session

7. Do you have any training to deal with students having ADHD? If yes, then explain the nature and duration of your training?

a) NO

b) YES

c) Nature

d) Duration

8. What challenges do you face on a daily basis regarding having children with ADHD in your classroom?

a) Discipline?

b) Lesson Planning?

c) Size of the class?

d) Time management?

e) Assistance or support?

f) Other?

9. Which type of symptoms do you find in ADHD students?

a) Be disorganized

b) Lack of focus

c) Get up frequently to walk or run around

d) Have trouble playing quietly or doing quiet hobbies

e) Talk excessively

f) Impatience

g) Having a hard time waiting to talk or react

h) Have a hard time waiting for their turn

i) Start conversations at inappropriate times

Appendix-D

QUESTIONNAIRESFOR TEACHERS' AWARENESS ABOUT PREVALENCE OF STUDENTS WITH ADHD IN ELEMENTARY CLASSROOMS

Attention Deficit Hyperactivity Disorder (ADHD) is a disorder that includes difficulty in staying focused and paying attention, difficulty in controlling behaviour and hyperactive.

Name of Student: _____ Class: _____

Please mark your response against the given items related to ADHD. Your response will be treated in strict confidence. Rate each item based on the scale below. For each given item mark in the appropriate column of scores from 1-5 to represent your choice from the scale.

1 = Never 2 = Rarely 3=Sometimes 4 = Often 5 = Very Often

Have you identified pupils in your class who

	Inattentive					
1.	Do not give close attention to details.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
2.	Make careless mistakes in schoolwork, work, or other activities.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
3.	Has trouble keeping attention on tasks or play activities.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
4.	Do not seem to listen when spoken to directly.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
5.	Do not follow instructions	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

6.	Fail to finish schoolwork, tasks, or duties in the workplace	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
7.	Have a trouble in organizing activity.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
8.	Do not want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
9.	Lose things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
10.	Easily distracted.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
11.	Forgetful in daily activities.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Hyperactivity					
12.	Fidgets with hands or feet or squirms in seat.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
13.	Gets up from seat when remaining in seat is expected.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
14.	Run about or climb when and where it is not appropriate (adolescents or adults may feel very restless).	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
15.	Have trouble playing quietly or enjoying leisure activities quietly.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
16.	Is "on the go" or acts as if "driven by a motor".	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Impulsivity					
17.	Talks excessively.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

18. Blurts out answers before questions have been finished.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
19. Have trouble waiting for one's turn.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
20. Interrupt or interfere with others conversation.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

Thank you very much for answering this questionnaire!

Appendix-E

QUESTIONER RELATED TO INTERVENTIONS USED BY TEACHERS TO MANAGE STUDENTS HAVING ADHD IN ELEMENTARY CLASSROOMS

1. How do you manage students with inattention problem, please mark on relevant options?

1. Capture Students' Attention before Giving Directions
2. Class Participation: Keep Students Guessing
3. Employ Proximity Control
4. Give Clear Directions
5. Give Opportunities for Choice
6. Provide a Quiet Work Area
7. Provide Attention Breaks
8. Reduce Length of Assignments
9. Select Activities That Require Active Student Responding

2. How do you manage students with hyperactivity problem, please mark on relevant options?

1. Give the student a break
2. Provide opportunities for the student to release excess energy
3. Allow the student to manipulate objects at her desk
4. Set up a workspace for the student
5. Establish a signal to cue a student that she is out of her seat

3. How do you manage students with Impulsivity problem, please mark on relevant options?

1. Recognizing emotions

2. Regulating emotions and related behaviour
3. Developing positive attitudes
4. Listening to others
5. Provide opportunities for the expression of physical activities.

4. What type of Educational Interventions you used, please mark on relevant options.

1. Physical arrangement
2. Varied presentation of format and materials
3. Use of cues, prompts, and attention checks
4. Brief academic tasks interspersed with passive tasks
5. Peer tutoring
6. Teacher attention
7. Token economy
8. Response cost
9. A time-out from positive reinforcement
10. Home-based contingencies

Appendix-F

ELEMENTARY SCHOOLS' STUDENTS DEMOGRAPHIC INFORMATION

Name: _____

Class: a) 6th ☐ b) 7th ☐ c) 8th ☐

Gender: a) Male ☐ b) Female ☐

Sector: a) Public ☐ b) Private ☐

Father's Qualification:

a) Middle ☐ b) Matric - BA/BSc ☐ c) Master ☐

d) M. Phil ☐ e) PhD ☐

Mother's Qualification: a) 5-8 ☐ b) 9-12 ☐ c) 13-16 ☐

Father's Profession: a) Govt. job ☐ b) private business ☐

Mother's Profession: a) House wife ☐ b) Working lady ☐

Family Monthly Income:

a) 36000-40000 ☐

b) 40000-50000 ☐

c) 50000-60000 and more ☐

Number of Siblings:

a) Less than 3 ☐

b) 3-5 ☐

c) 5-7 ☐

d) More than 7 ☐

Appendix-G

URDU VERSION OF ELEMENTARY SCHOOLS' STUDENTS DEMOGRAPHIC INFORMATION

مین سٹریم ایلیمنٹری اسکولوں کے طالبعلموں کی آبادیاتی معلومات

ایلیمنٹری اسکولوں کے طالبعلموں میںADHD کی شناخت کا سوالنامہ

کلاس: ☐ 6th (a ☐ 7th (b ☐ 8th (c

صنف: ☐ Male (a ☐ Female (b

سیکٹر: ☐ Public (a ☐ Private (b

والد کی تعلیم

☐ Middle (a ☐ Matric - BA/BSc (b ☐ Master (c

☐ M.Phile (d ☐ PhD (e

والدہ کی تعلیم

☐ 5-8 (a ☐ 9-12 (b ☐ 13-16 (c

والد کا پیشہ:

☐ Govt. job (a ☐ Private business (b

والدہ کا پیشہ:

☐ House wife (a ☐ Working lady (b

خاندان کی ماہانہ آمدنی:

☐ 36,000-40,000 (a

☐ 40,000-50,000 (b

☐ 50,000-60,000 and more (c

بہن بھائیوں کی تعداد:

☐ Less than 3 (a

☐ 3-5 (b

☐ 5-7 (c

☐ More than 7 (d

Appendix-H

A SELF- AWARENESS QUESTIONNAIRE FOR STUDENTS ABOUT THE EXTENT OF THEIR ADHD BEHAVIOUR IN CLASSROOM

Please tick the number next to each item that best describes your behaviour. Simply answer the questions on how you have behaved and felt **during the past 6 months**. Take your time and answer truthfully for the most accurate results.

1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often

Statements

Inattention

1-	I have difficulty in sustaining my attention while doing homework.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
2-	I cannot focus my attention during lectures.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
3-	I only concentrate for a short while during lectures.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
4-	I lose concentration during lengthy reading.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
5-	My attention redirects due to external influence.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
6-	After hearing any noise distraction, I can focus on my task.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
7-	After having any visual distraction, I change my attention.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
8-	I avoid, to engage in tasks that require continues effort	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
9-	I have trouble listening to someone, even when they are speaking directly to me (like my mind is somewhere else).	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
10-	I can’t manage my study time.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
11-	I fail to meet deadlines	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
12-	I fail to give close attention to details	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
113-	I do careless mistakes while doing homework.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
14-	I often misplace/damage things that are necessary in order to complete the task.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
15-	I get bored easily during performing academic tasks.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

16-	I prefer to sit at the back of the classroom.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
117-	I do not want to contribute to in-class discussion.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
18-	In the morning, I often come late to my classroom.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
19-	I get upset while learning new things	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
20-	I would like to work on more than one project at a time.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
21-	I am unable to accomplish the assigned tasks due to work overload.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
22-	Sometimes my mind gets messy that it is hard for it to function.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
23-	I am a daydreamer.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Hyperactive					
24-	It is hard for me to sit quietly during the period.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
25-	I am more comfortable when moving rather than sitting still.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
26-	I would like to talk excessively.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
27-	Often, I give statement on (issue, topic or happening) without thinking, later feel regret.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
28-	I cannot play quietly.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
29-	I make quick decisions without thinking enough about the consequences.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
30-	Often, I feel trouble in prioritizing the tasks.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
31-	I become upset easily.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
32-	Even when sitting quietly, I am usually moving my hands or feet.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Impulsivity					
33-	My brain feels as if it is a television set with all the channels going at once.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
34-	I am a poor planner.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

35-	In group activities, it is hard for me to wait for my turn.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
36-	I love to interrupt friends while they are doing their work.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**

Thank you very much for answering!

Appendix-I

URDU VERSION OF SELF – RATING QUESTIONNAIRE FOR STUDENTS ABOUT EXTENT OF THEIR ADHD BEHAVIOUR IN CLASSROOM

طالب علموں کا اپنی کلاس میں رویے کے بارے میں درجہ بندی سوالنامہ

براہ کرم ہر تحریر کے سامنے درج نمبر پر نشان لگائیں جو آپ کے رویے کی بہترین نمایندگی کرتی ہے۔ آپ نے اپنے گزشتہ 6 ماہ کے دوران رویے کے برتاو اور احساس کے بارے میں سوالات کا جواب دینا ہے۔ آپ درکار وقت لیں اور سب سے زیادہ درست نتیجے کا انتخاب کریں۔

1= کبھی نہیں 2= شاذو نادر 3= کبھی کبھار 4= اکثر 5= بہت اکثر

S.NO.	Statements					
1	ہوم ورک کے دوران مجھے توجہ کو برقرار رکھنے میں مشکل درپیش ہے۔	(1)	(2)	(3)	(4)	(5)
2	میں لیکچر کے دوران اپنی توجہ مرکوز نہیں کر سکتا۔	(1)	(2)	(3)	(4)	(5)
3	میں لیکچر کے دوران صرف تھوڑی دیر کے لیے اپنی توجہ مرکوز کرسکتا ہوں۔	(1)	(2)	(3)	(4)	(5)
4	میں طویل پڑھائی کے دوران توجہ کھو دیتا ہوں۔	(1)	(2)	(3)	(4)	(5)
5	میری توجہ بیرونی اثرورسوخ کی وجہ سے تبدیل ہوتی ہے۔	(1)	(2)	(3)	(4)	(5)
6	کسی بھی شور کی مداخلت سننے کے بعد میں اپنے کام پر توجہ مرکوز کر سکتا ہوں۔	(1)	(2)	(3)	(4)	(5)
7	کسی بھی بصری مداخلت کے بعد میں اپنی توجہ تبدیل کر دیتا ہوں۔	(1)	(2)	(3)	(4)	(5)
8	میں ان کاموں سے بچتا ہوں جن میں مستقل کوشش جاری رکھنے کی ضرورت ہے۔	(1)	(2)	(3)	(4)	(5)
9	مجھے کسی کو سننے میں دشواری ہے ، یہاں تک کے جب وہ مجھ سے براہ راست بات کر رہے ہوں ، جیسے میرا ذہن کہیں اور ہے۔	(1)	(2)	(3)	(4)	(5)
10	میں اپنے مطالعہ کے وقت کا انتظام نہیں کر سکتا ہوں۔	(1)	(2)	(3)	(4)	(5)
11	میں ڈیڈلائن کو پورا کرنے میں ناکام ہوں۔	(1)	(2)	(3)	(4)	(5)
12	میں تفصیلات پر قریبی توجہ دینے میں ناکام ہوں۔	(1)	(2)	(3)	(4)	(5)
13	میں ہوم ورک کے دوران لاپرواہ غلطیاں کرتا ہوں۔	(1)	(2)	(3)	(4)	(5)
14	میں اکثر کام مکمل کرنے کے لیے درکار اشیا کو کھو رنقصان پہنچا دیتا ہوں۔	(1)	(2)	(3)	(4)	(5)
15	میں تعلیمی کاموں کو انجام دینے کے دوران آسانی سے بور ہو جاتا ہوں۔	(1)	(2)	(3)	(4)	(5)
16	میں کلاس روم کے پیچھے بیٹھنا پسند کرتا ہوں۔	(1)	(2)	(3)	(4)	(5)
17	میں کلاس کے دوران بحث و مباحثہ میں حصہ نہیں لینا چاہتا ہوں۔	(1)	(2)	(3)	(4)	(5)
18	صبح میں اکثر اپنے کلاس روم میں دیر سے آتا ہوں۔	(1)	(2)	(3)	(4)	(5)
19	میں نئی چیزیں سیکھنے کے دوران پریشان ہوتا ہوں۔	(1)	(2)	(3)	(4)	(5)
20	میں ایک وقت میں ایک سے زیادہ پروجیکٹ پر کام کرنا چاتا ہوں۔	(1)	(2)	(3)	(4)	(5)

21	میں کام کے اوور لوڈ کی وجہ سے تفویض کردہ کاموں کو پورا کرنے میں ناکام ہوں۔	(1)	(2)	(3)	(4)	(5)
22	کچھ عرصے سے میرا دماغ پراگندا ہو جاتا ہے کہ یہ کام کرنے کے لئے مشکل ہے۔	(1)	(2)	(3)	(4)	(5)
23	میں دن میں خواب دیکھنے والا ہوں۔	(1)	(2)	(3)	(4)	(5)
24	میرے لئے کلاس کے دوران خاموشی سے بیٹھنا مشکل ہے۔	(1)	(2)	(3)	(4)	(5)
25	میں آرام سے بیٹھنے کی بجائے حرکت میں زیادہ آرام محسوس کرتا ہوں۔	(1)	(2)	(3)	(4)	(5)
26	میں ضرورت سے زیادہ بات کرنا چاہوں گا۔	(1)	(2)	(3)	(4)	(5)
27	اکثر میں سوچ کے بغیر (مسئلہ ،موضوع یا وقعہ) پر بیان دیتا ہوں ، بعد میں افسوس محسوس کرتا ہوں۔	(1)	(2)	(3)	(4)	(5)
28	میں خاموشی سے کھیل نہیں سکتا۔	(1)	(2)	(3)	(4)	(5)
29	میں نتائج کے بارے میں کافی سوچ کے بغیر فوری فیصلے کرتا ہوں۔.	(1)	(2)	(3)	(4)	(5)
30	اکثر اوقات مجھے مقررہ کاموں کو ترجیح دینے میں مشکل محسوس ہوتی ہے۔	(1)	(2)	(3)	(4)	(5)
31	میں آسانی سے پریشان ہو جاتا ہوں۔	(1)	(2)	(3)	(4)	(5)
32	یہاں تک کہ جب خاموشی سے بیٹھے ،میں عام طور پر اپنے ہاتھوں یا پیروں کو حرکت دیتا ہوں۔	(1)	(2)	(3)	(4)	(5)
33	میرا دماغ اس ٹیلی ویژن کی طرح محسوس ہوتا ہے کہ ایک ہی وقت میں تمام ٹیلی ویژن چینلز آن ہیں۔	(1)	(2)	(3)	(4)	(5)
34	میں منصوبہ سازی میں کمزور ہوں۔	(1)	(2)	(3)	(4)	(5)
35	گروپ کی سرگرمیوں میں میرے لئے اپنی باری کا انتظار کرنا مشکل ہے۔	(1)	(2)	(3)	(4)	(5)
36	مجھے اپنے دوستوں کو پریشان کرنا پسند ہے جب وہ اپنا کام کر رہے ہوں۔	(1)	(2)	(3)	(4)	(5)

آپ کے جوابات دینے کا شکریہ

Appendix-J

SELF-REPORT QUESTIONNAIRE FOR TEACHERS BEFORE AND AFTER TRAINING BASED ON KNOWLEDGE OF ADHD AND TEACHING INTERVENTIONS FOR ADHD STUDENTS

Please tick the answer to the following questions with Y (yes), N (No), and DK (Don't Know)

S.No	Items	Yes	No	Don't Know
1.	Do you have any training to deal with students having ADHD?			
2.	Have you any idea about the learning difficulty of students?			
3.	Have you ever experienced students with a learning difficulty in your class?			
4.	Have you sufficient knowledge and skills for teaching students with learning difficulty of ADHD			
5.	Are you aware of any guidelines related to ADHD?			
6.	Most estimates suggest that ADHD occurs in approximately 15% of school-age children.			
7.	A child can be appropriately labeled as ADHD and not necessarily present as over-active.			
8.	ADHD children always need a quiet, sterile environment in order to concentrate on tasks.			
9.	ADHD children misbehave primarily because they don't want to follow rules and complete assignments.			
10.	Inattention of ADHD children is not primarily a consequence of rebelliousness but unwillingness to please others.			
11.	ADHD occurs equally in girls as boys.			
12.	ADHD is a medical disorder that can only be treated with medication.			
13.	ADHD children could do better if they only would			

	try harder.			
14.	ADHD students can be treated by providing proper instructions			
15.	If medication is prescribed, educational interventions are often unnecessary.			
16.	Most ADHD children outgrow their disorder and are as normal as adults.			
17.	ADHD can be inherited.			
18.	If a child can get excellent grades one day and awful grades the next, then he must not be ADHD.			
19.	Diets are usually not helpful in treating most children with ADHD.			
20.	Do you have any idea about teaching interventions?			
21.	Personally, do you feel that there is a need for knowledge enrichment for quality handling with students of ADHD?			
22.	Is there a need to establish clear guidelines to teachers for quality handling of ADHD students			
23.	teachers training is very important for a better understanding of students behaviour			
24.	ADHD children are typically better behaved in 1-to-1 interactions than in a group situation.			
25.	Praising students on positive behaviour is necessary to get desirable output			
26.	Students undesirable behaviour can be managed by just ignoring the specific unsuitable behaviour			
27.	The attention of students can be gained by removing distracter from surroundings			
28.	Monotony in work can also make students pay less attention to the task			
29.	Undesirable behaviour of ADHD students can be handled by giving those cues or by showing some gestures.			
30.	ADHD can be minimized if student seated near to			

	teacher in the class			
31.	Cooperative learning is also a best activity for the handling of ADHD students			
32.	Visual aid is more effective along with the audio to give instructions to ADHD students			
33.	Use of difficult words for instructions, enhance the possibility of the distraction of thoughts of students			
34.	The positive form of instructions creates positive behaviour while a negative form of instructions creates a negative behaviour.			
35.	Use of interventions is necessary during exams only.			
36.	Results of ADHD students can be improved by giving them little extra time to solve test			
37.	Too much difficulty test can affect the grading of students			
38.	To attempt assignment flexibility in time be produced to ADHD students			
39.	Students with ADHD face difficulty in organizing things.			
40.	In order to manage ADHD students' tasks, daily, weekly and monthly planners, can be effectively used.			

Appendix-K

PRE AND POST INTERVENTIONS STUDENT'S BEHAVIOURAL SCALE FOR STUDENTS

Please tick the number next to each item that best describes your behaviour. Simply answer the questions keeping in view your **past** 3 months behaviour**.** Use five point rating scale for description of intensity of specific behaviour.

1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often

S.No	Statements	1	2	3	4	5
1.	I cannot be seated quietly during class.					
2.	I often forget paper and pen for taking notes.					
3.	My desk is full of unneeded things.					
4.	I feel difficulty while working on the assigned task attentively.					
5.	I cannot sit quietly while working.					
6.	I cannot sit straight during the lecture.					
7.	I abruptly raised my hand and unable to wait when teachers asked me a question.					
8.	I cannot avoid distraction and engage myself in playing (with objects at desk) during class.					
9.	I am generally unable to give full attention while giving class room test.					
10.	I lost focus during lecture.					
11.	I generally lost concentration during lengthy readings.					
12.	I Have no trouble in listening instructions.					
13.	I give close attention to details.					

14.	I cannot avoid careless mistakes while doing class work.					
15.	I have never damage necessary things while completing assigned tasks.					
16.	I often enjoy academic tasks.					
17.	I usually prefer to sit at front benches in my classroom.					
18.	I want to contribute in-class discussion.					
19.	I become very happy while learning new things.					
20.	I able to work on more than one project at a time.					
21.	I have clear ideas about my subjects.					
22.	I actively participate in class activities.					
23.	I feel more comfortable in sitting rather than roaming around the class.					
24.	I feel comfortable in prioritizing the tasks.					
25.	I am confident in my classroom behavior appropriateness.					
26.	I have lack of control on my hands and feet and engaged in unnecessary movements.					
27.	I am good planner.					
28.	I cannot easily wait for my turn.					

Appendix-L

QUESTIONER FOR TEACHERS TO CHECK EFFECTIVENESS OF PROPOSED INTERVENTIONS

Please encircle **one intervention for each question** that best describes your response.

1	**What type of *instructional interventions* is most effective for ADHD students in classrooms?**
	1. Provide instructions by using possible tools and technology for a visual aid to ADHD students 2. List detailed stepwise instructions on board 3. Use specific, brief and easy words for instructions 4. Encourage ADHD students to repeat stated instructions in their own words 5. Make frequent direct eye contacts with ADHD students during delivering instructions 6. Structure tasks into small sub-tasks for ADHD students
2	**What type of *behavioural interventions* is most effective for ADHD students in classrooms?**
	1. Having frequent effective verbal praise for the ADHD students on showing positive behaviour 2. Overlook the specific behavioural disruptive form the ADHD students 3. Minimize the potential choices of distraction from the classrooms 4. Give ADHD students reward after every successful completion of the task 5. Engage ADHD students in constructive physical activities 6. Use personal visual signals (gentle hand tap, color cards, head gestures) on undesirable behaviour of ADHD student
3	**What type of *physical management interventions* is most effective for ADHD students in classrooms?**
	1. Change ADHD student seating arrangement daily 2. ADHD student should be seated close proximity to the teacher 3. ADHD student could be seated with encouraging and sympathetic classmates 4. Students with ADHD not allowed to seat near windows and doors. 5. Physical facilities must be available. 6. Sound proof classroom

Appendix-M

ACHIEVEMENT TEST FOR PRE AND POST TESTING TO CHECK THE EFFECT OF PROPOSED INTERVENTIONS ON STUDENTS' ACHIEVEMENT

English **Class 8th** **Time: 2 hours 45 minutes**
Part A: 48 Marks **Part B: 52 Marks** **Total Marks: 100**
Student Name:
General Instructions:

1. Read carefully and attempt all questions
2. Encircle the correct option of each of the Multiple Choice Questions (MCQs) as shown in the example given below.
3. Example: He is_____ to School
   a) goes b) went
   c) going d) go
4. Use of lead pencil is not allowed
5. If more than one option is circled, no mark will be given

Part- (Multiple Choice Questions) **Time Allowed: 1 hour 15 Minutes**

Part- A (48 Marks)

Instructions: 32 questions are given in this part. Each question carries 1.5 Marks.

Q No. 1. The principal of the school was engaged in_____
1. Practical
2. Fight
3. Magic show*
4. Meeting

Q No. 2. A strange looking man was wearing_____color coat
1. Red
2. White
3. Black*
4. Green

Q No. 3. The man was holding_____ in his hands
1. Bag
2. Mug
3. Stick*
4. Shopper

Q No. 4. He wanted to amuse children with_____
1. Dance
2. Songs
3. Magic tricks*
4. Style

Q No. 5. The box is cut into_____pieces
1. 3
2. 2*
3. 4
4. 5

Q No. 6. The person in a box is_____

1. Gardener
2. Student
3. Helper*
4. Peon

Q No. 7. ._____ is sitting on magician head when he removes the hat.

1. Bird
2. Parrot
3. Sparrow
4. Pigeon*

Q No. 8. Magician borrows_____ from one of the audience.

1. Knife
2. Bottle
3. Money
4. Handkerchief*

Q No. 9. Magician puts ring on his_____

1. Finger
2. Ankle
3. Palm*
4. Thumb

Q No. 10. From where the ring was found_____

1. Room
2. Pocket
3. Box*
4. Bag

Q No. 11. Lo and behold means

1. Happy
2. Catch
3. Surprise*
4. Scream

Q No. 12. We tell from the events described in the poem “The Twins” that the speaker

1. Had a challenging life
2. Made many mistakes
3. Did poorly in schools
4. Never had any friends

Q No. 13. The theme of the poem “the twins” deals with

1. Shortness of life
2. Need for companionship
3. Loss of identity
4. Power of destiny

Q No. 14. In what aspects were the brother alike each other

1. Height
2. Hair style
3. Face and limb*
4. Physique

Q No. 15. What name the speaker get in the poem “The twins”

1. Joseph
2. Charles
3. Henry*
4. Tom

Q No. 16. How did the speaker suffer at school?

1. Fined
2. Terminated
3. Flogged
4. Slapped

Q No. 17. What is impossible for neighbors in last two lines of the poem "The Twins"

1. To help speaker's brother
2. To bury speaker's brother*
3. To save speaker's brother
4. To punish speaker's brother

Q No. 18. What is the name of speaker's brother?

1. Joseph
2. Jones*
3. Messi
4. Troat

Q No. 19. Who mixed the twins in the poem " the twins"

1. Mother
2. Doctor
3. Nurse*
4. Father

Q No. 20. The poem "The twins" is written by

1. Coleridge
2. Words worth
3. Henry Leigh*
4. Robert Frost

Q No. 21. A woodcutter had_____children

1. 5
2. 4
3. 3
4. 7*

Q No. 22. Why was the youngest son called Mirchu?

1. Size of a Nut
2. Size of a pepper*
3. Size of a marble
4. Size of a ball

Q No. 23. Who caused the parents the utmost anxiety?

1. The Eldest son
2. The youngest son*
3. The oldest son
4. None of the above

Q No. 24. Why there was nothing to eat?

1. No rain for months*
2. No work for months
3. No money
4. No one to cook

Q No. 25. We must leave our children in _____

1. Zoo
2. City

3. Village
4. Forest*

Q No. 26. What spread across the village?

1. Storm
2. Flood
3. Plague
4. Famine*

Q No. 27. She wished that she only had _____ children

1. 2
2. 4
3. 3*
4. 7

Q No. 28. Young boy filled his pocket with _____

1. White Stones*
2. Marbles
3. Coins
4. Seeds

Q No. 29. What did the wood cutter ask the boys to do?

1. To collect stones
2. To cut grass
3. To collect small branches*
4. To clean axe

Q No. 30. Who led the boys in deep forest?

1. Father
2. Mother
3. Eldest son
4. Youngest son*

Q No. 31. What did woodcutter and his wife found after coming back from forest.

1. Gold coins
2. Silver coins*
3. White coins
4. Bronze coins

Q No. 32. My poor sons would be eaten by _____ in forest.

1. Lion
2. Tiger
3. Snake
4. Wolf*

Test (English) **Class 8th** **Time: 3 hours**
Part A: 48 Marks **Part B: 52 Marks** **Total Marks: 100**
Student Name:
General Instructions:

1. Read carefully and attempt all questions
2. A question can consist of two or more parts
3. Additional pages will be given for writing
4. Students are allowed to use both blue/ black ink only
5. Use of lead pencil is not allowed

Part-B Open ended questions **Time Allowed: 1 hour 30 Minutes**

Part- B (52 Marks)

Q No. 33. Write a paragraph of ten sentences on 'Magic Show' you have ever seen. Use correct punctuation, grammar and spelling. **(12)**

Following hints may give you some idea but you are free to use your own ideas.

- Where it was held?
- How many magicians were there?
- What magic tricks did they show to you?
- What was the most important thing about the show?
- What do you feel about the magician and the show?

Q No. 34. You have spent summer holidays with your friend. Write a letter to your friend thanking him for his hospitality. Use correct punctuation, grammar and spelling. **(10)**

Following hints may give you some idea but you are free to use your own ideas.

- Express your gratitude
- Share the memorable events
- Invite him to visit you

Q No. 35. How many tricks did the magician show? Also state that what was the most interesting thing about the show **(10)**

Q No. 36. Write down the summary of the poem "The Twins" in about 15 to 20 lines in your own words. Also, suggest another humorous title. **(10)**

Q No. 37. What type of son is clever Mirchu? Illustrate with examples. **(10)**

Appendix-N

PRE-TESTING ACHIEVEMENT TEST MARKS SHEETS BEFORE DIVIDING INTO CONTROLLED AND EXPERIMENTAL GROUP

S.No.	Achievement Test Marks
1	12
2	28
3	17
4	12
5	26
6	29
7	31
8	21
9	28
10	18
11	22
12	15
13	14
14	14
15	27
16	25
17	16
18	21
19	28
20	16
21	16
22	18
23	11
24	30
25	19
26	27
27	20
28	20
29	31
30	21

Appendix-O

PRE-TESTING MARKS SHEET OF CONTROL GROUP AND EXPERIMENTAL GROUP

S. No	Control Group
1.	12
3.	17
5.	26
7.	31
9.	28
11.	22
13.	14
15.	27
17.	16
19.	28
21.	16
23.	11
25.	19
27.	20
29.	31
S. No.	**Experimental Group**
2.	28
4.	12
6.	29
8.	21
10.	18
12.	15
14.	14
16.	25
18.	21
20.	16
22.	18
24.	30
26.	27
28.	20
30.	11

Appendix-P

POST-TESTING MARKS SHEET OF CONTROL GROUP AND EXPERIMENTAL GROUP

S. No	Control Group
1.	14
3.	18
5.	30
7.	32
9.	27
11.	21
13.	15
15.	27
17.	18
19.	28
21.	17
23.	13
25.	21
27.	25
29.	32
S. No	**Experimental Group**
2.	57
4.	51
6.	45
8.	62
10.	70
12.	59
14.	50
16.	74
18.	48
20.	58
22.	81
24.	73
26.	49
28.	53
30.	64

Appendix-Q

RESPONSES OF ELEMENTARY SCHOOL TEACHERS SCORES AFTER TRAINING OF INTERVENTIONS

The major type of interventions for Teachers	Detail of interventions	Teacher' Response (%)
Instructional Interventions	1. Provide instructions by using possible tools and technology for a visual aid to ADHD students	3
	2. List detailed stepwise instructions on board	25
	3. Use specific, brief and easy words for instructions	10
	4. Encourage ADHD students to repeat stated instructions in their own words	13
	5. Make frequent direct eye contacts with ADHD students during delivering instructions	45
	6. Structure tasks into small sub-tasks for ADHD students	4
Behavioural Interventions	1. Having frequent effective verbal praise for the ADHD students on showing positive behaviour	39
	2. Overlook the specific behavioural disruptive form the ADHD students	4
	3. Minimize the potential choices of distraction from the classrooms	21
	4. Give ADHD students reward after every successful completion of the task	6
	5. Engage ADHD students in constructive physical activities	17
	6. Use personal visual signals (gentle hand tap, color cards, head gestures) on undesirable behaviour of ADHD student	13
Physical management Interventions	1. Change ADHD student seating arrangement frequently	19
	2. ADHD student may be seated at front / near to class teacher	32
	3. ADHD student could be seated with encouraging and sympathetic classmates.	49
	4. ADHD students could also be seated along outstanding classmates.	18
	5. Students with ADHD may not be seated near windows and doors.	25
	6. Classrooms conditions must be conducive	22
	7. In terms of physical facilities; sound proof classroom can minimize disturbance.	29

Furthermore, to check the most effective intervention form the proposed interventions for the teachers of elementary schools to manage ADHD student in classes, the questionnaire was developed by using DSM-V. The responses of teachers after the real-time application of proposed classroom interventions were obtained and tabulated as shown in Table 4.62.

From teachers' responses regarding instructional intervention group, intervention number 5 "Make frequent direct eye contacts with ADHD students during delivering instructions" was considered most effective having 45%. The second most effective intervention was considered as intervention number 2 "List detailed stepwise instructions on board" with 25%. The third most effective intervention was considered as "Encourage ADHD students to repeat stated instructions in their own words" with 13%. Similarly, in the Behavioral interventions group, the top most effective intervention was considered as number 1 "Having frequent effective verbal praise for the ADHD students on showing positive behaviour" with 39%.

The second most effective intervention was considered as number 3 "Minimize the potential choices of distraction from the classrooms" with 21%. The third most effective intervention was considered as number 5 "Engage ADHD students in constructive physical activities" with 17%. Moreover, from Physical management interventions group, the top effective intervention was number 3 intervention "ADHD student could be seated with encouraging and sympathetic classmates" having 49%. The second best effective intervention was number 2 "ADHD student should be seated close proximity to the teacher" with 32%. And least effective intervention from this group is number 1 "Change ADHD student seating arrangement daily" with 19%.

Appendix-R

INFORMATION TABLES ABOUT THE SAMPLE OF TEACHERS

Table 1.

Percentage of Response Categories of Teachers' Demographic Information of w.r.t. Variable Gender

Source	Frequency	Percent
Male	100	50.0
Female	100	50.0
Total	200	100.0

Table 2.

Percentage of Response Categories of Teachers' Demographic Information of w.r.t. Variable AGE:

Source	Frequency	Percent
20-30	137	68.2
30-40	54	26.9
40-50	9	4.5
Total	200	99.6

Table 3.

Percentage of Response Categories of Teachers' Demographic Information of w.r.t. Variable Qualification

Source	Frequency	Percent
BA/BSc	29	14.4
MA/MSc	171	85.1
Total	200	99.5

Table 4.

Percentage of Response Categories of teachers' Demographic Information of w.r.t. Variable School Sector

Source	Frequency	Percent
Public	128	63.7
Private	72	35.8

Total	200	99.5

Table 5.

Percentage of Response Categories of teachers' Demographic Information of w.r.t. Class grade

Source	Frequency	Percent
6th	61	30.3
7th	82	40.8
8th	57	28.4
Total	200	99.5

Table 6.

Percentage of Response Categories of Teachers' Demographic Information of w.r.t. Class Strength

Source	Frequency	Percent
20-30	73	36.3
30-40	127	63.2
Total	200	99.5

Table 7.

Percentage of Response Categories of Teachers' Demographic Information of w.r.t. Experience

Source	Frequency	Percent
less than one year	5	2.5
1-3years	155	77.1
3-7years	31	15.4
8-12years	9	4.5
Total	200	99.5

Appendix-S

INFORMATION TABLES ABOUT THE SAMPLE OF STUDENTS

Table 1.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Gender

Source	*Frequency*	*Percent*
Male	150	50.0
Female	150	50.0
Total	300	100.0

Table 2.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Class Level

Source	Frequency	Percent
6th class	44	14.7
7th class	132	44.0
8th class	124	41.3
Total	300	100.0

Table 3.

Percentage of Response Categories of Students' Demographic Information of w.r.t. School Sector

Source	Frequency	Percent
Public	150	50.0
Private	150	50.0
Total	300	100.0

Table4.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Father Qualification

Source	Frequency	Percent
Matric-BA/BSc	76	25.3
Masters	109	36.3
MPhil	109	36.3

PhD	6	2.0
Total	300	100.0

Table 5.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Mother Qualification

Source	Frequency	Percent
5-8	48	16.0
8-12	114	38.0
12-16	132	44.0
4	6	2.0
Total	300	100.0

Table 6.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Father Profession

Source	Frequency	Percent
Govt. job	169	56.3
private business	131	43.7
Total	300	100.0

Table 7.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Mother Profession

Source	Frequency	Percent
working lady	105	35.0
Housewife	195	65.0
Total	300	100.0

Table 8.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Family Monthly Income

Source	Frequency	Percent
20000-30000	1	.3
30000-40000	166	55.3
40000-50000	98	32.7

50000-60000	35	11.7
Total	300	100.0

Table 9.

Percentage of Response Categories of Students' Demographic Information of w.r.t. Number of Siblings

Source	Frequency	Percent
2	56	18.7
3-5	192	64.0
5-7	47	15.7
more than 7	5	1.7
Total	300	100.0

Appendix-T

CERTIFICATES OF VALIDITY

Certificate of Validity-01

EFFECTIVE TEACHING INTERVENTIONS FOR ATTENTION DEFICIT AND HYPERACTIVE DISORDER STUDENTS AT ELEMENTARY LEVEL

By Saadia Khan

Ph.D. scholar faculty of advanced and integrated studies. National University of Modern Languages, H-9, Islamabad Pakistan.

This is to certify that undersigned has evaluated the following questionnaires:

1. Questionnaire for Teachers' Awareness About Students with ADHD
2. Rating Scales for Teachers' About Prevalence of Students with ADHD in Mainstream Classrooms
3. Questioner Related to Interventions Used by Teachers' to Deal with Students Having ADHD in Mainstream Classrooms
4. Self – Rating Questionnaire for Students About their Classroom Behaviour
5. Self-Report Questionnaire for Teachers Before and After Training Based On Knowledge of ADHD and Teaching Interventions for ADHD Students
6. Pre and post interventions student's behavioural checklist for teachers

developed by the Saadia Khan, Ph.D Scholar of NUML Education Department. I found all questionnaires according to a research titled, objectives and hypotheses.

These questionnaires can be used in her study because of content validity. She can collect data from teachers and students of elementary level schools.

Name: Dr. M. Imran Yousaf

Designation: Chairman, Department of Education, PMAS, Arid Agriculture University, Rawalpindi

Signature: _____

Certificate of Validity-02

EFFECTIVE TEACHING INTERVENTIONS FOR ATTENTION DEFICIT AND HYPERACTIVE DISORDER STUDENTS AT ELEMENTARY LEVEL

By Saadia Khan

Ph.D. scholar faculty of advanced and integrated studies. National University of Modern Languages, H-9, Islamabad Pakistan.

This is to certify that undersigned has evaluated the following questionnaires:

1. Questionnaire for Teachers' Awareness About Students with ADHD
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6. Pre and post interventions student's behavioural checklist for teachers

developed by the Saadia Khan, Ph.D Scholar of NUML Education Department. I found all questionnaires according to a research titled, objectives and hypotheses.

These questionnaires can be used in her study because of content validity. She can collect data from teachers and students of elementary level schools.

Name: Dr. Muhammad Asghar Ali

Designation: Assistant Professor, Women University of AJ&K, Bagh

Signature: 

Certificate of Validity-03

EFFECTIVE TEACHING INTERVENTIONS FOR ATTENTION DEFICIT AND HYPERACTIVE DISORDER STUDENTS AT ELEMENTARY LEVEL

By Saadia Khan

Ph.D. scholar faculty of advanced and integrated studies. National University of Modern Languages, H-9, Islamabad Pakistan.

This is to certify that undersigned has evaluated the following questionnaires:

1. Questionnaire for Teachers' Awareness About Students with ADHD
2. Rating Scales for Teachers' About Prevalence of Students with ADHD in Mainstream Classrooms
3. Questioner Related to Interventions Used by Teachers' to Deal with Students Having ADHD in Mainstream Classrooms
4. Self – Rating Questionnaire for Students About their Classroom Behaviour
5. Self-Report Questionnaire for Teachers Before and After Training Based On Knowledge of ADHD and Teaching Interventions for ADHD Students
6. pre and post interventions student's behavioural checklist for teachers

developed by the Saadia Khan, Ph.D Scholar of NUML Education Department. I found all questionnaires according to a research titled, objectives and hypotheses.

These questionnaires can be used in her study because of content validity. She can collect data from teachers and students of elementary level schools.

Name: Dr. Farah Naz

Designation: Head department of Psychology, IMCG Shalimar, F6-2, Islamabad

Signature:

Certificate of Validity-04

EFFECTIVE TEACHING INTERVENTIONS FOR ATTENTION DEFICIT AND HYPERACTIVE DISORDER STUDENTS AT ELEMENTARY LEVEL

By Saadia Khan

Ph.D. scholar faculty of advanced and integrated studies. National University of Modern Languages, H-9, Islamabad Pakistan.

This is to certify that undersigned has evaluated the following questionnaires:

1. Questionnaire for Teachers' Awareness About Students with ADHD
2. Rating Scales for Teachers' About Prevalence of Students with ADHD in Mainstream Classrooms
3. Questioner Related to Interventions Used by Teachers' to Deal with Students Having ADHD in Mainstream Classrooms
4. Self – Rating Questionnaire for Students About their Classroom Behaviour
5. Self-Report Questionnaire for Teachers Before and After Training Based On Knowledge of ADHD and Teaching Interventions for ADHD Students
6. pre and post interventions student's behavioural checklist for teachers

developed by the Saadia Khan, Ph. D Scholar of NUML Education Department. I found all questionnaires according to a research titled, objectives and hypotheses.

These questionnaires can be used in her study because of content validity. She can collect data from teachers and students of elementary level schools.

Name: Dr. Muhammad Mushtaq

Designation: Head department of Education, Women University of AJ&K, Bagh

Signature: