

AMERICAN UNIVERSITY OF BEIRUT

ELEMENTARY TEACHERS' CONCEPTIONS OF ADHD IN
LEBANON

by
HALA MOHAMED BERRI

A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of Education
of the Faculty of Arts and Sciences
at the American University of Beirut

Beirut, Lebanon
February 2015

AMERICAN UNIVERSITY OF BEIRUT

ELEMENTARY TEACHERS' CONCEPTIONS OF ADHD IN
LEBANON

by
HALA MOHAMED BERRI

Approved by:



Dr. Anies Al-Hroub, Associate Professor

Advisor

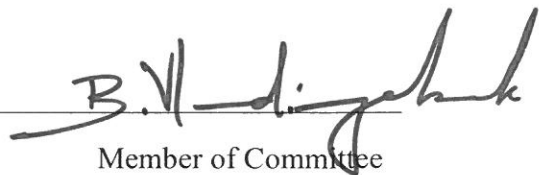
Education



Dr. Rima Karami Akkary, Associate Professor

Member of Committee

Education



Dr. Barend Vlaardingerbroek, Associate Professor

Member of Committee

Education

Date of thesis defense: Feb 11th, 2015

AMERICAN UNIVERSITY OF BEIRUT
THESIS, DISSERTATION, PROJECT RELEASE FORM

Student Name: _____
 Berri Hala Mohamed
 Last First Middle

Master's Thesis Master's Project Doctoral Dissertation

I authorize the American University of Beirut to: (a) reproduce hard or electronic copies of my thesis, dissertation, or project; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes.

I authorize the American University of Beirut, **three years after the date of submitting my thesis, dissertation, or project**, to: (a) reproduce hard or electronic copies of it; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes.

Hala Berri
Signature

19/02/2015
Date

ACKNOWLEDGMENTS

First of all, I thank God for all the blessings I have in my life. Thank you God for the lamp of peace, love, faith and hope that glows in my heart. Thank you for guiding me through all obstacles. I just love you unconditionally.

My most sincere gratitude is for my Thesis advisor Dr. Anies Al-Hroub, who proved to be the most supportive person ever. He has never given up on me despite my ups and downs. Thank you Dr. Anies for your constructive feedback, endless help and advices on all personal and academic levels. You were not only my advisor but also my friend. Big thank you!

I would also like to thank Dr. Barend Vlaardingerbroek for always being there for me whenever I needed him and at any time. Since 2007 till now, you have been always available for me. You are so sweet and helpful. Thank you Dr. V!

Thank you Dr. Rima Karami Akkary for agreeing to be on my committee despite your very busy schedule. I want to thank you also for your constructive feedback on this thesis.

My heart goes to my mom Randa. You are my queen, my support and my idol in this life. You taught me how to be strong and independent, you encouraged me every single time I wanted to follow a new dream. You taught me that I can rise above any circumstances, you taught me how to be always confident and positive. I know I would never be where I am today without your unending faith in me. I love you mom till infinity. I want to thank my Dad Mohamed, for his ongoing support and endless words of wisdom. Dad I am proud you are my dad, you are one of my biggest influences. Thank you for giving us the best reputation and best education. Thank you for always being a great leader. Mom and Dad thank you for showing us what true love, commitment, and beautiful family is all about. My last thank you is for my sister Leila for all our laughs, support, Nescafe and walks. Leila, Ibrahim, Yasmina, and Elena I love you all.

Finally, I want to thank my best friend Lama Mikati for all her positive vibes in my life. I just love you. Thank you for believing in me. We shared smiles and tears and through the years our friendship has grown along with us. You are truly a wonderful part of my life.

AN ABSTRACT OF THE THESIS

Hala Mohamed Berri for Master of Arts
Major: Educational Psychology-School Guidance

Title: Elementary Teachers' Perceptions of ADHD in Lebanon

This study adopted a mixed research design in order to explore current elementary teachers' perceptions and knowledge of ADHD in Lebanon. The purpose of this study is to: (1) interpret elementary teachers' current knowledge about ADHD in Lebanon, (2) explore ADHD students' gender and its implications on teachers' perceptions of ADHD subtypes. Data were collected in mixed methods using: (1) questionnaires including four vignettes that aimed to explore the perceptions of ADHD students in relation to gender; and (2) two focus group discussions (FGDs). The sample consisted of 301 Lebanese teachers from 15 schools (6 private and 9 public) in two areas in South of Lebanon. Teachers' performances on the KADDS questionnaire revealed several misconceptions and lack of knowledge in relation to three subscales: general knowledge, diagnosis/symptoms and treatment. Results of the KADDS questionnaire showed that teachers' have more knowledge on the diagnosis/symptoms of ADHD than on its nature, outcome and treatment. Teachers' ratings of the four vignettes (2 males and 2 females) showed no considerable difference between hyperactivity and inattention subtypes by gender. Some of the major conceptions that were common among teachers targeted the causes of ADHD, its treatment and its confusion with other disorders such as aggression for boys and autism for girls. Most participants used the term 'hyper' to describe ADHD. As for identification, there was no official identification procedure available at Lebanese schools. The results also showed that teachers tended to identify boys more than girls as students exhibiting external behaviors or ADHD. Finally, as for programs and services, no structured program seems to exist in Lebanon and in schools.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	v
ABSTRACT	vi
ILLUSTRATIONS	xi
TABLES	xii

Chapter

I. INTRODUCTION.....	1
1.1 Research Aims and Questions.....	4
1.2 Rationale of the Study	4
1.3 Significance of the Study	7
II. LITTEATURE REVIEW.....	9
2.1 Conceptions of ADHD	9
2.1.1 Evolving Conceptions of ADHD.....	9
2.1.2 Current Definition of ADHD.....	11
2.2 Overview of ADHD	11
2.2.1 Prevalence of ADHD and Gender Factor	11
2.2.2 Prevalence of ADHD across Culture.....	12
2.2.3 Causes of ADHD	13
2.2.4 Genetic and/or Psychosocial Causes of ADHD	14
2.2.5 Diagnosis of ADHD	17
2.2.6 Assessment of ADHD	18
2.2.7 Intervention and Treatment	19
2.3 Research on Teachers' Knowledge of ADHD	20

2.3.1 Factors Affecting Teachers' Knowledge.....	22
2.4 ADHD Students' Gender and Teachers' Perceptions	22
2.5 Conclusion.....	24
III. METHODOLOGY	27
3.1 Research Questions	27
3.2 Research Design.....	27
3.3 Study Site	29
3.4 Method	29
3.4.1 Participants	29
3.5 Procedure.....	31
3.5.1 Individual Surveys.....	31
3.5.2 Demographics and KADDS	31
3.5.3 Vignettes.....	33
3.6 Focus Group Discussions.....	34
3.7 Data Analysis	35
3.8 Trustworthiness of results	36
IV. RESEARCH FINDINGS	37
4.1 Teachers' Performance on KADDS.....	37
4.1.1 General Knowledge	38
4.1.2 Diagnosis and Symptoms	41
4.1.3 Treatment.....	43
4.2 Teachers' Expectations in Relation to Gender.....	46
4.2.1 Teachers' Perception of Jamil's Behaviors	47
4.2.2 Teachers' Readiness to Manage Jamil's Behaviors	48

4.2.3 Teachers' Perception of Jamila's Behaviors	50
4.2.4 Teachers' Readiness to Manage Jamila's Behaviors.....	50
4.2.5 Teachers' Perceptions of Hyperactivity for Vignette 1 and 2	51
4.2.6 Teachers' Perception of Jamil's Behaviors	53
4.2.7 Teachers' Readiness to Manage Jamil's Behaviors	54
4.2.8 Teachers' Perception of Jamila's Behaviors	56
4.2.9 Teachers' Readiness to Manage Jamila's Behavior	56
4.2.10 Teachers' Perceptions of Inattention for Vignette 3 and 4.....	58
4.3 In-depth Overview of ADHD in Lebanon	59
4.3.1 Perceptions of ADHD in Lebanon	59
4.3.2 Incidence of ADHD in boys and girls	60
4.3.3 Factors affecting ADHD.....	61
4.3.4 Current practices.....	63
4.3.5 Unmet needs and obstacles.....	65
4.4 Summary of Findings.....	65

V. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS 68

5.1 Discussion	68
5.1.1 Lebanese Teachers' Understanding of ADHD.....	68
5.1.2 Conceptions of teachers' responses to general knowledge subscale.....	69
5.1.3 Conceptions in teachers' responses to diagnosis/symptoms subscale.....	73
5.1.4 Misconceptions in teachers' responses to treatment subscale.....	74
5.1.5 Teachers Abilities to Differentiate Between ADHD Boys and Girls in Lebanon	77
5.1.6 Interpretation of Hyperactivity between Jamil and Jamila.....	78
5.1.7 Interpretation of Inattention between Jamil and Jamila	79
5.2 Services and Training.....	80
5.3 Conclusion.....	81
5.3.1 Lebanese Teachers' Vision of ADHD.....	81
5.3.2 Current Identification Procedures.....	82
5.3.3 Culture, Parenting Style and ADHD	82
5.4 Implications.....	84
5.4.1 Implications for Practice and Planning.....	84
5.4.2 Implications for Further Research	84
5.4.3 Strengths and Limitations of the Study	86

Appendix

APPENDIX A.....	87
APPENDIX B.....	98
APPENDIX C.....	100
APPENDIX D.....	106
REFERENCES	108

ILLUSTRATIONS

Figure	Page
Figure 1: Frequencies of Teachers' Responses on KADDS.....	45

TABLES

Table	Page
Table 1: Composition of Sample by Gender	30
Table 2: Number of Private and Public Schools.....	30
Table 3: Teachers' Performance on General Knowledge Subscale.....	38
Table 4: Teachers' Performance on Diagnosis and Symptoms Subscale.....	42
Table 5: Teachers' Performance on Treatment Subscale	44
Table 6: Teachers' Responses to Vignette 1	47
Table 7: Teachers' Beliefs about Jamil's Case.....	48
Table 8: Teachers' Responses to Vignette 2.....	49
Table 9: Teachers' Beliefs about Jamila's Case	51
Table 10: Teachers' Responses to vignette 3.....	53
Table 11: Teachers' Beliefs about Jamil's Case.....	54
Table 12: Teachers' Responses to Vignette 4.....	55
Table 13: Teachers' Beliefs about Jamila's Case	57

CHAPTER I

INTRODUCTION

The concept of Attention Deficit Hyperactivity Disorder (ADHD) has evolved gradually and still carries some traces of its origins. Historically, two extreme points of views were dominant (Taylor, 2011). One describes ADHD as a biological condition of the brain, resulting from genetics and the physical environment, while the other extreme describes ADHD as a psychological variant rather than a disorder, with problems deriving from societal intolerance, or from requiring supportive and educational measures (Taylor, 2011). Today, ADHD is characterized as a developmental, neurobiological condition defined by the presence of severe and pervasive symptoms of inattention, hyperactivity and impulsivity (Daley & Birchwood, 2010). It is becoming one of the most prevalent childhood and adolescence disorders, affecting from 5 to 10 percent of all U.S. school-age children (ASCA, 2008). Given the high incidence of ADHD in school populations, teachers are likely to teach multiple children with ADHD (Legato, 2010). These children have difficulty awaiting turns, talk excessively, often appear not to be listening when being spoken to, and tend to interrupt and intrude on others in games, conversations and classroom discussions (Daley & Birchwood, 2010). Those who exhibit such behavioral problems in the classroom, whether inattention and/or hyperactivity symptoms, are at higher risk of poor scholastic achievement and dropping out of school (Martinussen, Tannock, & Chaban, 2011). According to the American School Counselor Association (ASCA, 2008) ADHD may severely affect family relations, cause problems with school staff, impede learning and academic achievements, interfere with peer relationships and contribute to a student's poor self-

concept and low self-esteem. Since ADHD is a disorder taking place within the school setting (classroom or recess) and having undesirable effects on the academic achievement of students in the process of learning, teachers are often in the front line in identifying it and helping these students (Badeleh, 2013). Teachers need to be aware of the symptoms of ADHD in order to be able to identify ADHD students and refer them. Before any intervention or treatment, a correct diagnosis should be made as well (Krowski, 2009).

From another perspective, teachers' perceptions of ADHD children might differ according to the child's gender (Maniadaki, Sonuga-Barke, & Kakouros, 2003). Given the importance of (a) the interactions between these children and their teachers, and (b) early identification, the impact of the ADHD students' gender on teachers' perceptions should be an important factor to consider (Maniadaki et al., 2003). Research indicates that there are about 2.5 boys identified for every girl with ADHD in the community and about six boys for every girl with ADHD referred to U.S. based clinics (Ohan & Visser, 2009). A similar discrepancy based on gender also exists in Australia. This gender discrepancy emphasizes the potential problems that can impact diagnosis of students with ADHD and the role that teachers play in identifying and in service- seeking for ADHD; that is because teachers have different expectations of and behave differently toward boys and girls (Ohan & Visser, 2009). Boys with ADHD typically exhibit high levels of hyperactivity, aggressiveness and other externalizing symptoms, which teachers perceive to be disruptive and stressful (Sciutto, Nolfi, & Bluhm, 2004). Girls with ADHD, however, tend to exhibit lower levels of disruptive behavior and higher levels of inattentiveness, internalizing symptoms, and social impairment (Sciutto et al., 2004). Girls are considerably under-recognized by teachers and under-referred

compared with boys (Groenewald, Emond, & Sayal, 2009). Alarming, some studies estimate that as many as 50 % to 75% of girls with ADHD are missed to be diagnosed (Caralee, 2007). A major reason is that bias in teachers' perceptions of boys' and girls' behaviors may contribute to gender differences in ADHD referrals (Sciutto, 2004). Girls with ADHD are less likely to be referred because they cause fewer problems in the classroom while boys' symptoms of impulsivity and hyperactivity are more likely to be shown to the teachers (Caralee, 2007). Teachers' bias may also be the result of unexplored knowledge of ADHD subtypes (Bauermeister et al., 2007). International research has shown the difficulties teachers have in recognizing girls with ADHD (Groenewald et al., 2009). Therefore, teachers play an important role in the recognition and referral of children with ADHD (Groenewald et al., 2009). They are often seen as the most valuable source of information about a child's behavior and any bias in teacher perceptions may have important consequences for the child and the school (Sciutto et al., 2004). There are no studies found in the context of the Arab countries. In sum, it is very important to investigate the effects of child gender and ADHD types on teachers' perceptions and referral decisions.

In the present piece of research, a demographic questionnaire will be given for teachers to supply information regarding their age, gender, and teaching experience (e.g., years of experience, grades taught). The Knowledge of Attention Deficit Disorder Scale (KADDS) will then be administered to measure teachers' knowledge of the symptoms, associated features, and treatment of ADHD. Four vignettes that describe a boy with ADHD, a girl with Attention Deficit Disorder (ADD), a boy with ADD and a girl with ADHD were then used to gauge the extent to which teachers differ in their perceptions according to gender difference and ADHD types. Finally, focus group

discussions will take place in order to enable to researcher to have an in-depth understanding of teachers' perceptions and understanding of ADHD.

1.1 Research Aims and Questions

The aim of the study is two-fold: (1) explore elementary teachers' current knowledge about ADHD in Lebanon; and (2) explore the nature of the relationship between ADHD students' gender and its implications on teachers' perceptions of ADHD subtypes. Two questions guided the current research study:

1. What knowledge do Lebanese teachers in the elementary cycle have about ADHD?
2. How does ADHD students' gender affect elementary teachers' perceptions of ADHD subtypes?

1.2 Rationale of the Study

Theoretical and empirical studies on school guidance and counseling are lacking in the Middle East and North Africa (MENA) region. Moreover, knowledge about students' needs and the tasks of counselors and teachers in this regard is still underdeveloped. Studies done in the region - e.g. Turkey and Iran - have found that teachers lack knowledge about ADHD. In Turkey, for example, 65.5% of teachers believed that ADHD is a consequence of parental spoiling (Naim & Kavakci, 2010). Another study done in Isfahan-Iran showed that teachers do not have much knowledge of ADHD and they are in real need of workshops and training in order to promote their knowledge in dealing with ADHD students (Sarraf, Karahmadi, Marasy, & Azhar, 2010). Moreover, published studies in the Arab world are scarce (Farrah et. Al.

2009). The researcher went through the MA theses that were conducted in the Lebanese context and it has been found that these studies address ADHD children rather than teachers and do so from an intervention aspect. They basically targeted the effect of training on these students, how to include them in a general education setting and the different interventions that would help teachers deal with ADHD students. However, none of these studies have ascertained whether teachers are knowledgeable about ADHD symptoms and the possible overlaps and confusions between ADHD/ADD; and about other behavioral problems such as aggression in males and quietness and restlessness in females.

According to the ASCA (2008), school counselors should support the rights of students with ADHD to receive multidisciplinary, multimodal and multifaceted treatment for symptoms and effects of ADHD. Ayyash-Abdo, Alamuddin, & Mukallid (2010) believe that school counseling in Lebanon has long been considered a developing field, especially in southern Lebanon. This viewpoint reflects the reality in Lebanon. Therefore, the ASCA calls for school counselors to support ADHD students in receiving all interventions they need. The above reason explains the fact that ADHD has been almost entirely ignored in Lebanon both as a field of practice and a potential area for research. This is an immediate cause for concern for both students who display ADHD in schools and on teachers' ability to identify and cope with these students.

Previous research in Western cultures has found evidence that teachers lack knowledge about ADHD and that comprehensive training in ADHD is necessary for school teachers (Naim & Kavakci, 2010). Also, other research studies have adapted the KADDS to measure teachers' knowledge of the symptoms, associated features, and treatment of ADHD and it has been found that KADDS scores are positively related to

teachers' prior knowledge, attitudes and self-efficacy (Sciutto et al., 2000). Therefore, this study is founded on previous studies that were done in different Western cultures, and which is going to add to the Lebanese literature the term "Teachers' Knowledge", which is a pre-requisite to the intervention studies that they have already conducted.

On another level, most teachers in our Arab culture lack knowledge about ADHD and have possible misunderstandings of its symptoms (Farah et. al., 2009). A study done in Australia has shown that girls are less likely to be referred for ADHD due to the fact that they are overlooked by teachers (Ohan et. al., 2009). ADD girls are considered to be more at risk and of greater concern than boys as they are more likely to engage in emotional problems such as depression, anxiety and loneliness (Maniadaki et al., 2003). Another study conducted in England has shown that ADHD in girls compared to boys is under-recognized and that unfortunately teachers have difficulty coping with, and poor knowledge of, ADHD subtypes (Groenewald et al., 2009). Therefore, improving teachers' knowledge about ADHD, especially the inattentive type, could assist in tackling gender gaps and bias for accurate referrals and diagnosis. Moreover, sociocultural expectations differ for boys' and girls' behavior (Maniadaki et al., 2003). In most Arab societies, quietness, fearfulness, and dependency are considered normal for girls, whereas aggression and impulsivity are considered normal for boys. From personal experience in the teaching field, teachers directly label boys who show disruptive behaviors in the classroom as aggressive and hyperactive without relative linkage to the difference between these two disorders. Moreover, they neglect girls due to their quietness, ignoring the fact that ADHD can show in other subtypes like ADD and this is of great concern. Further explanation of ADHD subtypes is provided in chapter two.

The choice of the topic of study stems from the fact that teachers' knowledge about ADHD in Lebanon, specifically in South Lebanon, is poorly developed, and this needs to be uncovered thoroughly by investigating the level of awareness that teachers have about ADHD and how they respond to it in accordance to the gender bias that may contribute to bigger gender gaps and differences for boys and girls. Without adequate knowledge or training on ADHD for addressing children's needs in the classroom, teachers may feel unprepared to face many challenges that children with ADHD can pose, and be less likely to seek appropriate support for their students (Legato, 2010). Therefore, teachers' knowledge about ADHD is a must in being able to identify these ADHD students from others and thus adopt good pre-intervention techniques.

1.3 Significance of the Study

The study has an impact on both the theory of counseling and the practice of working with ADHD students. Theoretically, identifying the knowledge of teachers about ADHD is a prerequisite to any future study that would initiate intervention programs. Moreover, the results of this study will be of use in producing a more comprehensive definition of ADHD, taking into account possible cultural biases that are affecting the understanding of ADHD. Comprehensive programs cannot exist if the concept of ADHD is unclear.

At a practical level, identifying Lebanese elementary school teachers' knowledge about ADHD as related to the gender difference will help educators to explore and address the deficiencies in the educational system. This will help teachers and practitioners prepare in-service training programs and workshops. Teachers play a major role in recognizing, identifying, and referring students. Therefore, teachers'

workshops accompanied by a developmental comprehensive school guidance and curriculum program would be a first step towards progress.

CHAPTER II

LITERATURE REVIEW

This chapter shed light on empirical studies that target ADHD from different angles. It is divided into four parts; first, the evolution of the concept of ADHD in order to form a solid base of its development. Second, an overview of ADHD was described in order to understand its symptoms, assessment, diagnosis process and treatment. After that, the empirical literature was referred to for understanding teachers' knowledge about ADHD and, discover the factors that influence their knowledge. Finally, research on ADHD students' gender and its influence on teachers' perceptions was explored.

2.1 Conceptions of ADHD

2.1.1 Evolving Conceptions of ADHD

ADHD, the abbreviation for Attention Deficit Hyperactivity Disorder, is used to describe children, adolescents, and some adults, who show hyperactive, impulsive, and/or easily inattentive behavior (Kleynhans, 2005). Under different names, ADHD has been recognized for more than a century. In the nineteenth century, Heinrich Hoffman (1809–1894), a German physician and poet, wrote about Fidgety, Philip who cannot keep still; indeed, he creates a mess and upsets his parents (Taylor, 2011). The poem portrays the typical behavior of a child with ADHD, living in times when children were subject to more severe forms of discipline than today (Millichap, 2010).

In the early twentieth century, George Frederick Still, the founder of pediatrics in England, described ADHD with modern understanding (Taylor, 2011). His descriptions of problem behavior certainly overlap with ADHD, but do not, however, give primacy to impulsiveness, over activity, or inattention (Taylor, 2011). Rather, he aims to describe it as ‘defects of moral control’ and attributes behavior problems to constitutional medical conditions (Taylor, 2011).

Medical reference to childhood behavioral syndrome dates back to the beginning of the twentieth century. Behavioral abnormalities were associated with head injury and they occurred as a complication of encephalitis following the World War I influenza epidemic of 1918 (Millichap, 2010). It was first described in Vienna, in soldiers who had survived the war. It affected all ages and produced a variety of neurological syndromes, with sometimes excited over-activity, involuntary movements, sleep disorders, mood changes, and manic behavior (Taylor, 2011). This contributed to a readiness to attribute the symptoms, which one would now call ADHD.

The next step was therefore to move to a definition that would be based on psychological changes rather than unknowable neurological ones (Taylor, 2011). Two American authors contributed further: Virginia Douglas provided concepts of attention deficit and Paul Wender regarded attention deficits as the key to understanding Minimal Brain Damage (MBD) (Taylor, 2011). The stage was set for the development of the key idea of Attention Deficit Disorder which came with the third edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-III, American Psychiatric Association, 1980) (Taylor, 2011). At this point, the end of the prehistory of ADHD is reached.

2.1.2 Current Definition of ADHD

From the initial descriptions of brain damage syndrome to brain-injured children ending with minimal brain damage, the emphasis turned to symptoms, when the American Psychiatric Association included the syndrome in their Diagnostic and Statistical Manual (DSM) in 1968 (Millichap, 2010). ADHD was originally presented in the DSM-II as a disorder of hyperactivity, and the inattention subtype was not formally established until 1980 (Bell, 2013). In 1980, the DSM-III recognized two subtypes of a syndrome of Attention Deficit Disorder (ADD): ADD with hyperactivity and ADD without hyperactivity. In 1987, the DSM-III was revised (DSM-III-R) and the term Attention deficit Hyperactivity Disorder (ADHD) was used. In 1994, the DSM-IV recognized three subtypes of the syndrome: ADHD-inattentive type, ADHD-hyperactive-impulsive type, and ADHD-combined type (Millichap, 2010). Finally, in 2013, the DSM-5 was published. It has been updated to more accurately characterize the experience of affected adults (APA, 2013). By adapting the criteria for adults, DSM-5 aims to ensure that children with ADHD can continue to get care throughout their lives if needed (APA, 2013).

2.2 Overview of ADHD

2.2.1 Prevalence of ADHD and Gender Factor

Prevalence of ADHD varied across cultures. The reported prevalence of ADHD in school-age children varies from 2% to 18% depending on the diagnostic criteria listed in DSM-IV (Alloway, Elliott, & Holmes, 2010). Boys are affected three to six times more commonly than girls (Millichap, 2010).

ADHD influences millions of children around the world. Approximately, 3% to 5 % of elementary school children in the United States have been diagnosed with this disorder (Kleynhans, 2005). In the United Kingdom, a study has been conducted to explore the prevalence of ADHD symptoms in a community sample of 964 ten year old children (Alloway et. al., 2010). Results showed that of the prevalence of ADHD in 8% with the majority of children were boys identified with the Hyperactive/Impulsive subtype (Alloway et. al., 2010). Studies investigating the prevalence of this disorder in 1658 students in the Middle East region, particularly in Tabriz, Iran, showed similar results (Amiri, Fakhari, Maheri, & Asl, 2010). The prevalence rate of ADHD in these elementary students in Tabriz was 9.7%, and it was more common among boys (Amiri et. al., 2010). Boys are more frequently referred than girls, with estimates ranging from 6% to 9% for boys and 2% to 3% girls in schools (Kleynhans, 2005).

The high prevalence of this disorder indicates the undesirable effect that ADHD can have on the academic achievement of students in the process of learning (Badeleh, 2013). Teachers are expected to play a main role in helping these students and in preventing the complications of this disorder (Badeleh, 2013).

2.2.2 Prevalence of ADHD across Culture

Cultural differences in the diagnosis and treatment of ADHD are important issues to consider because they depend to a great extent on the background culture of the family and teachers' perceptions (AAP, 2009). Variations in the prevalence of ADHD depend on the diagnostic criteria that each country uses (Kelowna, 2007). The DSM-IV is frequently used in the United States, and Europeans have developed their guidelines for hyperkinetic disorder in accordance with the DSM-IV (Graham, Seth,

&Coghill, 2007). However, the French do not use the same system of American psychiatrists (Wedge, 2012). The French Federation of Psychiatry developed the CFTMEA (Classification Francaise des Troubles Mentaux de L'enfant et de L'adolescent). The focus of CFTMEA is on identifying and addressing causes of ADHD children's symptoms (Wedge, 2012). Upon the different tools and guidelines used for diagnosing ADHD children, prevalence among these countries varied: ADHD remains higher in the US (8%) under the influence of the DSM-IV while it remains under diagnosed in France and Europe (4-5%) (Kelowna, 2007).

2.2.3 Causes of ADHD

The possible causes of ADHD are heritability, antenatal environments, home and social environments.

Heritability. High levels of heritability have been found for ADHD. The disorder does appear to run in families (Howe, 2010). A study found that neurological and genetic factors are the greatest contributors to this disorder (Kleynhans, 2005). Many genes are likely to be involved, but those related to dopamine neurotransmission and serotonin pathways in the brain have been strongly implicated (Howe, 2010). Due to the fact that ADHD is a familial disorder, it is possible that when a child is diagnosed with ADHD, either one or both of parents could have ADHD (Kleynhans, 2005). This fact has implications for the teacher in needing to communicate with the parents and have a deeper understanding of the child (Kleynhans, 2005).

Neurological studies have suggested that the prefrontal cortex, part of the cerebellum, and the basal ganglia may be involved in the symptoms of ADHD. They may cause inattention and problems with inhibition (Kleynhans, 2005).

Antenatal environments. A number of antenatal environmental risk factors for ADHD have also been suggested. Tobacco smoking, alcohol consumption by the mother during pregnancy, prenatal maternal stress, prematurity and low birth weight have been identified as possible risk factors (Howe, 2010).

Home and social environment. Inadequate parental discipline has been suggested as one of the factors that could lead to a greater severity of the symptoms (Howe, 2010). Many comorbid disorders can be associated with ADHD such as conduct disorders, depression and anxiety (Pires, Da Silva, & De Assis, 2013). A study done in São Gonçalo, Brazil, sought to ascertain whether factors of the family and environment are associated with the appearance of ADHD in children (Pires et. al., 2013). Results showed that more severe symptoms in children are associated with higher levels of family dysfunction (Pires et. al., 2013). Sixty-two percent of the clinicians said that they assessed the family situation and parenting factors and appeared to believe that presumed environmental “causes” such as negative school experiences, relationship problems, a chaotic family background, or a history of child abuse or neglect may lead to a greater severity of ADHD (Kovshoff et. al., 2012).

2.2.4 Genetic and/or Psychosocial Causes of ADHD

The causes of ADHD are still a matter of debate in the UK against, concerning medical and biological explanations (Salway, 2010). Two repertoires were identified: the first repertoire (biological) represents ADHD as a brain disorder having a genetic origin and treated as a medical condition, and the second repertoire (psychosocial) represents ADHD as the consequence of poor parenting, school discipline, and is associated with the state of society (Salway, 2010). However, the psychosocial

repertoire is overwhelmingly dominant in the UK and parents of ADHD children are blamed, due to the fact that they work for long hours under the strain of family life and their children are victims of their work conditions. Moreover, parents are also represented as ineffective and seeking excuses for their children's inappropriate behavior (Salway, 2010). The French also view ADHD as a medical condition that has psychosocial and situational causes (Wedge, 2012). French doctors prefer to look at the child's social context and not at the child's brain. This is a very different way of seeing things from the American tendency to attribute symptoms to a biological dysfunction such as a chemical imbalance in the child's brain (Wedge, 2012). Moreover, according to Wedge (2012), parenting styles differ among cultures. French parents provide their children with a firm structure and clear discipline. Children are not allowed, for example, to snack whenever they want. Mealtimes are at four specific times of the day so French children learn to wait patiently for their meal rather than eating whenever they want. Moreover, parents are consistent with their rules and discipline as they believe that these will make their children feel safer and well-behaved (Wedge, 2012). In South Korea, the traditional culture of Confucianism is a strong influence on parenting practices, and obedience is an essential value to family harmony and functioning. The disruptive behavior of ADHD children can be seen as a dishonor to a family and is often viewed pejoratively by others in Korean society (Oh et. al., 2012). Unfortunately, this strict parenting style affects children with ADHD negatively. According to Oh et al. (2011) authoritarian parenting practices is associated with poor social adjustment skills and more anxiety and aggression in children. An affectionate parenting attitude is important in preventing behavioral problems in ADHD children.

Research in the near East culture particularly in Turkey and Iran, viewed ADHD as a result of the environment and particularly parental spoiling as the main reason behind it (Naim & Kavkci, 2010; Ghanizadeh et. al., 2005). Another study that has been conducted by Maniadaki et. al. (2003) highlighted ADHD students' gender as a possible cultural factor influencing teachers' referrals. As mentioned in previous sections, teachers' referrals are subject to teachers' preferences and to cultural expectations for boys and girls as well.

Thus, teachers' and parents' perspectives on ADHD are influenced by culture. Culture plays an important role: In Korea, according to Confucianism, parents and teachers tend to focus more on children's academic achievement and take children's distractive behaviors as a negative reflection on themselves and their authority. Korean teachers and parents try to take personal responsibility for children's distractive behaviors, and have negative attitudes toward medication because the medication does not help to increase academic improvement (Moon, 2011). U.S. parents and teachers, influenced by western culture's focus on independence, tend not to take personal responsibility for the children's behaviors but to focus more on children's current problems and treatment. U.S. parents and teachers did not mind a third party's engagement in dealing with children with ADHD and their behaviors. U.S. parents were more positive about medical treatments because medication helps to reduce children's distractive behaviors (Moon, 2011). Thus, different perspectives on ADHD exist due to different cultures.

2.2.5 Diagnosis of ADHD

A diagnosis of ADHD is very essential to provide help for ADHD students. It is performed by psychologists or clinicians. Most of the clinicians and psychologists stress the important role that parents and teachers play in this process. Some clinicians speak of teachers as the more experienced judges of typical and atypical behavior based on their experiences with multiple children in different settings (Kovshoff et. al., 2012). Kovshoff et. al. (2012) reported “Teachers are trusted more than parents. There are many reasons for this. Teachers spend much more time with children than parents. Second, teachers have got much wider experience with different children. Third, teachers seeing fifty or thirty children in the classroom can easier pick up abnormal behavior and the evidence of the teacher is more valuable for me always.”

Teachers need to be aware of the symptoms of ADHD and its subtypes in order to be able to identify ADHD students and refer them. Before any intervention or treatment, a correct diagnosis should be made (Krowski, 2009).

Extensive research has found that the primary symptoms displayed by ADHD children are inattention, impulsivity and hyperactivity (Barkley, 2005).

Inattention. ADHD children have difficulty sustaining attention on independent school homework or tasks that are dull or boring for them (Barkley, 2005).

Impulsivity. ADHD children have difficulty in inhibiting and self-regulating their behavior. (Barkley, 2005).

Hyperactivity. ADHD children are extremely active and energetic. These children often move around without permission, talk excessively, and are out of their seats (Barkley, 2005).

Most professionals base their diagnosis of ADHD on the guidelines of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental disorders (Kleynhans, 2005). Teachers are expected to be aware of the symptoms and subtypes of ADHD. However, these diagnostic criteria could also be of benefit when making an appropriate referral. (See Appendix D).

2.2.6 Assessment of ADHD

The purpose of the assessment is to determine if the child can be diagnosed with ADHD in the absence or presence of other childhood psychiatric disorders. This of course requires extensive clinical knowledge of psychiatric disorders. Another purpose of the assessment is to address the academic and social problems that were noticed through appropriate intervention plans (Kleynhans, 2005).

Following a teacher's referral of a child showing ADHD-related symptoms, the first stage of assessment is to obtain the teacher's ratings of the child's behavior. If it becomes evident in the first stage that there are significant problems, then the assessment process moves into the second stage in which multiple assessment methods are used. The psychologist then interviews the child, parents, and the teacher in order to prepare an intervention and treatment plan. During the third phase of the assessment, results of the multi-method evaluation are interpreted. Finally, an intervention and treatment plan is done during the fourth stage of the assessment (Kleynhans, 2005).

Teachers' role in the assessment phase. Teachers spent most of their time with students, whether in the classroom or recess. They play a major role in referring children for assessment. They are expected to complete behavior-rating scales after

referring a child. They are the source in providing detailed information about the referred child to the psychologist. Information includes: the referred child's academic performance, social relations, the difficulties that the child faces, and the strategies that the teacher uses in dealing with them. Teachers should also review the DSM-IV diagnostic criteria with the psychologist in order to make correspondence between their own observations and the diagnostic criteria (Kleynhans, 2005). Teachers' collaboration with parents and specialists are a valuable foundation in the assessment process in order to make good referrals and diagnosis.

2.2.7 Intervention and Treatment

To date, evidence-based research on treatments for ADHD has centered on medication and behavioral interventions (Krowski, 2009). There are three types of medication: stimulants, antidepressants, and antihypertensives (Barkley & Mash, 2006). Medication was highly recommended for ADHD children by 60% of the teachers (Gregg, 2005). Based on interviews and questionnaires completed by elementary teachers, results showed that most teachers view medication as a type of intervention that can provide a short-term decrease in inappropriate behavior (Gregg, 2005). However, Morisoli and McLaughlin (2006) believe that behavioral interventions have a bigger impact on ADHD children. Their study was based on 350 teachers in Wisconsin and Minnesota. Seventy eight percent of these teachers pointed out on the fact that medication does not replace the need of effective interventions that aim to improve learning and achievement (Morisoli & McLaughlin, 2006). A combination of both stimulant medication and behavioral interventions produces far better results in children with ADHD.

2.3 Research on Teachers' Knowledge of ADHD

Teachers' knowledge in dealing with ADHD plays a major role in improving the academic and social functioning of ADHD children (Barkley, 2005). Teachers who have poor knowledge and understanding of ADHD tend to have a negative impact on these students (Barkley, 2005). A study done in Korea aimed to understand the perspectives of teachers who taught children with ADHD (Hong, 2008). Twenty seven teachers at a Seoul school completed a short survey in which they wrote narrative responses regarding their thoughts on ADHD. Findings indicated that Korean teachers lack knowledge about ADHD and face problems in distinguishing ADHD from other disorders (Hong, 2008). A quantitative study examined the knowledge levels of ADHD of 107 school teachers in South Texas (Guerra & Brown, 2012). The study specifically compared teacher knowledge levels among three specific ADHD knowledge areas: (a) general knowledge of ADHD, (b) knowledge of symptoms and diagnosis of ADHD, and (c) knowledge of treatments for ADHD (Guerra & Brown, 2012). The three subscales were measured by the study instrument, Knowledge of Attention Deficit Disorders Scale (KADDS). The data analysis indicated that the levels of knowledge of ADHD among middle school teachers in South Texas are low, with scale knowledge scores ranging from 46% to 66%. General knowledge had the lowest score from the study sample (Guerra & Brown, 2012).

Weyandt, Fulton, Schepman, Verdi, and Wilson (2009) investigated teachers' (general education and special education) and school psychologists' knowledge of ADHD. One hundred and thirty general education teachers, special education and school psychologists responded to a 24-item questionnaire concerning treatment and

possible causes of ADHD (Weyandt et. al., 2009). Findings pointed out that school psychologists' knowledge level of ADHD was significantly greater than the knowledge level of special and general education teachers. However, there were no significant difference between general education teacher knowledge and special education teacher knowledge of ADHD. In both groups, accurate knowledge was limited. Examining the false beliefs, general education teachers and special education teachers agreed most often with the statement, "Special diets are effective treatments for ADHD," a widely accepted myth that has emerged frequently (Weyandt et. al., 2009).

Naim and Kavkci (2010) conducted a study in Turkey of elementary teachers from 87 schools to explore their knowledge about ADHD. The findings of the study showed that teachers' knowledge was insufficient: 88% of teachers' self-rated their information about ADHD as very low and 65.5% of teachers believed that it is a consequence of parental spoiling. In addition, television, friends' advices, and newspapers were identified by teachers as main sources of information about ADHD (Naim & Kavakci, 2010). Similarly, the finding of the study of Ghanizadeh et. al. (2005) concurred with the previous research finding. Fifty three percent of Iranian teachers considered ADHD to be the result of parental spoiling (Ghanizadeh et. al., 2005). An Australian study grouped two samples of teachers into high and low categories of ADHD upon their responses to an ADHD survey (Legato, 2010). This study indicated that teachers with high levels of knowledge perceived that ADHD negatively impacted academic and social relationships; they were more likely to seek support for services for ADHD students aiming for better outcomes in their classrooms when compared with teachers with low knowledge who reflected naivety towards these students (Legato, 2010).

Hence, if teachers have poor knowledge of this disorder, they will not be able to plan effective behavioral strategies (Barkley, 2005). Teachers' knowledge of ADHD enables them to change their classroom management, adapt the curriculum, and to use a variety of teaching strategies in order to create a positive learning environment (Kleynhans, 2005).

2.3.1 Factors Affecting Teachers' Knowledge

Brook, Watemberg, and Geva (2002) emphasized the importance of training in relation to teachers' knowledge. Their study showed that teachers who did not receive training considered ADHD to be the result of parental attitudes. However, teachers who received training in dealing with ADHD students showed an understanding of ADHD and its effects on students' behavior (Brook et. al., 2002). Another study that has been conducted in Iran – mainly in Isfahan aimed to show the effectiveness of workshop on school teachers' knowledge, and function towards ADHD students (Sarraf, Karahmadi, Reza Marasy, Mohammad, & Azhar, 2011). Moreover, Vereb and DiPerna (2004) stressed the positive correlation between teaching experience and training and teachers' knowledge and understanding of ADHD. Teachers' participation in ADHD training was very helpful in applying behavior management strategies (Vereb & Diperna, 2004). Teaching experience and training have been highly positively correlated to a higher understanding of ADHD children (Legato, 2010).

2.4 ADHD Students' Gender and Teachers' Perceptions

Estimates of the prevalence of ADHD have consistently indicated that boys are diagnosed more frequently than girls (Sciutto, Nolfi, & Bluhm, 2004). Moreover, boys

are being referred disproportionately more frequently than girls (Sciutto et. al., 2004). Because the behaviors of children with ADHD are likely to first be observed in the classrooms, teachers are essential to early identification of children in need of services and referrals (Coles, Slavec, & Bernstein, 2013). According to Coles et. al. (2013) this difference in referral rates may be the result of gender differences in the expression of ADHD symptoms. Boys with ADHD typically show high rates of hyperactivity, disruptiveness, and other externalizing symptoms which teachers easily perceive. However, girls with ADHD tend to show the ADD subtype exhibiting low levels of hyperactivity and high levels of inattentiveness, internalizing symptoms, and social impairment. This pattern of symptoms is less likely to disrupt the classroom and, -thus, it is overlooked by teachers (Sciutto et. al., 2004). Sciutto et. al. (2004) investigated the effects of ADHD child gender on teachers' referral decisions. One hundred and ninety-nine teachers from Ohio read profiles of fictional children differing in gender and the types of symptoms they exhibit and rated the likelihood of referring the children. Results showed that teachers were more likely to refer boys than girls, regardless of the symptom type, but the largest gender difference in referrals was for boys who exhibited hyperactivity (Sciutto et. al., 2004). Jackson & King (2004) studied the effect of gender differences on teachers' understanding of ADHD symptoms on 91 teachers in an upper Midwest City. Results of the study showed that teachers' ratings of hyperactivity were significantly relevant to boys. However, girls were under-recognized (Jackson & King, 2004). Another study conducted in England showed that ADHD in girls compared to boys is under-recognized and that unfortunately teachers had difficulty and poor knowledge about ADHD subtypes (Groenewald et al., 2009). However, Maniadaki et al. (2003) emphasized the role that sociocultural expectations

could have in creating bias in teachers when referring ADHD students. Bias in teacher referrals are subject to cultural expectations, since in most societies quietness is considered normative for girls and hyperactivity is linked to boys.

Therefore, improving teachers' knowledge about ADHD especially the inattentive type could assist in tackling gender gaps and avoiding cultural biases to a specific gender.

2.5 Conclusion

Definitions of ADHD have evolved gradually, ranging from brain damage syndrome to minimal brain damage, turning into what we call today attention deficits and hyperactivity disorder symptoms in agreement with the DSM-IV. ADHD affects about 5% to 7% of US school-aged students by causing family problems, impeding their academic achievement, contributing to chaos in the classrooms, and leading to students' low self-esteem. Teachers are viewed as the most valuable source in helping these students in their classrooms. Without adequate knowledge or training on ADHD for addressing children's needs in the classroom, teachers may feel unprepared to face many challenges that children with ADHD can pose, and be less likely to seek support for their students (Legato, 2010). By identifying the main aspects of ADHD within three specific areas: causes of ADHD, symptoms and diagnosis of ADHD and treatment and intervention of ADHD and highlighting on the importance of teachers' knowledge and effective role within these areas, teachers will be able to make more accurate referrals and adopt good pre-intervention techniques and create a positive learning environment.

The overview of the literature emphasized on the fact that many teachers around the world lack knowledge and had very little or no training about ADHD and the

possible intervention techniques that could be used in the classroom. The knowledge that most teachers seemed to have gained was through the media, stating that ADHD is a result of parental spoiling. Unfortunately, inaccurate information often leads to inaccurate referrals.

The ADHD child's gender is found to be an important factor to explore when looking at teachers' perceptions of ADHD. What impact does it have on teachers? Research indicates that there are about 2.5 boys for every girl with ADHD in the community and about six boys for every girl with ADHD referred to U.S.-based clinics (Ohan & Visser, 2009). As presented in the literature, teachers in most countries are the ones who make referrals and these referrals are not only inaccurate because of teachers' lack of knowledge but also due to some cultural bias and misperceptions. ADD girls are under-recognized and thus not referred or diagnosed since girls are quiet and peaceful. However, boys always have higher rates of hyperactivity and disruptiveness which makes it easier for the teacher to identify and refer. The studies interpreting ADHD students' gender effects on teachers' perceptions supported the above and identified two possible reasons for this gender issue: (1) Bias in teacher referrals are subject to cultural expectations since in most societies quietness is considered normative for girls and hyperactivity is linked to boys (Maniadaki et. al., 2003) and/or (2) Teachers' unexplored knowledge of ADHD types. Teachers' not knowing that ADD is a type of ADHD may explain their inability and difficulties in recognizing girls with ADHD.

Finally, cultural factors are important to consider when looking at the gender of the ADHD student, its causes, and the possible intervention and treatments. Variations in the prevalence of ADHD depend on the diagnostic criteria that each country uses (Kelowna, 2007). Moreover, ADHD causes are still a matter of debate between medical,

genetic and psychosocial spheres, specifically among the French and U.S. cultures. In addition, teachers' referrals are subject to teachers' preferences and to cultural expectations for boys and girls as well. There is a strong need for research on ADHD in the Arab World (Farah et. al., 2009) particularly in southern Lebanon which is an unexplored area.

CHAPTER III

METHODOLOGY

This chapter incorporates the research questions guiding the study, with a description of the adopted research design, method, population, participants, and the selection process. In addition, included is a description of the data collection procedures that were used, the tools, and the data analysis procedures.

3.1 Research Questions

The research questions guiding this study are:

1. What knowledge do Lebanese teachers in the elementary cycle have about ADHD?
2. How does the gender of ADHD students affect elementary teachers' perceptions of ADHD?

3.2 Research Design

This study adopted a mixed-method approach that explored the aims of the research through a combination of quantitative and qualitative measures. Creswell (2009) defines mixed methods research study by arguing that “a mixed research is more than simply collecting and analyzing both types of data; it involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research”. According to Johnson & Onwuegbuzie (2004) the main goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both. When

quantitative research can miss subjectivity and provides results that can be generalized to a specific population, qualitative instead provides an in depth investigation into the topic (Edmunds, 1999). Therefore, mixed methods are beneficial in neutralizing or canceling the biases that may arise from qualitative or quantitative research (Creswell, 2009).

Survey packets were used as a primary form of data collection tool, and then focus group discussions (FGDs) took place as a secondary form of data collection to follow up the quantitative results. Crewsell (2007) defines surveys as a “quantitative or numeric description of trends, attitudes, or opinions of a representative sample of a large population using questionnaires or structured interviews for data collection (p.12)”. In this case, survey research is chosen as it is considered to be the best way to collect data to measure teachers’ knowledge about ADHD from a population that is too large to observe directly or to make assertions about (Kleynhans, 2005). According to Kleynhans (2005), “the obvious advantage of such an approach is that responses to questionnaires or test items can be measured in a very standard way, which render them susceptible to a wide variety of statistical manipulations (p.35)”.

On the other hand, focus group discussions (FGDs) took place after completing survey packets. A focus group can be defined as a method of qualitative research that tends to be more exploratory than quantitative research (Edmunds, 1999). Merriam (2010) pointed out that FGDs are best employed to answer the *whys* and *hows* of human behavior. Also, Edmunds (1999) argued that FGDs can be coordinated, conducted and analyzed within a relatively short space of time; probing and clarification of participants’ comments are easy to do in the focus group environment. In this study, FGDs provided an in-depth understanding of teachers’ knowledge in relation to ADHD

and their perceptions of gender among ADHD boys and girls, allowing for the capture and evaluation of subjective comments.

3.3 Study Site

This study was aimed at 15 schools (6 private and 9 public) in two areas in southern Lebanon, particularly Saida and Nabatieh. Survey packets were distributed among these schools. However, the FGDs took place in two schools. All schools in this study provide classes from Nursery to Grade 12 and implement the Lebanese Baccalaureate. There were few differences among public and private schools in both regions. Basically, private schools in this study enrich students' knowledge of languages by teaching French as a second foreign language, starting from Grade 1. Moreover, only two of the private schools were well equipped with different libraries, computer centers, and auditoriums. None of these schools provide special educational services to students with special needs.

3.4 Method

3.4.1 Participants

A total of 350 surveys were distributed among elementary private and public school teachers in 15 schools in southern Lebanon (Saida and Nabatieh). We received 301 surveys in total. The participants of the surveys and focus group discussions consisted of elementary private and public school teachers who agreed to participate in the study. Participants were selected according to the following criterion: the participants must be working at the elementary cycle in a private or public school and teaching any grade from one to six. As for selecting key informants, we selected

participants in this study that are directly involved with the students, who are the teachers. Therefore, our participants consisted of teachers at the elementary cycle. The researcher used purposeful sampling that includes all elementary female teachers of different subject matters. Moreover, only two focus group discussions (FGDs) took place, one in the region of Saida and one in Nabatieh region. Participation in this study was completely voluntary. Eight teachers participated in each of the FGDs. Below is Table 1, which illustrates the number of female teachers that completed the surveys, and participated in the FGDs.

Table 1: Composition of Sample by Gender

Method	Gender	Total
Surveys	Male	0
	Female	301
	Total	301
FGDs	Male	0
	Female	16
	Total	16

Table 2 indicates the number of schools selected for this study. The total number of selected schools was 15 schools. Surveys were distributed among six private schools and 9 public schools.

Table 2: Number of Private and Public Schools

Type of School	Private	Public	Total
Number of Schools	6	9	15

3.5 Procedure

Data collection procedures took place in two phases. The first phase was in the form of individual surveys (demographics, vignettes, KADDS) and the second phase was in the form of FGDs.

3.5.1 Individual Surveys

After obtaining the Institutional Review Board's (IRB) approval, a letter was sent to the Ministry of Education and Higher Education (MEHE) to explain the study and acquire permission to conduct it in the selected schools. Then another letter was sent by the researcher to all the school principals asking for their approval to conduct the research in their schools with elementary teachers (See Appendix C). The recruitment process consisted of two stages: (1) teacher recruitment forms; and (2) teacher contact information. One week after sending the recruitment forms, the researcher collected the forms by hand from the teachers. Then all teachers who accepted to participate in the study were contacted.

The individual survey packets contained one copy of each measure (demographics, ADHD questionnaire, and four vignettes) in a stapled set under Appendix A. Participants first took the demographics questionnaire, then the KADDS measures of knowledge, and then the vignettes' ratings in that order. After completing the surveys, meetings were assigned for both FGDs.

3.5.2 Demographics and KADDS

The first part of the survey consists of general information about teachers, including their gender, years of experience, grades that they teach, their level of

education, and so on. In the second part, teachers had to take the KADDS. This scale was developed by Sciotto, Terjesen, and Bender Frank (2000) and has previously administered in six New York area schools and was also used in Australia (Kleynhans, 2005). According to Sciotto et. al. (2000)the KADDS has a high internal consistency (0.8 to 0.9),and a group and an expert group consisting of 40 upper-level doctoral students in clinical and school psychology were used to work on it. The KADDS is a modified 30-item rating scale designed to measure teachers' knowledge about ADHD as it relates to symptoms and diagnosis of ADHD, and general knowledge about the nature, causes and treatment of ADHD using a series of true-false-do not know items (Sciotto et al., 2000).

Participants teachers read statements about ADHD, and rated each statement as true (T), false (F) or do not know (DK). According to Legato (2011) “The DK option allows for differentiation between what teachers do not know and their misperceptions about ADHD (p.24)”. KADDS items refer to both positive and negative indicators of ADHD in order to account for a negative response bias (Legato, 2011). Sample items include: “Children with ADHD often fidget or squirm in their seats” (symptoms); “ADHD is more common in the 1st degree biological relative (i.e. mother, father) of children with ADHD than in the general population” (causes); “In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g. home, school)” (diagnosis); and, “Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD” (treatment) (See Appendix A).

The questionnaire was translated into Arabic by an interpreter. English and Arabic versions of the questionnaire were passed on to the teachers. Teachers were given the option to complete it based on their language preference.

3.5.3 *Vignettes*

According to DSM-IV, there are three subtypes of ADHD: (1) ADHD, Combined Type: Both inattention and hyperactivity-impulsivity symptoms; (2) ADHD, Predominantly Inattentive Type: Inattention, but not enough (at least 6 out of 9) hyperactivity-impulsivity symptoms; and (3) ADHD, Predominantly Hyperactive-Impulsive. Teachers' expectations about students' gender in accordance to ADHD subtype 2 and 3 were assessed using teachers' ratings to questions based on four vignettes. Vignettes described four elementary school-aged students (2 males, 2 females) that show symptoms that clearly meet Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) symptom criteria for ADHD discussed earlier in the literature section. The two vignettes both address DSM-IV subtypes, particularly type 2 and type 3. Our aim was to explore how ADHD students' gender would affect teachers' perceptions of these students' subtypes. There is a major gender gap in ADHD gender due to the fact that teachers behave differently towards boys and girls (Ohan & Visser, 2009). In addition, teachers have difficulties in identifying ADHD subtypes; they tend to neglect and under-recognize type 2 (ADD) in girls since girls are quiet and peaceful (Groenewald et al., 2009). Teachers even tend to confuse hyperactivity in boys with other disorders (Sciutto, 2004). Hence, the first two vignettes addressed the case of Jamil and Jamila, a boy and a girl who show the hyperactive type, and the third and fourth vignettes addressed the case of Jamil and Jamila showing the inattentive type.

For the purpose of this study, Legato's (2011) vignette questions were adapted and modified accordingly by two professors in the Educational Psychology field at the American University of Beirut (AUB) to support the study. These vignettes enabled the

researcher not only to study teachers' knowledge about the different subtypes of ADHD but also the underlying bias that teachers showed for boys and girls in a Lebanese context.

An identical set of 9 questions accompanied each vignette with only names changed to match the child in the vignette. Teachers provided a rating for each question on a Likert-type scale from 1 to 3, with 1 (not at all), 2 (moderately), and 3 (extremely). The first four questions assessed teachers' perceptions of each child in relation to hyperactivity symptoms, its impact on students' daily life, school work and the Lebanese culture. Questions 5, 6, and 7 assessed teachers' readiness to face each of the students' behavior. Question 8 assessed teachers' confidence in implementing an intervention plan with each child. Question 9 assessed teachers' ability to identify an ADHD student upon two parts: (1) teachers' capability to differ ADHD from other disorders, and (2) teachers' competence in recognizing ADHD subtypes in relation to the gender and the Lebanese culture. (See Appendix A).

3.6 Focus Group Discussions

FGDs are rapid assessments that will enable the researcher to obtain insights into target audience perceptions, needs, problems, beliefs, and reasons for certain practices (Escalada, 1997). In our study FGDs enabled the researcher to collect data on teachers' perceptions and knowledge of ADHD, the symptoms for diagnosis, and their role as teachers in the process of identifying ADHD boys and girls and providing them with assistance. The discussions took place at the libraries of two different schools at agreed upon times. The number of participants was 8 teachers and each FGD lasted for one hour (Rennekamp & Nall, 2003). The session started with the moderator welcoming

the group, introducing herself and the assistant moderator who was tape-recording (Rennekamp & Nall, 2003). The moderator explained the purpose of this FGD and the ground rules for participation. The main ground rules were the following: there are no right or wrong answers to questions, all differing point of views are respected, no names will be included in any report and all comments and responses are confidential; everyone is expected to participate and give chances to others and to avoid having side conversations. After that, the discussion flew from general to specific targeting two main themes: the concept/definition of ADHD, its causes, symptoms and characteristics for diagnosis for one side and the identification procedures for boys and girls accompanied by the possible assistance these teachers adopted for ADHD students from the other side. (See Appendix B).

3.7 Data Analysis

The statistical software that was employed to analyze the data collected from the demographic questionnaire is the Statistical Package for Social Sciences (SPSS). It was used to provide descriptive statistics about the demographic characteristics of the participant teachers.

To measure teachers' knowledge for correct, incorrect and DK scores of ADHD on each of the subscales, percentages and averages were obtained using the Excel program. Additionally, percentages were calculated for teachers' ratings for each of the vignettes using the Excel program.

As for the FGDs, the researcher developed a general coding protocol by categorizing the emerging data. The investigator analyzed the data as soon as it was collected, thus the data analysis process took place while the researcher was still

engaged in data collecting (Corbin & Strauss, 2008; Glaser & Strauss, 1967). The investigator identified constructs, themes, and patterns that best explain the data collected within participants and across them. The investigators compared the emerged codes across segments with the goal of discovering commonalities that reflected the underlying meaning of and the relationships among the coded data, and thus answered the research questions and fulfilled the purpose of the study (Cerswell, 1998; Corbin & Strauss, 2008; Gall et al., 2010). This way the data was interpreted in order to find out the common conceptions and misconceptions that teachers have about ADHD students.

3.8 Trustworthiness of results

We used three criteria to evaluate our study: usefulness, chain of evidence, and contextual completeness. Because there is no common criteria for which to detect an ADHD student in Lebanon, this is why this study would be considered useful. No studies have been done to this effect. It can help policy makers make use of the results to come up with a plan to help ADHD students. In order to test the chain of events, we kept a written record that documents all procedures in data collection and analysis, and was clearly defined and related to each other. Other researchers can use the same methodology and replicate the study. Finally, in order to check for contextual completeness, we provided an in depth description of the history, setting, participants, and research participants.

CHAPTER IV

RESEARCH FINDINGS

The results in this chapter are divided into three parts in order to answer the research questions in this study. The first part concentrates on presenting teachers' responses per individual KADDS question in relation to three subscales. These three subscales address teachers' knowledge and perceptions in three domains, namely teachers' *general knowledge* of ADHD, knowledge about *symptoms and diagnosis* of ADHD and knowledge about *treatment* of ADHD. The second part explores teachers' expectations about students' gender in accordance to their ADHD subtypes and their ability to identify each case of the vignettes. The third part focuses on the findings of the FGDs. Results are thematically presented to highlight the following: various teachers' definitions of ADHD, gender characteristics in relation to ADHD, current practices and services available in Lebanon. To maintain the confidentiality of data provided by participants, all names used below are pseudonyms.

4.1 Teachers' Performance on KADDS

The total scores and percentages of the correct, incorrect and "do not know" responses of 301 teachers for each of the 30 KADDS questions are presented in three tables. The results are analysed in terms of three subscales showing teachers' knowledge in three broad domains, namely teacher' general knowledge of ADHD, knowledge about symptoms and diagnosis of ADHD, and knowledge about treatment of ADHD.

4.1.1 General Knowledge

More than half of the teachers (54%) in item 9 were knowledgeable about the possibility for an adult to be diagnosed with ADHD and 43% of the respondents knew that ADHD in males and females is not equivalent in item 22. Teachers (74%) were also fairly aware of the fact that a child with ADHD will be more distinguishable in a classroom setting than in a free play situation (item 24). Also, item 25 showed that teachers (51%) were aware that the majority of ADHD children evidence poor school performance in the elementary school years. Table 3 shows Lebanese teachers' responses on general knowledge subscale.

Table 3: Teachers' Performance on General Knowledge Subscale

Questions	Correct Response	Correct		Incorrect		Don't Know (DK)		Total <i>N</i>
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
		4. ADHD is more common in the 1 st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.	T	106	35	87	29	
9. It is possible for an adult to be diagnosed with ADHD.	T	164	54	37	12	95	32	296
12. Symptoms of depression are found more frequently in ADHD children than in non-ADHD children.	T	112	37	83	28	105	35	300
14. Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.	F	91	30	74	25	135	45	300
16. If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.	F	129	43	126	42	43	14	298
18. A diagnosis of ADHD by itself makes a child eligible for placement in special education.	F	115	38	91	30	93	31	299

20. ADHD children generally experience more problems in novel situations than in familiar situations.	F	60	20	168	56	67	22	295
21. There are specific physical features which can be identified by medical doctors (e.g. pediatricians) in making a definitive diagnosis of ADHD.	F	81	27	133	44	82	27	296
22. In school age children, the prevalence of ADHD in males and females is equivalent.	F	129	43	67	22	104	35	300
23. In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children.	F	39	13	163	54	97	32	299
24. Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation.	T	223	74	43	14	32	11	298
25. The majority of ADHD children evidence some degree of poor school performance in the elementary school years.	T	155	51	76	25	63	21	294
26. Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments	T	106	35	124	41	68	23	298
30. Children with ADHD generally display an inflexible adherence to specific routines or rituals.	F	29	10	197	66	70	23	296
Average		110	36	105	35	83	28	

Note*: Some totals are below 301 as some teachers did not respond to the item.

The present data shows that participants had a lack of knowledge and held misconceptions: an ADHD child playing video games for a long time but not being able to complete his homework, 42% of teachers held a misconception and 14% showed lack of knowledge in this item (16). In item 4, the causes of ADHD and the fact that genetics are a great contributor to ADHD, 29% of respondents held a misconception and 35% showed lack of knowledge. In item 20, concerning situational variations of ADHD children's behaviors in familiar versus unfamiliar situations, 56% of the teachers held a

misconception and thought that ADHD children experience more problems in unfamiliar situations than in familiar ones, and 22% showed lack of knowledge. Moreover, confusions in respondents' answers about the long term outcome of ADHD in item 14 shows that 25% of the teachers falsely believe that ADHD children "outgrow" their symptoms by puberty and subsequently function normally in adulthood and 45% of teachers indicated that they do not know. A high percentage of teachers (65%) in this study incorrectly believe that children with ADHD display an inflexible adherence to specific routines or rituals and 23% responded by do not know (item 30). There seem to be incorrect views and lack of knowledge about the influence of home situations on ADHD children, 41% of teachers holding the misconception that symptoms of ADHD are often seen in non-ADHD children that come from inadequate and chaotic home environments and 23% showing lack of knowledge (item 26). In addition to the above, more than half of the participants (54%) held the misconception that in very young children the problem of behavior of ADHD children are distinctly different from age appropriate behaviors of non ADHD children, and 32% responded by do not know (item 23). Teachers (44%) in item 21 also held the misconception that medical doctors are able to make a definitive diagnosis of ADHD, and 27% lacked knowledge. Teachers were also confused regarding the fact that depression is found more frequently in ADHD children than in non-ADHD, shown in item 12, where 39% held a misconception and 28% lacked knowledge. Participants (30%) also held the misconception that the diagnosis of ADHD makes a child eligible for placement in special education, and 31% of teachers responded by do not know in item 18.

4.1.2 Diagnosis and Symptoms

Teachers were very knowledgeable about the symptoms of ADHD, with 76% of teachers being aware that ADHD children are frequently distracted by extraneous stimuli (item 2), 83% of respondents correctly identified these children as being fidgety and squirming in their seats (item 7), and 79% of teachers were knowledgeable about the two clusters of symptoms in item 11. Moreover, a high percentage of teachers (83%) were aware that the symptoms of ADHD have to be present in two or more settings before the diagnosis (item 15) and nearly 80% of teachers knew that ADHD children have problems in organizing tasks and activities (item 19). Moreover, item 3 shows that teachers (63%) were aware of the fact that a child's symptoms must be present before age 7 in order to be diagnosed with ADHD. Table 4 shows teachers' performance on diagnostic and symptoms subscale.

Table 4: Teachers' Performance on Diagnosis and Symptoms Subscale

Questions	Correct Response	Correct		Incorrect		Don't Know (DK)		Total N
		n	%	n	%	n	%	
		2. ADHD children are frequently distracted by extraneous stimuli.	T	229	76	43	14	
3. In order to be diagnosed with ADHD, the child's symptoms must have been present before age 7.	T	191	63	49	16	60	20	300
5. One symptom of ADHD children is that they have been physically cruel to other people.	F	108	36	134	46	58	19	300
7. ADHD children often fidget or squirm in their seats.	T	250	83	30	10	20	7	300
8. It is common for ADHD children to have an inflated sense of self-esteem or grandiosity,	F	85	28	144	48	60	20	289
10. ADHD children often have a history of stealing or destroying other people's things.	F	103	34	109	36	84	28	296
11. Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity	T	238	79	3	1	58	19	299
15. In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school).	T	250	83	8	3	41	14	299
19. ADHD children often have difficulties organizing tasks and activities.	T	232	77	31	10	21	7	284
Average		187	62	61	20	47	16	

Note*: Some totals are below 301 as some teachers did not respond to those items.

Teachers also held some misconceptions and lack of knowledge in relation to item 8: their incorrect beliefs about ADHD children having an inflated sense of self-esteem and grandiosity, 48% of participants holding a misconception and 28% indicating that they do not know. In addition, teachers in this study seemed to confuse symptoms of ADHD and symptoms of Conduct Disorder, 36% of participants holding the misconception that ADHD children often have a history of stealing or destroying other people's things; 28% indicated that they "do not know" (item 10). Teachers also showed incorrect views about the nature of ADHD children, 45% holding the misconception that being physically cruel to other people is a symptom of ADHD and 19% responding "do not know" in item 5.

4.1.3 Treatment

A majority of participants (68%) in item 28 were aware that punishment is not the most effective treatment in reducing the symptoms of ADHD. However, teachers lacked knowledge about the causes of ADHD and this influenced their views about treatment. Nearly 50% of teachers held the misconception that ADHD is the result of ineffective parenting skills and 21% showed lack of knowledge in item 1. Teachers were also unaware of the affectivity of antidepressant drugs in reducing symptoms of ADHD, with 28% responding false and 47% indicating "do not know" in item 6. Table 5 shows teachers' performance on treatment subscale.

Table 5: Teachers' Performance on Treatment Subscale

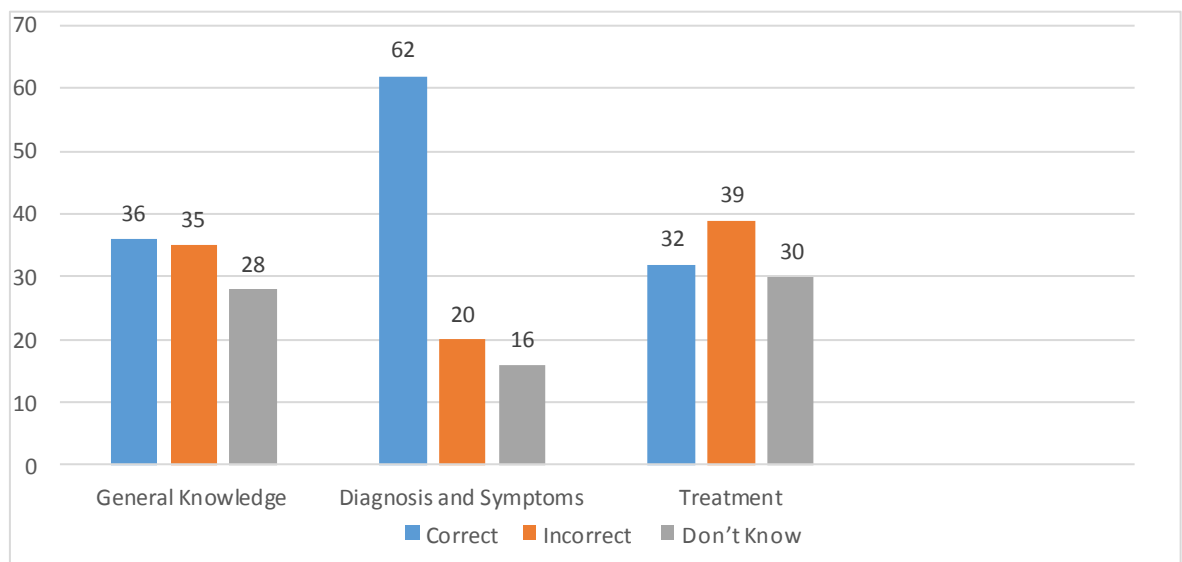
Questions	Correct Response	Correct		Incorrect		Don't Know (DK)		Total
		n	%	n	%	n	%	N
		1. Current research suggests that ADHD is largely the result of ineffective parenting skills.	F	139	36	98	47	63
6. Antidepressant drugs have been effective in reducing symptoms for many ADHD children.	T	70	23	83	28	141	47	294
13. Individual psychotherapy is usually sufficient for the treatment of most ADHD children.	F	106	35	92	31	99	33	297
17. Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.	F	55	18	175	58	71	24	301
27. Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention.	F	85	28	124	41	86	29	295
28. Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD.	F	204	68	53	18	43	14	300
29. Research has shown that prolonged use of stimulant medications leads to increased addiction (i.e., drug, alcohol) in adulthood.	F	39	13	137	46	124	41	300
Average		100	32	109	38	90	30	

Note*: Some totals are below 301 as some teachers did not respond to the item

In addition, 58% of the respondents in item 17 held the misconception that dietary intake of sugar and food additives will effectively reduce the symptoms of ADHD, and 24% showed a lack of knowledge. Moreover, teachers showed some confusions regarding individual psychotherapy as being sufficient from the treatment of most ADHD children: 31% of teachers incorrectly thought it was sufficient and 33%

indicated that they “do not know” (item 13). Teachers in this study (41%) held the misconception that behavioral/psychological interventions for children with ADHD focus primarily on inattention, and 29% showed lack of knowledge (item 27). As item 29 showed, almost half of the participants (46%) held the misconception that the use of stimulant medications leads to increased addiction in adulthood, and 41% indicated that they “do not know”. Figure 1 is a visual presentation of the results reported in Tables. It presents frequencies of teachers’ correct, incorrect and do not know responses.

Figure 1: Frequencies of Teachers’ Responses on KADDS



As the tables and figure above shows, the survey results were reported for three subscales of teacher’ general knowledge of ADHD, symptoms/diagnosis of ADHD and treatments of ADHD. Analysis results reported frequencies of correct answers ranging from 32% in treatment, 36% in general knowledge and 62% for teachers’ knowledge about diagnosis and symptoms of ADHD. Teachers (62%) seemed to be most knowledgeable about the diagnosis/symptoms subscale. Frequencies for incorrect

answers ranged from 20% in diagnosis/symptoms, 35% in general knowledge and 39% in treatment. This implies that teachers held the highest misconceptions in treatment subscale (39%) and almost as close a percentage for incorrect responses in general knowledge (35%). Frequencies for “do not know” responses varied from 30% of teachers indicating mostly that they “do not know” in the treatment subscale, to 28% of teachers indicating that they lacked knowledge about general knowledge subscale; 16% indicated that they “do not know” for the diagnosis/symptoms subscale.

4.2 Teachers’ Expectations in Relation to Gender

In this section, teachers’ responses relating to four vignettes that address two subtypes of ADHD are analyzed. Teachers provided a rating for each question on a Likert-type scale from 1 to 3 as shown below in table 4.4. Findings surfaced two themes: Teachers’ perceptions of each case in the Lebanese culture and teachers’ readiness to face each one of these cases. The last question of the vignettes (Q9) assesses teachers’ ability to identify an ADHD student. These vignettes enabled the researcher not only to study teachers’ knowledge about the subtypes of ADHD but also the underlying biases that teachers may show for boys and girls in a Lebanese context. Table 6 reports teachers’ ratings and percentages for Jamil, a hyperactive student.

Table 6: Teachers' Responses to Vignette 1

Item	Vignette 1					
	Not at all		Moderately		Extremely	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. How serious is Jamil's behavior?	54	18	93	31	51	50
2. How much would Jamil's behavior enable him to make friends?	76	25	181	60	41	14
3. How much Jamil's behavior hinders his academic progress?	20	7	79	26	199	66
4. How much of Jamil's behavior is common in our Lebanese culture?	6	2	211	70	79	26
5. How ready are you to face Jamil's behavior in your classroom?	36	12	194	64	68	23
6. How stressful would it be to have Jamil as a student?	16	5	142	47	140	47
7. Do you think that you need to provide Jamil with more attention than others?	14	5	94	31	186	62
8. How confident are you to implement an effective behavioral plan for Jamil?	49	16	157	52	94	31

4.2.1 Teachers' Perception of Jamil's Behaviors

Questions 1, 2, 3, and 4 are analyzed under this heading. As shown in table 6, half of the respondents (50%) perceived Jamil's behavior as extremely serious and 31% of teachers perceived it as moderate. Most of the teachers (60%) also believed that Jamil's behavior would, in a moderate sense, enable him to make friends and 25% believed that Jamil cannot have friends at all with such behavior. Moreover, more than half of the teachers (66%) agreed on the fact that Jamil's behavior would very much hinder his academic progress. Nearly 70% of respondents also viewed Jamil's behavior as moderately common in our Lebanese culture.

4.2.2 Teachers' Readiness to Manage Jamil's Behaviors

Questions 5, 6, 7, and 8 of vignette 1 are analyzed under this heading. According to table 6, less than two-thirds of the teachers (64%) believed that they are moderately ready to face Jamil's behavior in their classrooms and 23% of respondents believed that they are extremely well-prepared. In addition, 47% of teachers, to a moderate degree, think that it is very stressful to have a student like Jamil; however, 47% perceive having Jamil in their classroom as extremely stressful and needs to be extremely given more attention than others (62%). Of 301 teachers, more than half (52%) were moderately ready to implement an effective behavioral plan for Jamil, and 16% perceived themselves as not ready at all. Teachers' interpretations and beliefs about Jamil's case varied among respondents (Question 9). Table 7 presents teachers' personal beliefs in relation to Jamil's scenario.

Table 7: Teachers' Beliefs about Jamil's Case

Vignette 1		
Responses	Number of Responses	%
Hyperactivity	61	20
ADHD	54	18
Has psychological problems	32	12
Needs care	25	8
Spoiled	25	8
Family problems	18	6
Attention seeker	15	5
No discipline	12	4
Others (aggressive, needs love, clumsy, dangerous)	12	4
Don't know (DK)	35	12
No response	12	4
Total	301	101

Note*: The total percentage is not 100 because of rounding.

Teachers' opinions about Jamil's case varied as shown in table 4.5 with the most common response (20%) being aware that Jamil's case is a hyperactivity case. A similar proportion, 18% of teachers, linked Jamil's case as an ADHD disorder without referring to which specific subtype of ADHD. Some respondents (12%) believed that Jamil has psychological problems. Moreover, 8% of teachers thought that Jamil just needs care. Similarly, 8% of respondents perceived Jamil's behavior a result of being spoiled. Also, opinions varied between respondents, some perceiving Jamil as a child who has family problems (6%), some an attention seeker (5%), and others thought him not disciplined (4%). A smaller percentage still (4%) referred to Jamil as being an aggressive child, in need of love, clumsy and dangerous. Some teachers (12%) indicated "do not know" and 4% of respondents did not respond at all. Table 8 reported teachers' ratings and percentages for Jamila, a hyperactive student.

Table 8: Teachers' Responses to Vignette 2

Item	Vignette 2					
	Not at all		Moderately		Extremely	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. How serious is Jamila's behavior?	49	16	91	30	153	51
2. How much would Jamila's behavior enable her to make friends?	75	25	172	57	44	15
3. How much Jamila's behavior hinders her academic progress?	12	4	94	31	188	62
4. How much of Jamila's behavior is common in our Lebanese culture?	7	2	237	79	49	16
5. How ready are you to face Jamila's behavior in your classroom?	28	9	198	66	69	23
6. How stressful would it be to have Jamila as a student?	21	7	139	46	135	45
7. Do you think that you need to provide Jamila with more attention than others?	15	5	98	33	182	60
8. How confident are you to implement an effective behavioral plan for Jamila?	48	16	174	58	72	24

4.2.3 Teachers' Perception of Jamila's Behaviors

As mentioned in the previous vignette, questions 1, 2, 3, and 4 are analyzed under this heading. As table 8 shows, half of the respondents (51%) perceived Jamila's behavior as extremely serious and 30.23% of teachers perceived it as moderate. Some teachers (57%) also believed that Jamila's behavior would moderately enable her to make friends and 25% believed that Jamila cannot have friends at all with such behavior. Moreover, 62% of teachers agreed with the fact that Jamila's behavior would very much hinder her academic progress. Respondents (79%) also viewed Jamila's behavior as moderately common in our Lebanese culture.

4.2.4 Teachers' Readiness to Manage Jamila's Behaviors

Questions 5, 6, 7, and 8 of vignette 2 are analyzed under this heading. According to table 8, more than half of the teachers (66%) believed that they are ready, to a moderate extent, to face Jamila's behavior in their classrooms and 23% of respondents believed that they are extremely ready. In addition, 46% of teachers think, to a moderate extent, that it's very stressful to have a student like Jamila and 45% believe it's extremely stressful to have Jamila in their classrooms; 60% very much agree that she needs to be given more attention than others. More than half of teachers (58%) were moderately ready to implement an effective behavioral plan for Jamila, and 16% perceived themselves as not ready at all. Table 9 presents teachers' evaluations of Jamila's case (Question 9).

Table 9: Teachers' Beliefs about Jamila's Case

Vignette 2		
Responses	Number of Responses	%
Hyperactivity	81	27
ADHD	28	9
Needs care	24	8
Has psychological problems	22	7
Careless	15	5
Low achiever	14	5
Spoiled	11	4
Others (messy, aggressive, active, bad)	50	17
Do not know (DK)	29	10
No response	27	9
Total	301	101

Note*: The total percentage is not 100 because of rounding.

Teachers' opinions about Jamila's case varied as shown in table 9, with 27% of respondents being aware that Jamila is hyperactive. Other teachers (9%) perceived Jamila as having ADHD without referring to which specific subtype of ADHD. Also, 8% believed that Jamila just needs care. Responses varied, with 7% of teachers seeing that Jamila has psychological problems, 5% believing that Jamila is careless, 5% perceiving her as a low achiever and 4% viewing her as spoiled. Others (17%) described Jamila as being messy, aggressive, active, bad and lazy. Some teachers (10%) indicated that they "do not know" and 9% did not respond at all.

4.2.5 Teachers' Perceptions of Hyperactivity for Vignette 1 and 2

Table 6 and 8 showed teachers' ratings for both Jamil and Jamila, both students presenting hyperactivity behavior. Teachers' ratings for both vignettes did not really seem to differ among gender. Half of the participants (50%) perceived Jamil's behavior as extremely serious and the same for Jamila with (51%) of teachers believing the same.

A majority of teachers (60%) perceived that Jamil's behavior would moderately enable him to make friends and 57% of teachers believed the same for Jamila. More than half of teachers (66%) rated Jamil's behavior as extreme in hindering his academic progress versus 68% of teachers rating the same for Jamila. Moreover, 70% of teachers viewed Jamil's behavior as moderately common in our Lebanese society versus 78% perceiving Jamila's hyperactive acts as moderately common in the Lebanese context. Teachers (64%) rated that they were moderately prepared to deal with Jamil's behavior in their classroom and 66% of teachers rated the same for Jamila. Some teachers (45%) agreed that it is extremely stressful to have Jamil and Jamila as students in the classroom. Also, 62% of teachers perceived that Jamil, to a great extent, needs more attention than others; similarly, 60% of teachers believed the same about Jamila. More than half (52%) of respondents believed that they were moderately ready to implement an effective behavioral plan for Jamil versus 58% moderately believing the same for Jamila. Teachers' percentages and ratings of hyperactivity symptoms did not seem to differ between genders. Teachers' perceptions of hyperactivity were apparently not affected by the fact that Jamil is a boy and Jamila is a girl. Table 10 reports teachers' ratings and percentages for Jamil an ADD student.

Table 10: Teachers' Responses to vignette 3

Item	Vignette 3					
	Not at all		Moderately		Extremely	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. How serious is Jamil's behavior?	67	22	147	49	82	27
2. How much would Jamil's behavior enable him to make friends?	64	21	191	63	41	14
3. How much Jamil's behavior hinders his academic progress?	19	6	148	49	29	43
4. How much of Jamil's behavior is common in our Lebanese culture?	8	3	224	74	62	21
5. How ready are you to face Jamil's behavior in your classroom?	17	6	175	58	102	34
6. How stressful would it be to have Jamil as a student?	109	36	127	42	59	20
7. Do you think that you need to provide Jamil with more attention than others?	13	4	107	36	75	58
8. How confident are you to implement an effective behavioral plan for Jamil?	39	13	149	50	07	36

4.2.6 Teachers' Perception of Jamil's Behaviors

Questions 1, 2, 3, and 4 are analyzed under this heading as previously said.

Table 10 shows that 49% of the respondents perceived Jamil's behavior as moderately serious, 27% as extremely serious and 22% saw it as not serious at all. A majority of teachers (63%) also believed that Jamil's behavior would moderately enable him to make friends and 21% of respondents believed that Jamil cannot have friends at all with such behavior. Moreover, nearly half of the teachers (49%) agreed on the fact that Jamil's behavior would moderately hinder his academic progress, and 43% of teachers believed that Jamil's behavior would, to a great extent, hinder his academic achievement. A large proportion of respondents (74%) also viewed Jamil's behavior as moderately common in our Lebanese culture and 21% perceived it as extremely common in our culture in Lebanon.

4.2.7 Teachers' Readiness to Manage Jamil's Behaviors

Questions 5, 6, 7, and 8 of vignette 3 are analyzed under this heading. According to table 10, more than half of the teachers (58%) believed that they are moderately ready to face Jamil's behavior in their classrooms and 34% of respondents believed that they are extremely ready. In addition, 42% of teachers moderately think that it is very stressful to have a student like Jamil; however, 36% perceive having Jamil in their classroom is not at all stressful. Some respondents (58%) consider to a large extent that Jamil should be provided with more attention than others. Half of the teachers (50%) were also moderately ready to implement an effective behavioral plan for Jamil, 36% believed they were extremely ready and 13% of teachers perceived themselves as not ready at all to implement an effective behavioral plan.

Teachers' interpretations and beliefs about Jamil's case varied among respondents (Question 9). Table 11 presents teachers' personal beliefs in relation to Jamil's scenario.

Table 11: Teachers' Beliefs about Jamil's Case

Vignette 3		
Responses	Number of Responses	%
Inattention	50	17
Dreamer	35	12
Autism	32	11
Needs care	30	10
Quiet	22	7
Slow learner	16	5
Normal child	15	5
Hyper	12	4
Needs to play games	10	3
Family problems	10	3
Others (e.g., shy, lazy, needs love)	23	8
Do not know (DK)	24	8
No response	22	7
Total	301	100

Teachers' opinions about Jamil's case varied, as shown in table 11, with 17% of teachers being aware that Jamil's case is an attention deficit disorder. Other teachers (12%) perceived Jamil as a dreamer boy, and 11% believed that Jamil is autistic. Some teachers (10%) thought that Jamil just needs care. Also, 7% of them indicated that Jamil is a quiet boy and 5% of teachers perceived him as a slow learner. Teachers also responded by seeing Jamil as a normal child (5%), as hyper (4%), as needing to play games (3%), and having family problems (3%). Others (8%) perceived that Jamil is shy, lazy and needs love. Some teachers (8%) indicated that they do not know what Jamil's case is and 7 % of respondents did not respond at all. Table 12 reports teachers' ratings and percentages for Jamila an ADD student.

Table 12: Teachers' Responses to Vignette 4

Item	Not at all		Moderately		Extremely	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	1. How serious is Jamila's behavior?	79	26	149	50	62
2. How much would Jamila's behavior enable her to make friends?	62	21	192	64	41	14
3. How much Jamila's behavior hinders her academic progress?	30	10	150	50	15	38
4. How much of Jamila's behavior is common in our Lebanese culture?	10	3	238	79	49	16
5. How ready are you to face Jamila's behavior in your classroom?	19	6	177	59	00	33
6. How stressful would it be to have Jamila as a student?	105	35	137	46	50	17
7. Do you think that you need to provide Jamila with more attention than others?	5	2	110	37	74	58
8. How confident are you to implement an effective behavioral plan for Jamila?	30	10	157	52	103	34

4.2.8 Teachers' Perception of Jamila's Behaviors

As mentioned in the previous vignettes, questions 1, 2, 3, and 4 are analyzed under this heading. As table 12 shows, half (50%) of the respondents perceived Jamila's behavior as moderately serious and 26% of teachers perceived her behavior as not serious at all. A majority of teachers (64%) also believed that Jamila's behavior would moderately enable her to make friends and 21% of respondents believed that Jamila cannot have friends at all with such behavior. Moreover, half of the teachers (50%) perceived that Jamila's behavior would moderately hinder her academic progress and 38% perceived that her behavior would very much hinder her academic achievement. Respondents (79%) also view Jamila's behavior as moderately common in our Lebanese culture.

4.2.9 Teachers' Readiness to Manage Jamila's Behavior

Questions 5, 6, 7, and 8 of vignette 4 are analyzed under this heading. According to table 4.10, more than half of the teachers (59%) believed that they are moderately ready to face Jamila's behavior in their classrooms and 33% of respondents believed that they are extremely ready. In addition, 46% of teachers moderately think that it is very stressful to have a student like Jamila and 35% believed it's not stressful at all to have Jamila in their classrooms. Some respondents (58%) perceived that Jamila needs to be given much more attention than others. More than half of teachers (52%) were moderately ready to implement an effective behavioral plan for Jamila, and 34% perceived themselves as extremely ready.

Teachers' interpretations and beliefs about Jamila's case varied among respondents (Question 9). Table 13 presents teachers' personal beliefs in relation to Jamila's scenario.

Table 13: Teachers' Beliefs about Jamila's Case

Vignette 4		
Responses	Number of Responses	%
Inattention	44	15
Autism	35	12
Dreamer	29	10
Low self-confidence	22	7
Quiet	18	6
Normal child	17	6
Needs care	17	6
Hyperactive	15	5
Careless	13	4
Has a problem	8	3
Lonely	8	3
Others (e.g., poverty, worried, needs love)	15	5
Do not know (DK)	31	10
No response	29	10
Total	301	101

Note*: The total percentage is not 100 because of rounding.

Teachers' opinions about Jamila's case varied as shown in the table 13, with 15% of respondents being aware that Jamila's case is an inattention case. A proportion of teachers (12%) indicated that Jamila is autistic, and 10% perceived her as a dreamer. Some teachers (7%) thought that Jamila has low self-confidence, 6% thought she's just quiet, 6% perceived her as a normal child and 6% of teachers saw Jamila as a child who just needs care. Responses varied, with some teachers (5%) seeing Jamila as a hyperactive child. Also, 4% of teachers believed that Jamila is careless and 3% perceived her as a having a problem. Similarly 3% of respondents indicated that Jamila is lonely. Few responses were grouped as others (e.g., poverty, worried, needs love)

with 5% of teachers believing so. Also, 10% of teachers indicated that they lack knowledge regarding Jamila's case, 10% of teachers did not respond at all.

4.2.10 Teachers' Perceptions of Inattention for Vignette 3 and 4

Tables 10 and 12 presented teachers' ratings for both Jamil and Jamila showing inattention symptoms. Teachers' ratings and percentages did not apparently show any considerable difference between Jamil and Jamila in terms of gender. Half of the participants (50%) perceived Jamil and Jamila's behavior as moderately serious in both vignette 3 and 4. Some teachers (63%) believed that Jamil's behavior would moderately enable him to make friends and 64% of respondents believed the same for Jamila. Moreover, 49% of participants believed that Jamil's behavior would moderately hinder his academic progress. Similarly, half of the respondents (50%) believed so for Jamila's academic progress. Also, 74% of teachers perceived Jamil's behavior as moderately common in the Lebanese culture versus 79% of teachers perceiving Jamila's behavior as moderately common in the Lebanese context. Many teachers (58%) viewed themselves as moderately ready to face Jamil's behavior and 59% of teachers believed the same about Jamila. Some teachers (42%) rated that it is moderately stressful to have Jamil in their classroom versus 46% of teachers believing the same about Jamila. In addition, 58% of participants agreed on the fact that both Jamil and Jamila was very much in need of more attention than other students in the classroom. Half of the participants (50%) believed that they more moderately ready to implement an effective behavioral plan for Jamil and similarly 52% of teachers believed the same for Jamila.

Teachers' percentages and ratings of inattention symptoms did not seem to differ between genders. Teachers' perceptions of inattention were apparently not affected by the fact that Jamil is a boy and Jamila is a girl.

4.3 In-depth Overview of ADHD in Lebanon

Thematic analysis was used to analyze the responses of the teachers in two FGDs. In this process the FGDs were transcribed then coded. In the coding process, transcripts were read and the researcher formed codes for each passage which reflected the meaning of the passage read both as it stands and in the context of the FGDs as a whole. Afterwards, major themes and sub-themes out of these codes were identified and then each related code was listed under the relevant theme. A matrix was formed whereby each column had a major theme under which related sub themes were listed.

4.3.1 Perceptions of ADHD in Lebanon

The majority of Lebanese teachers were aware of the most common type of ADHD, namely hyperactivity. They believed that ADHD is found in children who cannot focus, keep on playing with anything and moving around in the classroom. For example, one teacher stated, "A student with ADHD for example can't focus for too long; he just plays with his books and pens. He is an extra hyper student." Another teacher illustrated,

I have this child who cuts his eraser and throws it at his friends. It is impossible to see him sitting still. I ask him to stand facing the wall to stop bothering his friends but once I turn my back, I see him rolling over the wall and playing with fliers.

Six teachers described ADHD as children who are aggressive and bully their friends. For example, one teacher described a student in her class as a child with ADHD because, “He hits his friends to seek attention. He shows aggression and carelessness to my comments.” Another teacher added, “[He is] not only aggressive but also annoying. An ADHD boy would bully his friends, hit them and act as if nothing happened in the classroom.”

Overall, most of the interviewed teachers indicated that they perceived ADHD to be a condition where children are hyperactive and restless.

4.3.2 Incidence of ADHD in boys and girls

Ten teachers perceived ADHD as being more common in boys than girls. For example, one teacher stated, “We as teachers barely notice cases of ADHD in girls. ADHD is more common and dominant in boys because they are so hyper.” Another teacher added, “I teach different grade levels and I always find ADHD in boys but not in girls at all. You see these boys always moving around and unable to focus.”

“Hyper” boys and “Tom boy” girls . As it is clear by now, our interviewed teachers were aware of the fact that ADHD boys are known by the major trait of hyperactivity. Most of the teachers used the word “hyper” for hyperactivity in boys and the majority of our participants believed that hyperactivity is dominant in boys and teachers spotted different hyperactivity cases to highlight this fact. To exemplify, one of the teachers said,

I have a student who is doing well academically but he is so hyper.

You see this kid under the tables, jumping and running the classroom.

When he has nothing to do, you see him playing with his glasses.

Moving to hyperactivity in girls, teachers believed that hyperactivity is found in few girls. Our interviewees labeled hyperactive girls with a commonly used word in our Lebanese society “Hasan Sabi” which is a synonym of “Tom boy” and described these girls as acting and talking like boys. One of the teachers said,

I have a girl in my classroom, she’s a “Tom Boy” and she’s happy about it especially when her friends call her with this name; she sits and talks like boys even. Most of the time I send her outside the classroom.

Another teacher stated, “Some girls have voices like boys as well. When we give them a remark, they don’t even listen.”

Dreamer girls and low self-confidence boys. Nine teachers reported that girls are most of the time quiet and calm. One teacher stated, “Girls are calm and sometimes dream [dream a lot], we need as teachers to give them love. Even boys when they are quiet we know it’s a sign of low self-confidence.”

Furthermore, living in another planet is another term that one of teachers used to describe an ADD girl, “Some girls, we don’t hear their voices in class, it’s like they live on another planet. I think they are shy not more because if you look at their grades, they are ok. I don’t see any problem.”

Overall, 12 teachers perceived girls as dreamers, shy and living on another planet.

4.3.3 Factors affecting ADHD

Our interviewees stated three major factors that they considered affecting ADHD children’s characteristics and gender.

Parental effect... A major factor in relation to ADHD children. Twelve of our participants put all the blame on parents and considered ADHD a result of inadequate parental discipline and lack of knowledge about ADHD. For example, one of the teachers stated,

Parents raise girls to be quiet, that's one. Two, they like boys to be hyper. Three, unfortunately ADHD is increasing - you know why? Parents raise and spoil their children in a way that they become careless, and irresponsible.

Another teacher added, "I have a student in Grade 5, a boy who is the youngest in his family. He came after four girls. His parents spoil him a lot so you see him (el ared ma hamelto) inattentive and hyper."

In fact, 12 teachers believed that parental spoiling has a major effect on ADHD.

However, three teachers perceived inadequate parental discipline and strictness to lead to an increase in ADHD symptoms. For example, one of the teachers said, "Some parents are just the opposite, very strict, tough and hit their children. Therefore, these children become so hyper, move a lot to grab attention in the classroom". Another teacher commented, "During parents' meetings, some moms come and nag about their children being hyper and ask us to threaten them in class by referring to their dad's authority."

ADHD... A genetic disorder. Four teachers stated that ADHD is genetic. One teacher said, "Well, it's genetic for sure. I use to teach at a school where some students had oxygen deficit and this had an impact on their understanding and hyperactivity."

Food and sugar effects on hyperactivity. Eight of our interviewees considered that diets and reducing sugar intakes reduce hyperactivity in students. One teacher

stated, “I believe that sugar makes these kids hyper and that’s why we need a dietician in school that can provide a healthy diet for hyperactive students.” Another teacher added, “Not only a dietician is needed, students should stop drinking coca cola which is full of sugar and parents should help and watch their children’s diet.”

4.3.4 Current practices

Teachers’ current practices with ADHD children in their classrooms varied. Teachers stated that they give extra attention to ADHD students or keep them busy. Only two teachers worked on a behavioral plan to target ADHD undesirable behaviors.

Extra attention and jealousy arising. Twelve teachers believed that ADHD children need extra attention. However, some teachers complained about the difficulty to complete the school program. For example, one teacher stated,

Honestly, I sit beside the hyper kid. I try to focus on him as much as I can but working with grade 5 and 6 is hard because the students’ work is most of the time one on one. I cannot really manage between ADHD students and non-ADHD students. I try my best to sit beside ADHD kids and give them attention.

Overall, 12 out of 16 teachers believed that ADHD children need to be given more attention than other students in their classroom. Unfortunately two teachers reported jealousy problems from non-ADHD students when they see that their teachers focused on ADHD students. For example one teacher reported a problem with a non-ADHD student and his parents by saying,

ADHD kids need care but other kids get jealous from our extra care and complain to their parents, so this is another problem. Parents come to school and report their kids’ complaints.

Another teacher added, “Parents think we are biased when we give hyperactive kids more attention and even high-achieving children start to imitate their hyperactive friends to attract our attention.”

Extra work. Seven teachers mentioned that the best way to deal with ADHD students is keeping them busy with extra work. One teacher explained that she gives them responsibilities:

I give Farid, a hyper student in my classroom, some responsibilities like erasing the board, collecting the worksheets, reading... This way he releases his energy in something helpful and this raises in him some self-confidence.

Another teacher illustrated a method she adopted to keep, Ahmad a hyperactive boy in her classroom, busy by saying,

It’s hard to control Ahmad’s level of hyperactivity, that’s why I ask him to color some drawings while I give his classmates a dictation exam. I just need to keep him busy.

In fact, the participants’ focus was on keeping ADHD children busy with anything, taking into consideration removing all pens, erasers, and books that these kids enjoy playing with.

Behavioral plan. Only two teachers used a behavioral plan to monitor ADHD children’s inappropriate behavior and thus try to reduce them as much as they can. One teacher said:

I can’t ignore the hyperactive kids in my classroom because over the year their behavior become worse and this will have a negative impact on their friends in

class. I put in a behavioral plan and monitor the behavior to see who is committed and who is not committed.

4.3.5 Unmet needs and obstacles

All our interviewees mentioned that their schools never provided them with training in dealing with ADHD children. In fact, their schools do not even have special education services. The teachers reported some obstacles they faced, such as parents' negative attitudes towards school psychologists or special educators. For example one teacher said, "[A] long time ago we had a psychologist at school but not anymore. Parents refused to collaborate [with this psychologist]."

Another obstacle teachers reported was their inability to address all students' need. Almost all teachers perceived that the effort they make with ADHD students is a personal effort with no guidance. One teacher stated:

We are not counselors but we try as much as we can as teachers to help, but our chances to succeed alone are slim especially [since] the number of students is large. It's just personal initiative.

Therefore, all teachers agreed on the fact that they need help, support and guidance in relation to ADHD children, especially since their schools do not provide either training or special education services.

4.4 Summary of Findings

It is important to explore the knowledge teachers have about ADHD and the misconceptions they hold in order to be able to provide them with help and proper training. As the results indicated, teachers responding to the KADDS questionnaire

showed a higher degree of knowledge about the symptoms/diagnosis than about the treatment or general aspects (cause, nature and outcome) of ADHD. In this regard, teachers held many misconceptions, especially about the causes of this disorder, and its outcome.

Moreover, our study aimed to explore teachers' expectations about students' gender in accordance to their ADHD subtypes. As the results showed, teachers ratings for Jamil and Jamila, the hyperactive children in vignette 1 and 2, did not significantly show any difference. Moreover, some teachers were able to identify these students as hyperactive when others perceived them as aggressive, spoiled, in need of help and care. Similarly, teachers' ratings of the inattention subtype for Jamil and Jamila in vignette 3 and 4 did not seem to differ among gender. Also, some teachers were able to identify that these children are inattentive, while others perceived them as quiet, as dreamers, in need of care and autistic.

However, our interviewees perceived that ADHD students differ according to gender. They highlighted the fact that hyperactivity is common for boys since they show high rates of externalizing behavior. In addition, they held the misconception that being quiet and dreaming are characteristics of girls which are common and normal. In this regard, teachers were not being able to make any connection on the fact that sometimes being a dreamer or quiet are signs of the inattentive subtype and cannot be ignored.

Hence, cultural factors could not but influence teachers' perceptions of ADHD in both boys and girls taking into consideration that we live in a male dominant society.

As for services and programs, no program seems to exist in Lebanon and in schools. What tends to happen is that teachers give extra work and attention to those students who they perceive as hyperactive. No other option has been discussed.

CHAPTER V

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This study investigates elementary teachers' knowledge regarding ADHD and explores how ADHD students' gender affects teachers' identification and attitudes in order to be able to adopt relevant pre-intervention models in Lebanon. The purpose of this chapter is three-fold: discussing the results obtained, drawing conclusions grounded in the participants' perspectives and connecting them to the literature, and providing implications for research and practice.

5.1 Discussion

The first aim of our study was to explore the perceptions that teachers have of ADHD students. Consequently, this section discusses the results that were obtained in relation to the two research questions of the study. Therefore this section entails a discussion on teachers' combined perceptions of ADHD and explores the role of ADHD students' gender in affecting teachers' identifications and attitudes towards ADHD. It also highlights the availability or absence of programs and services in Lebanon at this current time. Following this are the conclusions, recommendations and implications; and, finally the limitations of the study.

5.1.1 Lebanese Teachers' Understanding of ADHD

Discussion pertaining to research question 1 of this study: What knowledge do Lebanese teachers in the elementary cycle have about ADHD?

The findings of the KADDS questionnaire portray the perceptions of teachers about ADHD in relation to 3 subscales: general knowledge, diagnosis/symptoms and treatment. However, no common concept of ADHD was particularly agreed on, and many debates occurred during the FGDs.

5.1.2 Conceptions of teachers' responses to general knowledge subscale

Teachers' responses to the KADDS questionnaire varied among each of the subscales. Findings of this study indicated that only 36% of teachers answered correctly the questions of this section addressing the nature, causes and outcomes of ADHD. Based on the findings, teachers (54%) were knowledgeable about the possibility of an adult being diagnosed with ADHD. The literature points out that as many as 50% of children with ADHD will evidence symptoms of this disorder in adulthood (Barkley, 2005). Teachers (43%) were also quite aware that the prevalence of ADHD in males and females is not equivalent and this concurs with the DSM-IV TR (2000) which states that ADHD is more common in males than females. In fact, our FGDs showed up that the incidence of ADHD is more common in boys than girls as well. Also, a majority of teachers (74%) were aware that children with ADHD are more distinguishable from normal children in a classroom than in a free play situation and that the majority of ADHD children evidence poor school performance in the elementary cycle.

Teachers held many misconceptions and lacked knowledge in many items falling under this subscale.

First, participants (64%) were not aware that symptoms of ADHD vary across tasks and settings. They believed that an ADHD child who is able to focus on video games or TV for over an hour, is also able to sustain attention for at least an hour of

class or homework. On this regard, children with ADHD work best on tasks they have chosen themselves and that they find interesting. As Kleynhans (2005) says, they attend automatically to things they enjoy but can have great difficulty in doing new things or less enjoyable tasks. Moreover, teachers need to be conscious of the fact that ADHD children find it very difficult to focus on repetitive tasks as well such as homework and schoolwork.

Second, teachers (42%) did not perceive ADHD as hereditary. The literature points out that ADHD is strongly hereditary DHD (Kleynhans, 2005).

Third, teachers (56%) believed that ADHD children experience more problems in unfamiliar situations than in familiar ones. According to Badeleh (2013), children with ADHD will show fewer behavioural problems in unfamiliar surroundings than in familiar surroundings. Teachers need to take this factor into consideration since it is common to find learners with ADHD having better behavior at the beginning of the school year when exposed with new teachers, classroom and peers.

Fourth, teachers (45%) lacked knowledge about the long term outcome of ADHD. According to teachers, ADHD children outgrow their symptoms by puberty and then function normally in adulthood. However, as implied earlier, 50% of children with ADHD will evidence symptoms of this disorder in adulthood (Barkley, 2005). This implies that the seriousness of this disorder is overlooked.

Fifth, a high percentage of teachers (65%) perceived that children with ADHD display an inflexible adherence to specific routines or rituals. According to Barkley (2005), ADHD children have difficulties in inhibiting and self-regulating their behavior.

Sixth, there seemed to be incorrect views about the influence of home situations on ADHD children. Teachers (41%) perceived that that symptoms of ADHD are often

seen in non-ADHD children that come from chaotic home environments. On this regard, it is very important for teachers to know that psychosocial factors do not cause ADHD, but may lead to ADHD-like symptoms (Howe, 2010).

Seventh, participants (54%) in this study viewed that in very young children the problem of behavior of ADHD children (e.g. hyperactivity, inattention) is distinctly different from age appropriate behaviours of non-ADHD children. According to Legato (2010), ADHD-related symptoms can be seen as “behavioural immaturity” and it is difficult to distinguish ADHD symptoms until at least 3 years of age. Therefore, it is important for teachers to remember when making a referral that it is both the degree of the symptoms and their duration that will determine a diagnosis.

Eighth, teachers (44%) believed that medical doctors are necessarily able to make a definitive diagnosis of ADHD. However, there is no medical test that can confirm the diagnosis of ADHD (Kleynhans, 2005).

Ninth, teachers (49%) were unaware of the fact that depression is more frequent in ADHD children than non-ADHD children. As such, teachers did not take into consideration that many conduct disorders can be associated with ADHD such as aggression, depression and anxiety (Oliveira Pires, Da Silva, & De Assis, 2013).

In addition, ADD girls are a matter of concern. They are considered to be more at risk and of greater concern than boys as they are more likely to suffer from emotional problems such as depression, anxiety and loneliness (Maniadaki et al., 2003). A study conducted in England by Groenwald et al. (2009) has shown that ADHD in girls compared to boys is under-recognized and that unfortunately teachers have difficulty coping with, and poor knowledge of ADHD subtypes.

Tenth, teachers (39%) believed that the diagnosis of ADHD makes the child eligible for placement in special education. However, we are moving towards an inclusive education where the teachers have the responsibility to provide assistance for diverse needs of their learners, including ADHD children (Kleynhans, 2005). In fact, we are moving towards an inclusive education where the teachers have the responsibility to provide assistance for diverse needs of their learners, including ADHD children. Hence, Lebanese teachers need to be alert that ADHD is strongly hereditary and psychosocial factors do not cause it, but may lead to ADHD-like symptoms. Moreover, ADHD-related symptoms can be seen as “behavioural immaturity” and it is difficult to distinguish these symptoms until at least 3 years of age. Therefore, it is important for teachers to remember when making a referral that it is both the degree of the symptoms and their duration that will determine a diagnosis. Also, teachers in Lebanon need to take into consideration that many conduct disorders can be associated with ADHD such as depression and anxiety especially in girls. Therefore, improving teachers’ knowledge about ADHD, especially the inattentive type, could assist in tackling gender gaps and bias. In addition to the above, Lebanese teachers need to be conscious that ADHD children work best on tasks they have chosen themselves and that they find interesting and these children will show fewer behavioural problems in unfamiliar surroundings than in familiar surroundings. As mentioned earlier, it is common to find learners with ADHD having better behavior at the beginning of the school year when exposed with new teachers, classroom and peers. Furthermore, half of ADHD children will evidence symptoms of this disorder in adulthood and this implies that the seriousness of this disorder should not be overlooked.

5.1.3 Conceptions in teachers' responses to diagnosis/symptoms subscale

Moving to the diagnosis/symptoms subscale, the study's findings indicated that Lebanese teachers were very knowledgeable in this area. Findings of this study indicated that 62% of teachers responded correctly to the questions of this section addressing various symptoms of ADHD and its diagnosis. The majority of teachers were able to recognize the main characteristics of ADHD, especially the two clusters of symptoms and the fact that a child's symptoms must be present before the age of 7 in order to be diagnosed with ADHD. In addition, teachers recognized that ADHD children are frequently distracted by extraneous stimuli and they correctly identified these children as being fidgety. Moreover, teachers were conscious of the fact that symptoms of ADHD have to be present in two or more settings before the diagnosis. Also, nearly 80% of the teachers were aware that ADHD children have problems in organizing tasks and activities. Apparently, teachers' high level of knowledge of ADHD symptoms is the result of their actual classroom experiences of teaching ADHD students. This could also be explained by the fact that students showing the hyperactive type are easily identified by teachers since they always move around in the classroom and/or recess, show many disruptive behaviors and thus they are unable to concentrate on their tasks or classroom work.

Most teachers held many misconceptions and lacked knowledge in many items falling under this subscale.

First, 48% of Lebanese teachers believed that ADHD children have an inflated self-esteem and grandiosity. However, according to Scituito et al. (2000), the symptoms of ADHD often leave the child with a poor sense of being and having poor coping strategies and an impaired sense of efficacy.

Second, findings of this study showed that around 40% of teachers in Lebanon confuse symptoms of ADHD and symptoms of Conduct Disorder such as aggression. Half of the teachers believed that being physically cruel to other people is a symptom of ADHD and that ADHD children often have a history of stealing or destroying other peoples' things. However, teachers need to recognize that physical cruelty is a symptom that is associated with Conduct Disorder, and stealing and destroying are symptoms of Conduct Disorder and not ADHD (DSM-IV TR, 2000). This confusion between the two disorders arose also in the FGDs where some teachers had incorrect perceptions of ADHD and linked the ADHD student with words that describe Conduct Disorder symptoms such as aggression and hitting. Our findings concur with Hong (2008), whose study aimed to understand the perspectives of teachers who taught children with ADHD. Findings of Hong's study indicated that Korean teachers lack knowledge about ADHD and face problems in distinguishing ADHD from other disorders (Hong, 2008).

5.1.4 Misconceptions in teachers' responses to treatment subscale

Based on the findings, teachers (68%) were knowledgeable that punishment is not the most effective treatment in reducing the symptoms of ADHD. Clearly, teachers knew that punishment is not effective at changing behavior. Positive feedback and incentives should be used before punishment (Kovshoff et. al., 2012). Sadly, interviewees in both FGDs reported that parents of hyperactive students still resort to hitting, punishing and threatening their kids with the father (as an authority figure). Lebanese parents' attitude with their ADHD children concur with the Korean society where harsh parenting practices, and obedience are an essential value to family harmony and functioning (Oh et. al., 2012). According to Oh et al. (2012), authoritarian parenting

practices are associated with poor social adjustment skills and more anxiety and aggression in children. Consequently, inadequate parental discipline has been suggested as one of the factors that could lead to a greater severity of the symptoms (Howe, 2010). An affectionate parenting attitude is important in preventing behavioral problems in ADHD children. Therefore, not only teachers but also parents need to open up to more educational strategies to cope with their children.

Teachers held many misconceptions and lacked knowledge in many items falling under this subscale. Apparently, teachers' lack of knowledge about the cause of ADHD influenced their views about treatment.

First, half of the participants (50%) believed that ADHD is the result of ineffective parental skills. Similarly, interviewees in both FGDs believed that parental spoiling has a big effect on ADHD. Lebanese teachers' beliefs also concur with previous findings in the literature where 65% of Turkish teachers believed so (Naim & Kavakci, 2010) and 53% of Iranian teachers believing that it is the consequence of parental spoiling (Ghanizadeh et. al., 2005). Thus, teachers need to be aware that parenting skills are factors that may have an impact on ADHD but surely do not cause it. As mentioned previously inadequate parental discipline (being very harsh or spoiling a lot) has been suggested as one of the factors that could lead to a greater severity of the symptoms.

Second, Lebanese teachers (47%) lacked knowledge of the affectivity of antidepressant drugs in reducing symptoms of ADHD. Based on previous research, there are three types of medication: stimulants, antidepressants, and antihypertensive (Barkley & Mash, 2006); and medication was highly recommended for ADHD children by 60% of the teachers in Gregg's (2005) study findings.

Third, a widely accepted myth that has emerged recently infers that “special diets are effective treatments for ADHD” (Weyandt et. al., 2009). Interestingly, teachers (58%) believed in this myth and our interviewees held similar views and considered that diets and reduced sugar intakes will reduce hyperactivity in students. Teachers need to be aware that this is a myth and that this form of treatment gives false hope for a quick cure and will actually delay effective treatments.

Fourth, teachers in this study (31%) believed that individual psychotherapy is usually sufficient for the treatment of most ADHD children. However, according to Krowski (2009) treatment of ADHD should occur in all the domains where the child experiences difficulties. Teachers play a major role in the intervention program of these children and their knowledge about ADHD is a pre-requisite to be able to make referrals and provide correct information for the diagnosis process.

Fifth, teachers in this study (41%) viewed that behavioral/psychological interventions for children with ADHD focus primarily on the child’s problems with inattention. In fact, behavioural and psychological interventions focus on all symptoms of ADHD, not only inattention and the managing of these symptoms (Morisoli & McLaughlin, 2006). Therefore, teachers play an integral role in implementing these behavioural interventions, such as positive reinforcements to manage their classrooms.

Sixth, teachers (46%) thought that the use of stimulant medication leads to increased addiction in adulthood. However, according to Kleynhans (2005) there is little evidence in the literature that stimulant treatment of children with ADHD increases the risk of later substance abuse.

In fact, teachers need to be conscious that parenting inadequate discipline such as spoiling and/or being strict and harsh do not cause ADHD but indeed, they lead to a

greater severity of the symptoms. Also, teachers need to be aware that there are three types of medication used for treating ADHD and antidepressants are considered one of these treatments. In addition, teachers, as mentioned previously in the literature, play a major role in the intervention program, their knowledge about ADHD is a pre-requisite to be able to make referrals and provide correct information for the diagnosis process.

5.1.5 Teachers Abilities to Differentiate Between ADHD Boys and Girls in Lebanon

Discussion pertaining to research question 2 of this study: How does ADHD students' gender affect elementary teachers' perceptions of ADHD?

Analysis of the four vignettes portrayed the perceptions of teachers about the hyperactivity subtype of ADHD in Jamil and Jamila versus the inattentive subtype. In vignette 1 and 2, both Jamil and Jamila's behavior was perceived by Lebanese teachers as extremely serious and stressful, severely hindering their academic progress and thus much more in need of extra attention than others. For our participants this hyperactive behaviour was rated as moderately common in Lebanese society and most teachers considered themselves moderately ready to implement an effective behavioural plan. Teachers' ratings of hyperactivity did not seem to differ between genders.

However, the literature pointed out that hyperactivity symptoms are perceived with high rates in boys in specific. According to Maniadaki et al. (2003), boys' high rates of hyperactivity make it easier for teachers to identify while it is hard for girls to be identified since they are known as quiet in most societies. Also, Cole's et al. (2013) findings showed that boys with ADHD typically show levels of hyperactivity and disruptiveness, and other externalizing symptoms that teachers easily perceive. In fact, the majority of interviewed teachers in both FGDs held the same opinion as Maniadaki

et al and Coles et al., whose studies referring to the dominance of “hyper” boys versus a few girls they called “Hasan Sabi” or “Tom Girl”, who performed like boys. The majority of our participants perceived that most girls they encountered were quiet. Thus, there was an inconsistency between teachers’ ratings of the vignettes and their thoughts during the FGDs.

5.1.6 Interpretation of Hyperactivity between Jamil and Jamila

Surprisingly, few teachers (20%) were able to recognize that Jamil is a hyperactive boy and likewise 27% of teachers recognized that Jamila is a hyperactive girl. Some teachers perceived their case as an ADHD case without referring to which subtype of ADHD. The most common interpretations of Jamil and Jamila basically fell into two categories which were either labelling the problem or providing treatments for it. Teachers’ most common labels for students were: aggressive, careless, spoiled, and messy. The most common treatments that they provided for Jamil and Jamila were basically providing them with care, and the need of a psychologist since these kids have psychological problems, and providing them with love. Additionally, around 19% of teachers either did not know or did not respond.

In fact, few Lebanese teachers were able to recognize that Jamil and Jamila are hyperactive kids and their wrong interpretations highlight the fact that these teachers lack knowledge about ADHD subtypes and thus lack the identification procedures in this regard. Most probably, Lebanese teachers looked at Jamil and Jamila’s behavior as moderately acceptable in the Lebanese culture. This could be an explanation for their inability to link these students’ behavior to hyperactivity.

Teachers' ratings of vignette 3 and 4, tackling the inattentive subtype of ADHD, did not significantly differ between genders. Both Jamil's and Jamila's behaviour were perceived by Lebanese teachers as moderately serious and stressful and moderately hindering their academic progress. For our participants this inattentive behavior was rated as moderately common in the Lebanese culture and most teachers considered themselves as moderately ready to implement an effective behavioral plan. Teachers' perceptions of inattention behavior were apparently not affected by the gender. However, the majority of interviewees in both FGDs held different opinions and believed that inattentive behavior is uncommon for boys and it may be a sign of low self-confidence. Moreover, they held misconceptions of inattentions in girls by describing them as dreamers and living on other planets. Interviewees' opinions were aligned with Sciutto et al.'s (2004) findings which highlight the fact that ADD girls tend to show low levels of hyperactivity and high levels of internalizing symptoms. This pattern of symptoms is less likely to disrupt the classroom and thus, it is overlooked by teachers. Therefore, our interviewees' misinterpretation of Jamila's case as an ADD girl can be explained by the socio-cultural expectations among societies. In the Lebanese culture, hyperactivity is commonly referred to boys and quietness is referred to girls. Lebanese teachers overlook these girls since they do not disturb the classroom. Accordingly, Lebanese teachers' understanding of ADHD is linked to hyperactivity that is dominant in males.

5.1.7 Interpretation of Inattention between Jamil and Jamila

Surprisingly, few teachers (17%) were able to recognize that Jamil is an inattentive boy and only 15% of teachers recognized that Jamila has ADD. Some

teachers perceived their case as an ADHD case without referring to which subtype of ADHD. The most common interpretations of Jamil and Jamila basically fell into two categories, which were either labelling the problem or providing treatments for it. Teachers' most common labels for students were: Autistic, dreamers, quiet, lonely, lazy and slow learner. The most common treatments that they provided for Jamil and Jamila were basically providing them with care, and love. Additionally, around 15% of teachers' either did not know or did not respond.

In fact, few Lebanese teachers were able to recognize that Jamil and Jamila have ADD. In this regard, it is very important to point out that teachers' misidentification of inattention symptoms would lead to problems in referring the students. Results of this study points out that the seriousness of this disorder is overlooked by most Lebanese teachers who perceived that students exhibiting the inattention subtype are just in need of care and love.

5.2 Services and Training

As Lebanese teachers indicated, virtually no programs or services are provided that are specially catered for ADHD students. Interviewees in both FGDs basically provide personal help to ADHD students without any assistance from a counsellor or a specialist. The enhancement activities, according to our interviewees, include extra attention to these students, extra work to keep them busy, extra activities and perhaps one or two teachers used a behavioral plan to monitor these students' behavior. This extra work was made to keep the student in their seat as not to disrupt the class, as discussed by many teachers in this study.

According to Morisoli & McLaughlin (2006), teachers' knowledge about behavioral interventions have a big impact on ADHD. Unfortunately, only two teachers slightly mentioned these interventions. Moreover, Brook, Watemberg, and Geva (2002) emphasized the importance of training in relation to teachers' knowledge of ADHD. The majority of our participants mentioned that their schools do not even have special education services and they do not receive any training about ADHD.

All schools in Lebanon, whether public or private, must follow a national curriculum mandated by the Ministry of Education and Higher Education (MEHE). The scope of special education in Lebanon is limited to students with disabilities only, as there is no mention concerning ADHD by either Lebanese law, or the revised national curriculum. This explains why no mention was made about services, programs and training that are provided in this study, because they simply do not exist. The only activity that was reported in this study was the personal effort teachers make and the excessive use of extra attention and work.

5.3 Conclusion

5.3.1 Lebanese Teachers' Vision of ADHD

Today, ADHD is characterized as a developmental, neurobiological condition defined by the presence of severe and pervasive symptoms of inattention, hyperactivity and impulsivity (Daley & Birchwood, 2010). In the Lebanese culture, the term "hyper" was highly used to characterise the whole concept of ADHD. Lebanese teachers look at the external symptoms that are easily perceived in the classroom such as: Fidgeting, moving around, playing with their stuff, to exemplify ADHD students. Thus, the term "hyper" has been extensively used by teachers. Interestingly, findings of this study

highlight on the fact that teachers revealed many confusions when labelling these students. ADHD students particularly boys were labelled as hyper and/or aggressive and girls were perceived as dreamers, quiet and/or autistic by a majority of teachers.

From another perspective, teachers' misunderstanding of the concept of ADHD could be explained by the lack of qualified specialists to train them and the absence of Lebanese policy to cater ADHD students especially that 80% of participants indicated that they haven't received any training related to ADHD at their schools.

5.3.2 Current Identification Procedures

Regarding identification and assessment, there is no identification procedure because of the absence of an official definition, or a commonly accepted definition for ADHD. In addition, there is no official and standard identification procedure in schools. What usually happens is, as reported by teachers, is that they offer personal help in assisting ADHD students. What they basically do is provide these students with extra attention and extra work to keep them busy. Most of the teachers identify their students by the external behavior they show. However, all teachers in both FGDs particularly said that they do not have an official identification procedure in their school. Therefore, no behavioural interventions are applied and the services depend on teachers' personal effort and not on a well-structured program. We can conclude that we are losing a lot of students for not being identified then served.

5.3.3 Culture, Parenting Style and ADHD

Perhaps, one of the major misconceptions that came up in the study relates to parents' inadequate discipline. According to the literature, cultural differences are

important issues to consider because they depend to a great extent on the background culture of the family and teachers' perceptions of ADHD children (AAP, 2009). In fact, Lebanese teachers believe that ADHD is a consequence of parental spoiling and/or parental harshness. As mentioned earlier in the literature, inadequate parental discipline has been suggested as one of the factors that could lead to a greater severity of the symptoms. On this regard, not only teachers but also parents in the Lebanese culture need to be aware of the symptoms of ADHD, their causes and the possible intervention methods they can adopt with their children. Therefore, instead of threatening ADHD children with the father's figure or spoiling them, creating a positive learning environment could help Lebanese teachers, parents, and ADHD students.

One of the major findings was how gender plays a role in identifying ADHD students in Lebanon. Almost all teachers in this study mentioned that there are more ADHD boys than ADHD girls. Moreover, the Lebanese society and Lebanese school practices view ADHD students as mostly boys. According to the literature, this is not only a Lebanese problem, but over the world boys are being referred disproportionately more frequently than girls (Sciutto et. al., 2004). According to Coles et al. (2013) this difference in referral rates may be the result of gender differences in the expression of ADHD symptoms. Lebanese teachers as mentioned earlier defined ADHD by referring to the word 'hyper' and particularly exemplified boys with ADHD typically showing high rates of hyperactivity, and disruptiveness. However, Lebanese teachers referred to girls showing the ADD type as dreamers and quiet. These girls are overlooked by teachers in the Lebanese context. Possibly, this can be explained by the fact that Lebanon is a male dominant society.

5.4 Implications

This section focuses on suggesting implications for practice, planning, and implications for further research.

5.4.1 Implications for Practice and Planning

Many teachers admitted that they need help with ADHD students and that, in particular, they perceive that their chances of succeeding alone are very small. We can go on from here and provide more workshops and seminars in order to make more teachers aware of ADHD students' characteristics and identification procedures. More importantly, we should start based on the research findings with teachers and students in Lebanon. We should also address the needs of ADHD students as best as we can by understanding cultural difference in identifying them. Teachers are the most valuable source in the assessment process and in order to make good referrals, they need to be knowledgeable about the assessment tool in order to make proper referrals of ADHD students.

5.4.2 Implications for Further Research

In this study, we explored teachers' knowledge of ADHD in terms of general knowledge, symptoms/diagnosis, treatment, and their perceptions of ADHD in relation to students' gender. Perhaps future studies could tackle teachers' self-efficacy and willingness to incorporate effort with ADHD students. Moreover, overlaps arose between ADHD (hyperactivity in particular) and Conduct Disorder (aggression in particular) and between ADD and autism. Future research could study the difference among these disorders. Since this study has helped conceptualize the current views and

misconceptions about ADHD, the next research studies could include more in depth analysis of identification procedures. Further study is needed to learn about ADHD from students' and parents' perspectives as well, in addition to other school stakeholders (e.g. counselors and principals). In addition, further studies could target other school levels, for example, middle and secondary schools.

Some of the teachers talked about the need for the Ministry of Education and Higher Education (MEHE) to provide a standard checklist or something that teachers can use, and to provide facilities for ADHD students. This was a recommendation made by some of the teachers. Thus, one recommendation for policy makers and decision makers in the MEHE, is that they can set up workshops and seminars about ADHD, so that teachers can have a broader view about ADHD in particular, and will have a clearer idea of how to identify an ADHD boy and girl, while taking the Lebanese culture into consideration, without solely relying on the child's attitude in the classroom and whether they are active or quiet. Awareness campaigns for parents' education could be initiated also because parents are seen as obstacles for some teachers.

Another recommendation would be better to include counselors and principals in the study, as they are important school stakeholders as well. Counselors and diagnosticians can use multiple criteria for assessing ADHD students, and not just focus on the behaviors that they show. They can also teach the teachers how to assess and identify ADHD students and work together to address students' needs. Therefore, it would be very beneficial to provide programs for counsellors and have counselling rooms in every school to address all teachers and students' needs.

5.4.3 Strengths and Limitations of the Study

The fact that this study includes a large sample makes it representative. Also, this study has been conducted in both private and public schools, using qualitative and quantitative methods (surveys & FGDs) is first to be done with Lebanese teachers especially in public schools and in the south of Lebanon.

There were very few limitations in this study. One limitation is that only two FGDs were conducted. Another limitation is that this study was conducted in only two areas in South of Lebanon so it does not represent all especially that this study is about teachers' perceptions of ADHD in Lebanon, it would be better to include more cities and town.

APPENDIX A

Demographics Questionnaire

1) Gender:

_____ Female _____ Male

2) School:

_____ Public _____ Private

3) Which grade level do you teach?

_____ Grade

4) How long have you been teaching?

_____ years _____ months

5) What is your highest level of education?

___ BA ___ BS ___ MA ___ TD ___ Other (please specify: _____)

6) Have you received previous training related to ADHD at school?

_____ Yes _____ No

Knowledge of Attention Deficit Disorders Scale (KADDS)

Please answer the following questions regarding Attention-Deficit/Hyperactivity Disorders (ADHD). If you are unsure of an answer, respond Don't Know (DK), DO NOT GUESS.

True (T), False (F), or Don't Know (DK) (circle one):

1. T F DK Current research suggests that ADHD is largely the result of ineffective parenting skills.
2. T F DK ADHD children are frequently distracted by extraneous stimuli.
3. T F DK In order to be diagnosed with ADHD, the child's symptoms must have been present before age 7.
4. T F DK ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.
5. T F DK One symptom of ADHD children is that they have been physically cruel to other people.
6. T F DK Antidepressant drugs have been effective in reducing symptoms for many ADHD children.
7. T F DK ADHD children often fidget or squirm in their seats.
8. T F DK It is common for ADHD children to have an inflated sense of self-esteem or grandiosity.
9. T F DK It is possible for an adult to be diagnosed with ADHD.
10. T F DK ADHD children often have a history of stealing or destroying other people's things.
11. T F DK Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity.
12. T F DK Symptoms of depression are found more frequently in ADHD children than in non-ADHD children.
13. T F DK Individual psychotherapy is usually sufficient for the treatment of most ADHD children.
14. T F DK Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.
15. T F DK In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school).

16. T F DK If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.
17. T F DK Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.
18. T F DK A diagnosis of ADHD by itself makes a child eligible for placement in special education.
19. T F DK ADHD children often have difficulties organizing tasks and activities.
20. T F DK ADHD children generally experience more problems in novel situations than in familiar situations.
21. T F DK There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD.
22. T F DK In school age children, the prevalence of ADHD in males and females is equivalent.
23. T F DK In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children.
24. T F DK Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation.
25. T F DK The majority of ADHD children evidence some degree of poor school performance in the elementary school years.
26. T F DK Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments.
27. T F DK Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention.
28. T F DK Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD.
29. T F DK Research has shown that prolonged use of stimulant medications leads to increased addiction (i.e., drug, alcohol) in adulthood.
30. T F DK Children with ADHD generally display an inflexible adherence to specific routines or ritual.

Vignette 1

Jamil is an 8-year old boy. Jamil’s teacher describes him as always moving around in the classroom, disrupting his friends instead of doing his work. His teacher says that Jamil tries to find a comment for everything she says and doesn’t listen to her instructions despite her constant remarks. He starts work late on his assignment because he’s always playing with his pens and anything else on his desk. When correcting the assignment, he shouts out answers randomly and interrupts his teacher. He constantly has excuses and requests to leave the classroom and go to the bathroom. During recess, Jamil with a group of boys run around the playground, bump into their classmates and throw their sandwiches. When punished, he shows carelessness and persists with his behaviors and attitudes. According to his parents, Jamil never seems to focus on what they ask him to do, even if they repeat more than once. “He often wants to grab attention by shouting and disturbing everyone at home” said his mom.

1. How serious is Jamil’s Behavior?
1-----2-----3
not at all moderately extremely

2. How much would Jamil’s behavior enable him to make friends?
1-----2-----3
not at all moderately extremely

3. How much would Jamil’s behavioral hinder his academic progress?
1-----2-----3
not at all moderately extremely

4. How much of Jamil’s behavior is common in our Lebanese culture?
1-----2-----3
not at all moderately extremely

5. How ready are you to face Jamil’s behavior in your classroom?
1-----2-----3
not at all moderately extremely

6. How stressful would it be to have Jamil as a student?
1-----2-----3
not at all moderately extremely
7. Do you think that you need to provide Jamil with more attention than others?
1-----2-----3
not at all moderately extremely
8. How confident are you to implement an effective behavioral plan for Jamil?
1-----2-----3
not at all moderately extremely
9. In your opinion, what is Jamil's case?

Vignette 2

Jamila is an 8-year old girl. Jamila’s teacher describes her as always moving around in the classroom, disrupting her friends instead of doing her work. Her teacher says that Jamila tries to find a comment for everything she says and doesn’t listen to her instructions despite her constant remarks. She starts work late on her assignment because she’s always playing with her pens and anything else on her desk. When correcting the assignment, she shouts out answers randomly and interrupts her teacher. She constantly has excuses and requests to leave the classroom and go to the bathroom. During recess, Jamila with a group of girls run around the playground, bump into their classmates and throw their sandwiches. When punished, she shows carelessness and persists with her behaviors and attitudes. According to her parents, Jamila never seems to focus on what they ask her to do, even if they repeat more than once. “She often wants to grab attention by shouting and disturbing everyone at home” said her mom.

1. How serious is Jamila’s Behavior?
 1-----2-----3
 not at all moderately extremely

2. How much would Jamila’s behavior enable her to make friends?
 1-----2-----3
 not at all moderately extremely

3. How much would Jamila’s behavioral hinder her academic progress?
 1-----2-----3
 not at all moderately extremely

4. How much of Jamila’s behavior is common in our Lebanese culture?
 1-----2-----3
 not at all moderately extremely

5. How ready are you to face Jamila’s behavior in your classroom?
 1-----2-----3
 not at all moderately extremely

6. How stressful would it be to have Jamila as a student?
1-----2-----3
not at all moderately extremely
7. Do you think that you need to provide Jamila with more attention than others?
1-----2-----3
not at all moderately extremely
8. How confident are you to implement an effective behavioral plan for Jamila?
1-----2-----3
not at all moderately extremely
9. In your opinion, what is Jamila's case?

Vignette 3

Jamil is an 8-year old boy. Jamil’s teacher describes him as a day dreaming yet a behaved student in the classroom. His academic competence is a bit behind his grade level. His teacher says that Jamil chooses to sit in the back of the classroom beside the window and spends much of class time looking at the window. When asked to complete a written assignment, Jamil starts working attentively at first, but then he easily gets distracted by extraneous stimuli (like noises in the hall) and he seemed not to listen when the teacher speaks directly to him. After repeated instructions from his teacher, Jamil goes back to work but this time too confused to get started. He also had great difficulty switching from one task to another throughout the day added his teacher. During recess, the teacher says that Jamil doesn’t harm anyone; he sits on the bench, eats his sandwich and plays with Sami every day. According to his parents, Jamil is a quiet and calm Son. They feel that they need to repeat themselves when explaining and helping with his homework because he loses focus easily. “He often seems to be living in her own world” said his mom.

1. How serious is Jamil’s behavior?
1-----2-----3
not at all moderately extremely
2. How much would Jamil’s behavior enable him to make friends?
1-----2-----3
not at all moderately extremely
3. How much would Jamil’s behavior hinder his academic progress?
1-----2-----3
not at all moderately extremely
4. How much of Jamil’s behavior is common in our Lebanese culture?
1-----2-----3
not at all moderately extremely
5. How ready are you to face Jamil’s behavior in your classroom?
1-----2-----3
not at all moderately extremely

6. How stressful would it be to have Jamil as a student?
1-----2-----3
not at all moderately extremely
7. Do you think that you need to provide Jamil with more attention than others?
1-----2-----3
not at all moderately extremely
8. How confident are you to implement an effective behavioral plan for Jamil?
1-----2-----3
not at all moderately extremely
9. In your opinion, what is Jamil's case?

Vignette 4

Jamila is an 8-year old girl. Jamila’s teacher describes her as a day dreaming yet a behaved student in the classroom. Her academic competence is a bit behind her grade level. Her teacher says that Jamila chooses to sit in the back of the classroom beside the window and spends much of class time looking at the window. When asked to complete a written assignment, Jamila starts working attentively at first, but then she easily gets distracted by extraneous stimuli (like noises in the hall) and she seemed not to listen when the teacher speaks directly to her. After repeated instructions from her teacher, Jamila goes back to work but this time too confused to get started. She also had great difficulty switching from one task to another throughout the day added her teacher. During recess, the teacher says that Jamila doesn’t harm anyone; she sits on the bench, eats her sandwich and plays with Lea every day. According to her parents, Jamila is a quiet and calm daughter. They feel that they need to repeat themselves when explaining and helping with her homework because she loses focus easily. “She often seems to be living in her own world” said her mom.

1. How serious is Jamila’s behavior?
1-----2-----3
not at all moderately extremely

2. How much would Jamila’s behavior enable her to make friends?
1-----2-----3
not at all moderately extremely

3. How much would Jamila’s behavior hinder her academic progress?
1-----2-----3
not at all moderately extremely

4. How much of Jamila’s behavior is common in our Lebanese culture?
1-----2-----3
not at all moderately extremely

5. How ready are you to face Jamila’s behavior in your classroom?
1-----2-----3
not at all moderately extremely

6. How stressful would it be to have Jamila as a student?
1-----2-----3
not at all moderately extremely
7. Do you think that you need to provide Jamila with more attention than others?
1-----2-----3
not at all moderately extremely
8. How confident are you to implement an effective behavioral plan for Jamila?
1-----2-----3
not at all moderately extremely
9. In your opinion, what is Jamila's case?

APPENDIX B

Protocol of Focus Group Discussion with Teachers

Location: _____ **Date:** _____ **Time:** _____

School: _____ **Number of teachers:** _____

(5 min.) Introduction

1. Greeting.

Hello everyone. I would like to thank you all for participating in this focus group session. My name is Hala Berri and I am a Master student working on my thesis at the American University of Beirut. Our session will last 60 minutes. I would like to have an in depth understanding of your knowledge about ADHD. Before I begin I would like to share with you some ground rules:

- Everyone should Participate, raise concerns or give opinion
- Confidentiality of names/comments/responses
- Respect opinions (no right or wrong), free to say whatever you want
- Speak one at a time and as clearly as possible
- Stay with the group and please don't have side conversations

2. Purpose of the Focus Group Discussion.

It is an opportunity to explore your current knowledge about ADHD in Lebanon, and ADHD students' gender and its implications on your perceptions of ADHD subtypes.

(50 min.) Discussion

Opening statement: In this focus group we are going to discuss a number of things. Kindly, provide your input on the following questions:

1. From your perspective how would you define ADHD in the Lebanese context? What are the characteristics of an ADHD student in Lebanon?

Possible probes: what do you know about ADHD? What are the characteristics that you look for when identifying a student as ADHD? What sort of behaviors do you expect ADHD students to have?

2. Do you think there is any difference between the characteristics of boys and girls with ADHD?

Possible probes: What are the unique characteristics if any that you are able to recognize in a girl with ADHD?

3. How do identify ADHD students in your class?

Possible probes: What are the current practices in identifying ADHD students in your class?

For example, is there a type of protocol that you follow? Describe a student that you consider(ed) ADHD. Include his/her characteristics and what particularly stood out about him/her that led you to think s/he was ADHD.

4. Does your school provide special education services for ADHD students? If yes, describe them.
5. What kind of training if any have you received that prepared you to work with ADHD students?

Possible probes: Does your school provide trainings?

(5 min.) Closing Comments

The researcher will provide a summary of the points discussed and will ask the participants for any final thoughts or comment.

Thank you for your time and input. You were very helpful.

APPENDIX C

IRB FORMS (CONSENT FORMS TO PRINCIPALS AND TEACHERS)

American University of Beirut

Department of Education

School Director Permission Letter

Study Title: Teachers' Conceptions and Misconceptions about ADHD in Lebanon

Researchers: Dr. Anies Al Hroub and Miss Hala Berri

Dear Principal,

We are requesting your approval to participate in a research study under the Institutional Review Board (IRB) for human rights regulations. We are asking permission to distribute around 15 surveys in your school, and whether they would like to participate in a Focus Group Discussion (FGD). Participation is completely voluntary. Please read the information below and feel free to ask any questions you may have. We will contact the school principals and teachers in person, using the direct approach.

A. Project Description

This research is being conducted with the goal of completing a Masters' thesis in Educational Psychology and possibly presentation at academic conferences.

The purpose of this study is to: (1) interpret elementary teachers' current knowledge about ADHD in Lebanon, and (2) explore ADHD students' gender and its implications on teachers' perceptions of ADHD subtypes.

If the principal consent is obtained, the researcher will distribute 15 surveys in the teachers' room. In case more teachers will show interest than the target number, the ones with the longest years of experience will be chosen. The researcher will also conduct two focus group discussions with elementary teachers in private and public schools. The expected number of participants is: up to 300 teachers for the survey, and around 8-12 teachers for the Focus Group Discussion. In case more than 12 teachers showed interest in FGDs, the Co-investigator will choose the ones with the longest teaching experience. The surveys include a demographics questionnaire, the Knowledge of Attention Deficit Hyperactivity Disorder (KADDS) questionnaire to measure teachers' knowledge about ADHD symptoms, nature, causes, and treatment. The surveys also include 4 vignettes that describe 4 elementary school aged students (2 boys and 2 girls) that show different subtypes of ADHD and teachers will provide a rating for each vignette and identify with justification each case. During the focus group

discussions, the researcher will audio-tape the interviews so that they can be written and analyzed later on. The duration for completion each tool is as follows: Survey Packet completion is 20 minutes. Each FGD will take around 60-90 minutes and will take place either at one of the schools' library or teachers' lounge.

The estimated time for the completion of this study is 6 months, and three months for the school field work.

B. Risks and Benefits

Your participation in this study does not involve any physical risk or emotional risk to you beyond the risks of daily life. You have the right to withdraw your consent or discontinue participation at any time for any reason. Your decision to withdraw will not involve any penalty or loss of benefits to which you are entitled. Discontinuing participation in no way affects your relationship with AUB. In addition, refusal to participate in the study will involve no penalties of any kind or affect the teacher's relationship with AUB or the school.

The School receives no direct benefits from participating in this research. However, the participation of the elementary teachers in your school will help researchers better understand Lebanese teachers' conceptions and misconceptions about ADHD in Lebanon.

C. Confidentiality

If you agree for your teachers to participate, all information will be kept confidential. To secure the confidentiality of your teachers' responses, their names and other identifying information will never be attached to their answers. Data provided by the teacher will not be shared by any other teacher or the school principal. All codes and data are kept in a locked drawer in a locker room or in a password protected computer that is kept secure. Data access is limited to the Principal Investigator and researchers working directly on this project. All data will be destroyed responsibly after the required retention period (usually three years.) Your teachers' privacy will be maintained in all published and written data resulting from this study. Their names or other identifying information will not be used in our reports or published papers.

D. Contact Information

If you have any questions or concerns about the research you may contact Dr. Anies Al Hroub at 01-350000 ext 3053 or by email: aa111@aub.edu.lb or Miss Hala Berri at 03-686169 / 78-838884 or by email: hmb11@mail.aub.edu. If I feel that my questions have not been answered, I can contact the Institutional Review Board for human rights at 01-374374, ext: 5445 or by email: irb@aub.edu.lb.

E. Participant rights

Participation in this study is voluntary. You are free to leave the study at any time without penalty. Your decision not to participate is no way influences your relationship with AUB. A copy of this consent form will be given to you.

F. Signing the Consent Form

If you agree to grant us approval to administer the research at your school, please

sign below:

Principal's name: _____

Consent of the principal: _____

Date: _____

Time: _____

Location: _____

Co-Investigator's Signature: _____

Principal Investigator: Dr. Anies Al-Hroub
Address: American University of Beirut
Department of Education
Associate Professor of Educational Psychology and
Special Education
Phone (00961-350000-3053)
Email: aa111@aub.edu.lb

Co-Investigator: Ms. Hala Berri
Address: American University of Beirut
Department of Education
Beirut, Lebanon
Phone: 03686169
Email: hmb11@mail.aub.edu

American University of Beirut
Department of Education
Teacher Consent Form
Direct Approaching

Dear teacher,

We are requesting your approval to participate in a research study under the Institutional Review Board (IRB) for human rights regulations. Participation is completely voluntary. Please read the information below and feel free to ask any questions you may have.

A. Project Description

This research is being conducted with the goal of completing a Masters' thesis in Educational Psychology and possibly presentation at academic conferences.

The purpose of this study is to: (1) interpret elementary teachers' current knowledge about ADHD in Lebanon, and (2) explore ADHD students' gender and its implications on teachers' perceptions of ADHD subtypes.

If the principal consent is obtained, the researcher will use surveys, and two focus group discussions with elementary teachers in private and public schools. The expected number of participants are: up to 300 teachers for the survey, and around 8-12 teachers for the Focus Group Discussion. In case more than 12 teachers showed interest in FGDs, the Co-investigator will choose the ones with the longest teaching experience. The surveys include a demographics questionnaire, the Knowledge of Attention Deficit Hyperactivity Disorder (KADDS) questionnaire to measure teachers' knowledge about ADHD symptoms, nature, causes, and treatment. The surveys also include 4 vignettes that describe 4 elementary school aged students (2 boys and 2 girls) that show different subtypes of ADHD and teachers will provide a rating for each vignette and identify with justification each case. During the focus group discussions, the researcher will audio-tape the interviews so that they can be written and analyzed later on. The duration for completion each tool is as follows: Survey Packet completion is 20 minutes. Each FGD will take around 60-90 minutes will take place either at one of the schools' library or teachers' lounge.

The estimated time for the completion of this study is 6 months, and three months for the school field work.

B. Risks and Benefits

Your participation in this study does not involve any physical risk or emotional risk to you beyond the risks of daily life. You have the right to withdraw your consent or discontinue participation at any time for any reason. Your decision to withdraw will not involve any penalty or loss of benefits to which you are entitled. Discontinuing participation in no way affects your relationship with AUB. In addition, refusal to participate in the study will involve no penalties of any kind or affect the teacher's relationship with AUB or the school.

The School receives no direct benefits from participating in this research. However, the participation of the elementary teachers in your school will help researchers better understand Lebanese teachers' conceptions and misconceptions about ADHD in Lebanon.

C. Confidentiality

If you agree to participate, all information will be kept confidential. To secure the confidentiality of your responses, your names and other identifying information will never be attached to their answers. Data provided by the teacher will not be shared with any other teacher or the school principal. All codes and data are kept in a locked drawer in a locker room or in a password protected computer that is kept secure. Data access is limited to the Principal Investigator and researchers working directly on this project. All data will be destroyed responsibly after the required retention period (usually three years.) Your privacy will be maintained in all published and written data resulting from this study. Your names or other identifying information will not be used in our reports or published papers.

D. Contact Information

If you have any questions or concerns about the research you may contact Dr. Anies Al Hroub at 01-350000 ext 3053 or by email: aa111@aub.edu.lb or Miss Hala Berri at 03-686169 / 78-838884 or by email: hmb11@mail.aub.edu. If I feel that my questions have not been answered, I can contact the Institutional Review Board for human rights at 01-374374, ext: 5445 or by email: irb@aub.edu.lb.

E. Participant rights

Participation in this study is voluntary. You are free to leave the study at any time without penalty. Your decision not to participate in no way influences your relationship with AUB. A copy of this consent form will be given to you.

. Signing the Consent Form

I

I have read and understand the above information. I agree to participate in the research study:

Participant: _____ Date: _____

Signature: _____ Time: _____

o-Investigator's Signature: _____

Please choose which of the following you would like to participate in:

I would like to fill out ONLY a survey.

Signature: _____ Time: _____

I would like to participate ONLY in the Focus Group Discussion.

Signature: _____ Time: _____

The sessions will be audio-taped. The audio-recordings will be kept in a locked file drawer in the principal investigator's office. They will be only used by the principal investigator and researchers working directly on this project. I agree to have the FGD audio-taped.

Participant: _____ Date: _____

I would like to participate in BOTH the survey and the Focus Group Discussion.

Signature: _____ Time: _____

**Principal Investigator:
Address:**

Dr. Anies Al-Hroub
American University of Beirut
Department of Education
Associate Professor of Educational Psychology and Special
Education
Phone (00961-350000-3053)
Email: aa111@aub.edu.lb

**Co-Investigator:
Address:**

Ms. Hala Berri
American University of Beirut
Department of Education
Beirut, Lebanon
Phone: 03686169
Email: hmb11@mail.aub.edu

APPENDIX D

The Diagnostic Criteria for Diagnosis of ADHD from DSM-IV

A. Either (1) or (2):

- (1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- (a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- (b) Often has difficulty sustaining attention in tasks or play activities
- (c) Often does not seem to listen when spoken to directly
- (d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- (e) Often has difficulty organizing tasks and activities
- (f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) Often loses things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)
- (h) Is often easily distracted by extraneous stimuli
- (i) Is often forgetful in daily activities

- (2) Six (or more) of the following symptoms of hyperactivity/impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) Often fidgets with hands or feet or squirms in seat

- (b) Often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- (d) Often has difficulty playing or engaging in leisure activities quiet
- (e) If often “on the go” or often acts as if “driven by a motor”
- (f) Often talks excessively

Impulsivity

- (g) Often blurts out answers before questions have been completed
 - (h) Often has difficulty awaiting turn
 - (i) Often interrupts or intrudes on others (e.g. butts into conversations)
- B. Some hyperactive-impulsive behavior or inattentive symptoms that cause impairment were present before age 7 years.
 - C. Some symptoms occur in two or more settings (e.g. at school [or work] and at home).
 - D. There is clear evidence of clinically significant impairment in social, academic, or occupational functioning.
 - E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder, and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

REFERENCES

- Adams, C. (2007). Girls & ADHD: Are you missing the signs? *Instructor (1999)*, 116, 31-35.
- ADHD is not just a product of our own culture. (2007, Jul 06). *Kelowna Capital News*. Retrieved from <http://search.proquest.com/docview/376091597?accountid=8555>
- Alloway, T., Elliott, J., & Holmes, J. (2010). The prevalence of ADHD-like symptoms in a community sample. *Journal of Attention Disorders*, 14, 52-56.
- American Academy of Pediatrics. (2011). ADHD: Clinical practice guideline for the diagnosis, evaluation, and treatment of attention- deficit/hyperactivity disorder in children and adolescents. *Pediatrics*, 118, 1-18.
- American Psychiatry Association. (2013). Attention deficit/hyperactivity disorder. Retrieved from: www.psychiatry.org
- American School Counselor Association. (2008). *ASCA national model*. Retrieved from <http://www.ascanationalmodel.org>
- Amiri, S., Fakhari, A., Maheri, M., & MohammadpoorAsl, A. (2010). Attention deficit/hyperactivity disorder in primary school children of Tabriz, north-west Iran *Paediatric and Perinatal Epidemiology*, 24(6), 597.
- Anderson, D. L., Watt, S. E., Noble, W., & Shanley, D. C. (2012). Knowledge of attention deficit hyperactivity disorder (ADHD) and attitudes toward teaching children with ADHD: THE role of teaching experience. *Psychology in the Schools*, 49, 511-525.
- Ayyash-Abdo, H., Alamuddin, R., & Mukallid, S. (2010). School counseling in Lebanon: Past, present, and future. *Journal of Counseling & Development*, 88, 13-17.
- Badeleh, M. T. (2013). Attention deficit hyperactivity disorder and elementary teachers' awareness. *Journal of Medical Sciences*, 13, 829-833.
- Barkley, R. (2005). *Attention-Deficit Hyperactivity Disorder (3rded.)*. New York: The Guilford Press.
- Bauermeister, J. J., Shrout, P. E., Chávez, L., Rubio-Stipec, M., Ramírez, R., Padilla, L., Canino, G. (2007). ADHD and gender: Are risks and sequela of ADHD the same for boys and girls? *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 48, 831-839.
- Brook, U., Watenberg, N., & Geva, D. (2000). Attitude and knowledge of attention deficit hyperactivity disorder and learning disability among high school teachers. *Patient Education and Counseling*, 40(3), 247-252.

- Coles, E. K., Slavec, J., Bernstein, M., & Baroni, E. (2012). Exploring the gender gap in referrals for children with ADHD and other disruptive behavior disorders. *Journal of Attention Disorders, 16*, 101-108.
- Corbin, J., & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. (3rd Ed.). Los Angeles, CA: Sage Publications
- Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Newbury Park, CA: Sage Publications.
- Daley, D., & Birchwood, J. (2010). ADHD and academic performance: Why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom?: ADHD and academic performance. *Child: Care, Health and Development, 36*, 455-464.
- Escalada, M. (2009). DC132: *Focus group discussion*. [handout 7]. Retrieved from http://www.academia.edu/4574254/Focus_Group_Discussion_1
- Farah, L. G., Fayyad, J. A., Eapen, V., Cassir, Y., Salamoun, M. M., Tabet, C. C., & Karam, E. G. (2009). ADHD in the Arab world a review of epidemiologic studies. *Journal of Attention Disorders, 13*, 211-222.
- Graham, J., Seth, S., & Coghill, D. (2007). *ADHD medicine, 35*, 181-185.
- Gregg, S. (2005). Understanding and identifying children with ADHD. Retrieved from: <http://www.ldonline.org/article/5974?theme=print>
- Groenewald, C., Emond, A., & Sayal, K. (2009). Recognition and referral of girls with attention deficit hyperactivity disorder: Case vignette study. *Child: Care, Health and Development, 35*, 767-767.
- Guerra, F. R., & Brown, M. S. (2012). Teacher knowledge of attention deficit hyperactivity disorder among middle school students in south Texas. *RMLE Online, 36*, 1-7.
- Horton-Salway, M. (2011). Repertoires of ADHD in UK newspaper media. *Health, 15*, 533-549.
- Howe, D. (2010). ADHD and its comorbidity: An example of gene-environment interaction and its implications for child and family social work. *Child and Family Social Work, 15*, 265-275.
- Jackson, D. A., & King, A. R. (2004). Gender differences in the effects of oppositional behavior on teacher ratings of ADHD symptoms. *Journal of Abnormal Child Psychology, 32*, 215-224.

- Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33, 14-26.
- Kovshoff, H., Williams, S., Vrijens, M., Danckaerts, M., Thompson, M., Yardley, L., Sonuga-Barke, E. J. S. (2012). The decisions regarding ADHD management (DRAMA) study: Uncertainties and complexities in assessment, diagnosis and treatment, from the clinician's point of view. *European Child & Adolescent Psychiatry*, 21, 87-99.
- Krowski, K. F. (2009). ADHD: Urban teachers' knowledge, beliefs and classroom practice. *University of Massachusetts. These and Dissertations*. Retrieved from: <http://search.proquest.com/docview/305140059?accountid=8555>
- Legato, J. (2011). Effects of teacher factors on expectations of students with ADHD. *DePaul University. Theses and Dissertations*. <http://via.library.depaul.edu/etd/66>
- Maniadaki, K., Sonuga-Barke, E. J. S., & Kakouros, E. (2003). Trainee nursery teachers' perceptions of disruptive behaviour disorders; the effect of sex of child on judgments of typicality and severity. *Child: Care, Health and Development*, 29, 433-440.
- Martinussen, R., Tannock, R., & Chaban, P. (2011). Teachers' reported use of instructional and behavior management practices for students with behavior problems: Relationship to role and level of training in ADHD. *Child & Youth Care Forum*, 40, 193-210.
- Merriam, S. B. (2010). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco: Jossey Bass Publishers.
- Millichap, J. G. (2010). *Attention deficit hyperactivity disorder handbook: A physician's guide to ADHD*. New York: Springer New York. Retrieved from: <http://link.springer.com/book/10.1007%2F978-1-4419-1397-5>
- Moon, S. K. (2011). Cultural perspectives on attention deficit hyperactivity disorder: A comparison between Korea and the U.S. *Journal of International Business & Cultural Studies*, 6, 1-11
- Morisoli, K., & McLaughlin, T. F. (2004). Medication and school intervention for elementary students with attention deficit hyperactivity disorder. *International Journal of Special Education*, 19, 97-106.
- Nur, N., & Kavakci, O. (2010). Elementary school teachers' knowledge and attitudes related to attention deficit hyperactivity disorder. *Journal of Society for Development in New Net Environment in B&H*, 4, 350-355.

- Oh, W., Park, E. S., Suk, M. H., Song, D. H., & Im, Y. (2012). Parenting of children with ADHD in South Korea: The role of socio-emotional development of children with ADHD. *Journal of Clinical Nursing, 21*, 1932-1942.
- Ohan, J. L., & Visser, T. A. W. (2009). Why is there a gender gap in children presenting for attention deficit/hyperactivity disorder services? *Journal of Clinical Child and Adolescent Psychology, 38*, 650-660.
- Paul, H.A. (2008). A review of: Treatment of childhood disorders (3rd ed.). In E.J. Mash & R.A. Barkley (eds.). *Child and Family Behavior Therapy*. (pp.280-288). New York: Guilford Press.
- Pires, T., Da-Silva, C., & De-Assis, S. (2013). Association between family environment and attention deficit hyperactivity disorder in children - mothers' and teachers' views. *BMC Psychiatry, 13*, 215-215.
- Rennekamp, R., & Nall, M. *Using Focus Groups in Program Development and Evaluation*. [handout]. Retrieved from: <http://www2.ca.uky.edu/AgPSD/Focus.pdf>
- Sarraf, N., Karahmadi, M., Marasy, M. R., & Azhar, S. M. (2011). A comparative study of the effectiveness of nonattendance and workshop education of primary school teachers in their knowledge, attitude and function towards ADHD students in Isfahan in 2010. *Journal of Research in Medical Sciences, 16*, 1196-1201.
- Sciutto, M. J., Nolfi, C. J., & Bluhm, C. (2004). Effects of child gender and symptom type on referrals for ADHD by elementary school teachers. *Journal of Emotional and Behavioral Disorders, 12*, 247-253.
- Taylor, E. (2011). Antecedents of ADHD: A historical account of diagnostic concepts. *Attention Deficit and Hyperactivity Disorders, 3*, 69-75.
- Vereb, H. L., & DiPerna, J. C. (2004). Teachers' knowledge of ADHD, treatments for ADHD, and treatment acceptability: an initial investigation. *School Psychology Review, 33*, 421-428.
- Wedge, M. (2012). Why French kids don't have ADHD. *Psychology Today*. Retrieved from: <http://www.psychologytoday.com/blog/suffer-the-children/201203/why-french-kids-dont-have-adhd>
- Weyandt, L. L., Fulton, K. M., Schepman, S. B., Verdi, G. R., & Wilson, K. G. (2009). Assessment of teacher and school psychologist knowledge of Attention Deficit/Hyperactivity Disorder. *Psychology in the Schools, 46*, 951-961.
- Woosley, L. (2006). ADHD ignores gender. *Tulsa World*. Retrieved from <http://search.proquest.com/docview/400074646?accountid=8555>