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Al-Quds University

Prevalence of Attention Deficit/Hyperactivity Disorder Among Fifth Grade Children in Bethlehem Schools.

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Prevalence of Attention Deficit/Hyperactivity Disorder Among Fifth Grade Children in Bethlehem Schools.

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Dedication

To the soul of my father Hussein Abdeen who passed away in the last week of finishing the last course of this program.

To my caring mother, who had never stopped assisting, supporting and encouraging me.

To my husband who assisted me in subscribing to this program and had tolerated my defaults and kept on encouraging and supporting me to accomplish this work.

To my kids Anas, Omar and Taleen who had tolerated my preoccupation and busyness while studying or working to accomplish the thesis.

To my colleague Dr SamahJabr who had the greatest influence in subscribingto this program of Mental Health, and to get this degree.

Declaration

I certify that this thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of it) has not been submitted for a higher degree to any other university or institution.

Signed …….

Sherein Hussein Abdeen

Date: June 23, 2012

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Abstract:

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobehavioral disorder charecterised by inattention, hyperactivity, and impulsivity. The aim of this study was to investigate the prevalence of ADHD among fifth grade students in Bethlehem schools according to mothers' perspective and also, to find out the extent of comorbidity with conduct behavior.

The study population included all the mothers of the children in fifth grade in all types of schools in Bethlehem governorate . The prevalence of ADHD was measured from the mothers' prespective. Therefore, the students were the unit of selection but the mothers were the study population. The target population included 494 mothers of fifth grade students in Bethlehem schools, average age was 11 year. The target population represents 9.3% of the study population.

Two questionnaires were used, the first was the Attention Deficit Hyperactivity Disorder scale to assess for ADHD (Ahmad,1999), the other was the Eyberg Child Behavior Inventory (Eyberg,1992) that assesses conduct behavior.

The study revealed a moderate degree of total ADHD symptoms prevalence among fifth grade children in Bethlehem schools from their mothers' perspective, mean was 2.12 and standard deviation was 0.59. The mothers who had evaluated their children with a moderate degree of ADHD symptoms were 45.9%, those who evaluated their children with a low degree were 44.7% and 9.3% of the mothers evaluated their children with a high degree.

The study revealed a low degree of conduct behaviour prevalence among fifth grade children in Bethlehem schools from their mothers' perspective, the mean was 2.97 and the standard deviation was 1.005. The mothers who had evaluated their children with a low degree of conduct behaviour were 60.4%,those who evaluated their children with a moderate degree were 36% and 3.6% were who evaluated their children with a high degree.

The study revealed that comorbidity between ADHD symptoms and conduct behaviour from the mothers' perspective at low degree of both dimensions was 39.2%, at moderate degree of both dimensions was 26.2%, and 0.8% at high degree of both dimensions.

The results of the study showed a significant statistical differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools due to students' academic performance, type of school, gender of child. Also, a significant statistical differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective due to the mother's educational level, number of hours that the mother spends with child.

No significant statistical differences were found at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools according to their mothers' perspective related to mothers' age, current marital status of the mother, mothers' job, mothers' relation to father, place of living and mean income per month.

According to the findings, a moderate level of ADHD symptoms was found among fifth grade children in Bethlehem schools from the mothers' perspective. This will suggested changes in policy and practice that can help to make early identification of children with ADHD in schools, and to develop programs to help those children and their families. Therefore, schools will be the place of growth and development for all the students, including those with ADHD. In addition, it will minimise the negative impact on the individual, family and society.

مدى انتشار اضطراب فرط الحركة وقلة الانتباه بين طلبة الصف الخامس في مدارس بيت لحم

إعداد: شيرين حسين عبد المجيد عابدين.

إشراف: أ. د. تيسير عبد الله

الملخص:

اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) هو اضطراب عصبي-سلوكي يتميز بقلة الانتباه، وفرط النشاط والاندفاعية. إن الهدف من هذه الدراسة هو معرفة مدى انتشار هذا الاضطراب بين طلاب الصف الخامس في مدارس محافظة بيت لحم وفقاً لوجهة نظر الأم، وأيضاً لمعرفة مدى الاعتلال المشترك ما بين هذا الاضطراب والسلوك التخريبي.

إن عينة الدراسة اشتملت على جميع أمهات أطفال الصف الخامس من مختلف أنواع المدارس في محافظة بيت لحم. وتم قياس مدى انتشار اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) بالنسبة إلى وجهة نظر الأمهات. وبناءاً على ذلك كان الطلاب هم وحدة الاختيار في حين أن الأمهات كن عينة الدراسة. إن العينة المستهدفة شملت 494 أم لطلبة الصف الخامس في مدارس بيت لحم والذي كانت أعمار أطفالهم 11 سنة ، وتمثل هذه العينة المستهدفة 9.3% من عينة الدراسة.

لقد تم استخدام استبيانين، الأول هو مقياس اضطراب الحركة الزائدة و/أو تشتت الانتباه لتقييم الحركة الزائدة و/أو تشتت الانتباه (ADHD) (أحمد، 1999)، والآخر هو مقياس آيبرغ لسلوك الأطفال (آيبرغ، 1992) لتقييم السلوك التخريبي.

وكشفت الدراسة عن وجود درجة متوسطة من مدى انتشار أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه لدى طلاب الصف الخامس في مدارس بيت لحم من وجهة نظر أمهات هؤلاء الأطفال، بمتوسط حسابي 2.12 وانحراف معياري قدره 0.59. إن الأمهات اللواتي أعطوا أطفالهم درجة متوسطة لأعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) كانوا بنسبة 45.9%، أما اللواتي أعطوا أطفالهم درجة منخفضة كانت نسبتهم 44.7% و 9.3% من الأمهات أعطوا أطفالهم درجة عالية.

كما وكشفت الدراسة عن مدى انتشار منخفض للسلوك التخريبي بين طلاب الصف الخامس من الأطفال في مدارس محافظة بيت لحم من وجهة نظر الأمهات، بمتوسط حسابي 2.97 وانحراف معياري مقداره 1.005.إن الأمهات اللواتي أعطين أطفالهم درجة منخفضة من السلوك التخريبي كانوا بنسبة 60.4%، أما بنسبة متوسطة فقد كانوا 36% في حين أن أولئك اللواتي أعطينهم درجة مرتفعة كانوا بنسبة 3.6%.

إن الدراسة أظهرت وجود اعتلال مشترك ما بين أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) والسلوك التخريبي من وجهة نظر الأمهات، حيث كان الارتباط بدرجة منخفضة لكلا المجالين بنسبة 39.2%، وبدرجة متوسطة لكلا المجالين بنسبة 26.2%، وبدرجة عالية لكلا المجالين بنسبة 0.8%.

كما وأظهرت الدراسة وجود فروق ذات دلالة إحصائية عند مستوى الدلالة ($\alpha \leq 0.05$) في مدى انتشار أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) لدى طلاب الصف الخامس من الأطفال في مدارس بيت لحم تعزى لأداء الطلاب الأكاديمي، ونوع المدرسة، وجنس الطفل. أيضاً يوجد فروق ذات دلالة إحصائية عند ($\alpha \leq 0.05$) في مدى انتشار أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) لدى طلاب الصف الخامس من الأطفال في مدارس بيت لحم من وجهة نظر الأم تعزى إلى المستوى التعليمي للأم، وعدد الساعات التي تقضيها الأم مع طفلها.

لا يوجد أي فروق دالة إحصائيا عند مستوى الدلالة ($\alpha \leq 0.05$) في مدى انتشار أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) لدى طلاب الصف الخامس من الأطفال في مدارس بيت لحم وفقاً لوجهة نظر أمهاتهم بالارتباط مع عمر الأم، والحالة الاجتماعية للأم، وعمل الأم، و قرابة الأم بالأب، ومكان الإقامة ومتوسط الدخل الشهري.

وفقاً للنتائج وجد مستوى متوسط من أعراض اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD) لدى طلبة الصف الخامس من الأطفال في مدارس بيت لحم من وجهة نظر الأم. هذا سيقترح تغييرات في السياسات والممارسات التي قد تساعد في التعرف المبكر على الأطفال الذين لديهم اضطراب الحركة الزائدة و/أو تشتت الانتباه (ADHD)، وفي تطوير برامج لمساعدة هؤلاء الأطفال وأسرهم. لذلك، ستكون المدارس مكان لتطور ونمو الطلاب، خاصة الطلاب الذين لديهم الحركة الزائدة و/أو تشتت الانتباه (ADHD). بالإضافة إلى أن ذلك سيؤدي إلى تقليل تأثير الاضطراب على الفرد والعائلة والمجتمع.

Definition of Terms:

Attention Deficit Hyperactive Disorder (ADHD): A syndrome which is usually diagnosed in childhood. Persistent pattern of impulsiveness, inattention and/or hyperactivity are the main characteristics. It interferes with academic, occupational, and social performance. According to the criteria of DSM IV, a child with six or more symptoms of hyperactivity-impulsivity or inattention will be diagnosed as ADHD child (DSM-IV TR, 2000).

Inattention: having difficulty to attend or focus on a specific task. It will cause difficulties with staying organized. It shows symptoms such as losing important things, completing homework or tasks, and making careless errors (DSM-IV TR, 2000).

Hyperactivity: it is the difficulty to inhibit behaviour. These people maintain constant motion, such as leg swinging as well as squirming in their chair (DSM-IV TR, 2000).

Impulsivity: it is the difficulty to control impulses. Patients can't stop and think before acting. They don't think of consequences, they do whatever comes into their minds (DSM-IV TR, 2000).

Attention Deficit Hyperactivity Disorder operational definition: the total score of the symptoms in the tool used to assess the child for hyperactivity, inattention, and impulsivity from the mothers' perspective.

Conduct Disorder: it is defined in the DSM –IV TR as " a repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated"(DSM-IV TR,2000).

DSM-IV TR:Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision. It is a manual published by the American Psychiatric Association (APA) and it includes all the currently recognized mental health disorders (DSM -IV TR,2000).

Grade 5: this grade was chosen to be the target population; it is an elementary class with school aged 11 year. According to Erikson the child in this stage tries to work hard, being good, right, responsible, and more reasonable to share and cooperate. They are eager to learn and accomplish complex skills such as reading and writing. They form moral values,

recognize culture and individual differences. They try to be independent. According to DSM-IV TR symptoms of ADHD can be assessed after age 7 (Kaplan and Sadock, 2007).

Bethlehem governorate:

Bethlehem Governorate is located in the southernWest Bank south of Jerusalem.
"Bethlehem Governorate covers 607.6 km2, with five main cities (Bethlehem, Beit Jala, Beit Sahour, Al Khader and Al Doha) and 70 localities including 3 refugees' camps. Today, the Governorate is a home to 225,567 Palestinian inhabitants today (PCBS 2010)."(Applied Research Institute,2010,p.4).Total number of schools in Bethlehem is 115; the governmental schools are 76, the private schools are 33 and the UNRWA schools are 6 according to ministry of education, Bethlehem branch, 2012.

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List of Abbreviations:

ADHD:	**Attention Deficit Hyperactivity Disorder.**
DSM IV:	**Diagnostic Statistical Manual of Mental Health no. Four.**
CD:	**Conduct Disorder**
ICD :	**International Classification of Disease**
APA:	**American Psychiatric Association**
LD:	**Learning Disabilities**
BPD:	**Borderline Personality Disorder**
OCD:	**Obsessive Compulsive Disorder**

Chapter One

Introduction

Introduction

1.1 Background

Attention deficit Hyperactivity Disorder (ADHD) is the most common diagnosed neurobehavioral disorder among children (Aguiar Eubig and Schantz, 2010). ADHD is "a persistent pattern of inattention and/or hyperactivity and impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development" (DSM-IV TR, 2000,p.85). The basic symptoms of this disorder are inattention, impulsivity and hyperactivity or it might be a combination of the three. The criteria for diagnosing ADHD require the presence of symptoms in two or more settings, such as school and home, according to DSM IV, and in one setting according to DSM III. Symptoms must persist with duration of at least six months (DSM-IV TR, 2000).

ADHD is the most common problem seen at school setting. It presents problematic consequences for the learning processes, including academic performance, peers relationship and behavioural problems (Kypriotaki and Manolitsis, 2010). Accordingto the American Psychiatric Association, 2000, the prevalence of the disorder among school-age children lies between 3% and 7% .It was observed in most studies that this percentage rises when the evaluation scales concerning child symptoms are done from the parents' and teachers' view, and in the absence of clinical setting (Kypriotaki,et al., 2010). A study done in Palestine indicated a significant agreement between parents and teachers with prevalence 4.3% (Thabet Ghamdi Abdullah Elhelou and Vostanis, 2010). Assessing the prevalence of ADHD depends on several factors such as the conceptual approach of the researchers, evaluator, the data collection tools, and the size and type of the population in question. Gender has an influence as well, boys were observed to have the diagnosis at least three times more often than in girls (Kypriotaki et al., 2010).

It was previously thought that the prognosis of ADHD ends before or during adolescence; it is now estimated that more than 70% of hyperactive children continue to meet criteria for ADHD as adolescents and up to 65% do so as adults (4%of the total number of adults) (Faraone Sergeant Gillberg and Biederman, 2003).

This disorder will have poor prognosis if left untreated, and on many levels. First, ADHD child might develop co-morbid disorder (secondary disorders) and therefore the child might either become a trouble maker, drug abuser, or a criminal and this will affect the

overall development of the child (Wender , 2000). Second, it will cause psychological stress for teachers at school (Barbaresi and Olsen, 1998). Third; families of ADHD child will be frustrated and stressed out (Corwin, 2006), which may result in marital discord (Faraone et al., 2003). Early diagnosis of ADHD is a difficult process because problems associated with ADHD might be a symptom of other disorders. In addition, a child with ADHD might have other related problems such as learning difficulties, stress and depression , oppositional defiant disorder , conduct disorder , Tourette Syndrome and so on (Kypriotaki et al., 2010).

Assessment of the behaviours can be done through interviews or rating scales. According to a study by the American Academy of Paediatrics in 2000, Guidelines strongly recommended rating scales empirically validated for ADHD assessment (Trip Schaughency and Clarke, 2006).

Parents' evaluation might be affected by certain beliefs within the parents such as, expecting their children to be obedient and well-behaved thus; they rate the behaviours of their children strictly, especially if the child is a female. In addition, lack of discipline at home will make the children behave freely compared to school where discipline is usually harsher. Therefore, parents will see the behaviours of their children more symptomatic (Soma Nakamura Oyama Tsuchiya and Yamamoto, 2009).

The word "comorbid" is usually said when the patient has more than one psychiatric disorder regardless if any of them caused the other or it exists independently. When ADHD is found on its own the child functioning will be much better than comorbid ADHD. In addition, comorbid ADHD is found to be more treatment resistant, and the child will have more functional impairment (Lewis,2002).

Disruptive behaviour disorder such as Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) and the relationship among ADHD has been the interest of considerable researches in the last few years. Comorbidity among ADHD and disruptive behaviour exceeds half the children of ADHD (Biederman et al., 1996 cited in Lewis,2002).

Children diagnosed with ADHD comorbid with CD are more of lower socioeconomic status, higher possibility of learning disability, and their family history of antisocial behaviour is much stronger. This type of comorbidity will also make the long-term

prognosis worse; the child will tend to have antisocial behaviour, substance abuse, and might be an aggressive adult. (Lewis, 2002).

Symptoms of ADHD, ODD and CD were compared in one sample regarding age of onset. The sample included male participants, aged 7-12 years. Median ages of onset for half of the symptoms of ADHD and ODD were 5 years, and for the remaining symptoms to emerge were later on in age. The last symptoms to emerge were on 11 year old children. Median age of onset for CD symptoms to emerge was slightly later than ADHD and ODD, it was reported by 6 years old. The serious symptoms of CD emerge until late childhood or adolescent. Truancy, running away from home, forced sex, theft and confrontation are considered as serious symptoms of CD (Lahey Hulle Rathouz Rodgers Onofrio and Waldman, 2009)

1.2 Statement of the Problem:

ADHD has serious symptoms of hyperactivity, impulsivity and inattention which cause a child to face many problems. Such as, facing difficulties at school and home settings, and having poor peers' relationship. Within teenage and adults, ADHD victims often have social and communication skills deficits, school failure, poor academic achievement**,** exposure to accidents and delinquent behaviour (Kypriotaki et al., 2010).

Prevalence of ADHD is seen to be high and it is increasing with time, it becomes chronic if not addressed by time. In addition, it has a prognosis with comorbid disorder which will lead to multiple problems. This makes it important to find out a valid and reliable way to early identify children with ADHD (Kypriotaki et al., 2010).Therefore, epidemiological data on ADHD is crucial to plan for child mental health services for the country as well as for the necessary screening procedures, and for the allocation of funds for mental health services. In addition, it will sensitize professionals to look for the possibility of ADHD during their contact with schools (Eapen et al., 2009).

In a study conducted in the United Kingdom, it was found that many of the students who were excluded from schools have disruptive behaviour, and showed symptoms of unidentified, untreated, or poorly managed ADHD. The available studies suggest that students who have been diagnosed with ADHD have higher rates of exclusion than those who are in the general school-aged population (O'Regan, 2010).

Labelling ADHD child is another problem that makes this study important, “Difficult”, “angry,” “lazy,” “crazy,” “slow,” “obstinate,” “odd,” “overly aggressive,” and “socially inept” are usually adjectives that the ADHD child is labelled with, due to under-diagnosing and lack of treatment. It is not simple to diagnose a child with ADHD, the child might not fit into a diagnostic category, and as a result, parents, teachers and counsellors may struggle as how to actually help the ADHD child (Jacobelli and Amacon, 2010).

Through obtaining information from mothers, early identification of ADHD would be possible, as well as providing the required information for those responsible for health care planning(Eapen et al., 2009).

According to DSM-IV, mild symptoms of ADHD might be seen before age 7, whereas major symptoms are obvious after this age. Prognosis of this disorder might go into three ways. Symptoms will either go away at adolescence, will partially go away, or will become worse and more severe. Therefore, assessing students with ADHD symptoms at grade five in this study will give an idea about the prevalence of ADHD at this stage. Erikson indicated that at this stage the child accomplishes change in his morals, cognitive and social development. On the other hand, previous studies indicated a decrease in ADHD prevalence with increasing age, one of which showed a decrease from age 11 to 20 (Faraone, 2003). Therefore, in this study grade five will be the aim as the child will be 11 years old.

A study has been carried out on Palestine school children concerning ADHD prevalence, it was conducted in May 2010; results indicated a significant agreement in prevalence rate among teachers and parents with a rate of 4.3% (Thabet, 2010). A thesis study was done in the year 2008 by Rezqalla in Al-Quds University concerning the Quality of life and its relationship to attention deficit disorder among children in Bethlehem schools from the mothers’ perspective and revealed that the prevalence of ADHD of a group of students age 6-9 was 17.8% (Rezqalla, 2008). So this study will be the first to be performed in Palestine to assess ADHD symptoms among fifth grade students only, in Bethlehem schools, and to find comorbidity with conduct behaviour as well.

1.3 Justification:

Prevalence rate of ADHD in Palestine is still under examination. It and maybe stemming from social and cultural factors. This study will investigate the extent of the spread of this disorder among 5th grade children in Bethlehem schools. (Faraone et al., 2003).

ADHD is known as a neurodevelopment disorder. Researchers have indicated psychosocial difficulties as risk factors for ADHD (Thabet et al., 2010). This study will examine various variables thatmight contribute to ADHD. Factors such as gender, parental discord, family income, parents' educational status, and others, will be examined. The findings of this study could be a baseline for interventions in the community through parents and primary mental health care professionals as well.

On the other hand, investigating how common this disorder is, will bring out improvement in child mental health. It will reveal the need for comprehensive screening among children and inventing programs to help these children, teachers and families as well. This will be significantly associated with efforts to reduce parents' depression and/or distress (Scharer ,2009).

1.4 Main aim:

The main aim of this study is to investigate the extent prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective, as well as comorbidity with conduct behaviours.

1.5: Objectives:

Epidemiological studies on ADHD are considered rare in the Arab World and in Palestine as well. This study is a baseline study about ADHD prevalence in Bethlehem schools from the mothers' perspective. There is an important need for more research on ADHD in Palestine. Researches will not only help to assess the prevalence of ADHD in children, but also to understand the different factors that contribute to the disorder. This may have an influence on the prognosis of the disorder, on mental comorbidities and on the high impact across the life span (Farah Fayyad Eapen and Cassir, 2009). The objectives of this research are:

1-To investigate the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective.

2-To find out the prevalence of comorbid conduct behaviours and ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective.

3-To look for variables that might contribute to the prevalence of ADHD symptoms such as: students' academic performance, type of school, gender, the mother's educational level, number of hours that the mother spends with child.

1.6 Research questions:

- What is the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective?

- What is the prevalence of comorbid conduct behaviours and ADHD symptoms among fifth grade children in Bethlehem schools from the mother's perspective?

- Are there significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools related tochild's academic performance, type of school, gender, and from the mothers' perspective due the mother's educational level, number of hours that the mother spends with the child?

1.7 Research Hypothesis:

1-There are no significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools due to the child's academic performance.

2-There are no significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools due to type of school.

3- There are no significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools due to gender.

4-There are no significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from their mothers' perspective due to the mothers' educational level.

5-There are no significant differences at ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from their mothers' perspective due to number of hours that the mother spends with the child.

1.8 Assumptions:

1- The researcher assumes that the variables of the study are clearly defined and measurable**.**

2-The researcher assumes that the theoretical framework used in the study reflects the phenomena under study.

3- The researcher assumes that the instruments used to measure ADHD and conduct behaviour are valid and reliable to measure the variables.

4- The researcher assumes that the methodology (descriptive quantitative) used to accomplish this study is appropriate .

5- The researcher assumes that the sample is representative of the population, and that the mothers will answer the questionnaire honestly.

6- The researcher assumes that the results could be generalizable beyond the sample in the study.

Chapter two

Literature review

2.1 Definition of ADHD:

Attention Deficit Hyperactive Disorder is defined by the American Psychiatric Association(1994) in the DSM-IV TR as " a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequently displayed and more severe than is typically observed in individuals at a comparable level of development"(DSM-IV TR, 2000).

2.2 Theoretical concepts of ADHD:

2.2.1. Historical conceptualizations of ADHD:

Different authors have described the presence of symptoms of impulsivity, hyperactivity and inattention within some children during the last 200 years (Lange Kl. Reichl lange Ka. Tucha L. and Tucha O., 2010).

Sir Alexander Chrichton

Since 1798 the dysfunctioning characteristics, concept, and nomenclature have been changed by time, although they were consistent with the new diagnostic criteria of ADHD. Sir Alexander Chrichton was the first to write about a disease similar to ADHD. He wrote a chapter "On Attention and its disease" in his book in 1798. He gave a definition of attention:" when any object of external sense, or of thought, occupies the mind in such a degree that a person doesn't receive a clear perception from any other one, he is said to attend to it". He also described that attention is reduced by the following heads: first, "the incapacity of attending with a necessary degree of constancy to any one object which arises from unnatural or morbid sensibility of the nerves", it might be due to accidental diseases or born with the person. Second, "a total suspension of its effects on the brain". His first description of attention alteration is very similar to the current DSM IV criteria of ADHD inattentive type: "The difficulty sustaining attention in tasks or play activities" (Lange et al., 2010).

DSM IV indicates that for ADHD diagnosing, symptoms must be present before the age of seven. Crichton describes in 1798 that the disorder may be "born with a person" and "when born with a person it becomes evident at a very early period of time". Crichton also observed that these children commonly had school difficulties, and that usually this

disorder “generally diminished with age”. Recent studies in 2008 showed that 50% of ADHD children hold the symptoms into adulthood. (Lange et al., 2010)

Crichton also added that attention alteration can be caused by a nervous disorder if not innate. Later discoveries proved that it can be due to brain damage or dysfunction.Crichton didn’t mention anything about symptoms of impulsivity or hyperactivity. He might have seen this in his patients but has failed to find a correlation, and therefore didn’t mention any in his context. The total description of ADHD defined by Crichton is similar to symptoms of ADHD subtype but not consistent with the fully criteria of the clinical diagnosing of ADHD (Lange et al., 2010)

Hoffmann:

In 1844Hoffmann a German physician created a story book regarding the behaviour of several children. One of these behaviours was when a father projected the recurrent misbehaviour of his child and the child doesn’t listen to what his father says. This behaviour is seen now in DSM IV in one of the symptoms in the criteria of inattention: “often doesn’t seem to listen when spoken to directly”, and “often doesn’t follow through on instructions”. Hoffman also added that the child “wriggled and giggled, swung backward and forward and tilted his chair”. This symptom is very similar to the first symptom of hyperactivity in the DSM IV: “often fidget with hands or feet or squirms in seat”. Then Hoffmann describes how the parents become very angry which is very close to another criterion in the DSM IV: “significant impairment in social functioning” and how the behaviour of the child causes conflict. This was one of the stories that Hoffmann wrote indicating the maladaptive behaviour, regarding one of his patients, which is very close to ADHD symptoms. (Lange et al., 2010)

In 1902, Sir George Fredric Still brought up the scientific starting point of ADHD. He made a group of his patients that comprise all the ADHD description cases; all who had a defect in their moral control but not with a “general impairment of intellect” (still 1902, p.1077 cited in Lange et al., 2010). Then he put them into two categories. The first one for those with moral defect comorbid with a physical disease; such as meningitis, epilepsy, head injury, etc.... The second one is only for those who had a moral defect but with no physical disease. He found that the second group had “history of cerebral disturbance in early infancy” (Still 1902, p.1081 cited in Lange,et al.,2010). This brought out the concept

that brain damage, hyperactivity and cerebral dysfunction can be considered as precursors to ADHD (Rothenberger and Neumarker 2005 cited in Lange et al., 2010).

Still also showed a proportion of 3:1 within ADHD boys to girls. He also indicated that symptoms are shown before the age of seven. He considered a defect in child's moral control only if it doesn't meet the standard moral for a child at a certain age. All these are now stated in the DSM IV or in the American Psychiatric Association for ADHD criteria. In addition he talked about "an abnormal degree of passionateness" (Still 1902, p.1009 cited in Lange et al., 2010) in ADHD children where he meant impulsivity. He also mentioned regarding his ADHD cases "a quite abnormal incapacity for sustained attention" (Still 1902, p.1166 cited in Lange et al., 2010.) which is known now as attention deficit. Hyperactivity was hinted at by Still only in one case (Lange et al., 2010).

But not only these were the symptoms that he talked about regarding his cases, he mentioned also symptoms related to what we know today of conduct disorder, or oppositional defiant disorder such as laughing at the grief of other children when throwing their toy in the fire, stole , lie, maltreat animals, etc…. "His description included the full range of externalizing behaviour disorders" (Conners 2000, cited in Lange et al.,2010).

Franz Kramer and Hans Pollnow:

In 1932 the Germans physicians Franz Kramer and Hans Pollnow brought a description "on a hyperkinetic disease of infancy" that comprise the three major symptoms of ADHD; hyperactivity, impulsivity and inattention (Rothenberger and Neumarker, 2005 cited in Lange et al., 2010). They remark that the pathological manifestation was discovered previously but had to be set as a distinct disorder, and therefore to be differentiated from the other disorders that has similar symptoms. They brought out the concept "hyperkinetic disease" which is very similar to what is known today ADHD.

Bradley

In 1937Charles Bradleyobserved the effect of stimulant medication in hyperactive children and was considered as a crucial discovery in the psychiatric treatment (Brown, 1998 cited in Lange et al., 2010).

Second Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM II):

In 1968 the concept of Hyperactivity was integrated in the second edition of the Diagnostic and Statistical Manual of Mental Disorders (Barkley, 2006a cited in Lange et al., 2010). It was given the name "Hyperkinetic Reaction of Childhood" and was defined as "The disorder is characterized by over-activity, restlessness, distractibility, and short attention

span, especially in young children; the behaviourusually diminishes by adolescence'' (American Psychiatric Association 1968, p. 50, cited by Barkley 2006a, p. 9 cited inLange et al.,2010). The disorder was differentiated from learning disability at this stage (Spohrer , 2006).

Third Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III) &the International Classification of Disease (ICD):

In 1980 the DSM III gave the disorder a new name: "Attention Deficit Disorder (ADD) (with or without hyperactivity)" (Barkley 2006a cited in Lange et al., 2010). The significant symptoms of the disorder were the deficits in attention. DSM-III opposes the International Classification of Disease (ICD-9) which considered the hyperactivity an indicator of the disorder at that time. DSM-III brought out several symptoms and their cut off score, guidelines for the onset age and the duration of the symptoms, and the exclusion criteria for other psychiatric conditions (Barkley 2006a cited in Lange et al., 2010).

DSM-III-R(revised):

In 1987 the DSM-III-R(revised) gave the disorder the name Attention deficit-Hyperactivity Disorder (ADHD) where the three main symptoms of inattention, hyperactivity and impulsivity were put into a single list with single cut off score (Barkley 2006a cited in Lange et al.,2010). The ADD without hyperactivity was put in a category named "undifferentiated ADD" (Rothenberger and Neumarker, 2005 cited in Lange et al., 2010).

DSM-IV:

In 1994 DSM-IV differentiated between ADD with hyperactivity and without hyperactivity, the categories in DSM-II-R were divided into three subtypes; predominantly inattentive type, predominantly hyperactive-impulsive type and the combined type. It was also proved that there are structural abnormalities found in the brain of those with ADHD (Barkley,2006a, cited inLange et al., 2010) . At the end of the 1990s researches proved that ADHD has a genetic component (Biederman et al. 1990 cited in Lange et al., 2010) and recognized that the disorder remains into adulthood in several cases, which means it can be chronic and persistent and that it doesn't disappear by age as they thought before (Barkley, 2006a, cited in Lange et al., 2010).

DSM -IV and ICD-10:

DSM -IV and ICD-10 had extremely the same criteria in looking for inattentive, hyperactive and impulsive symptoms. They had some differences in the number of criteria required in each domain to make the diagnosing, "the importance of inattention and the handling of comorbidity." (Lange et al., 2010 p.253). The ICD-10 is considered to be more demanding regarding "cross-situational pervasiveness" and asks for the criteria to be present both at home and school or in any other situation.The description of ADHD had not been changed in the DSM-IV Revised (Lange et al., 2010).

2.2.2. Barkley's theory of ADHD:

The impairment found in ADHD is due to deficit in the child's self-regulation (Barkley, 1999 cited in Reid and Johnson; 2012). Brkley sees the disorder as problems in the behavioural inhibition within the child as the core reason for ADHD behaviour. They act and respond very quickly and in an automatic way, this will overwhelm the executive functions which usually help in guiding behaviour. Therefore , they can't monitor if suitable to act this way in this situation, as well as they can't take into consideration the sequences of their behaviour, the result would be an impulsive behaviour.

Barkley's theory focuses on four important processes that are important for self-regulation (executive function) (Reid and Johnson ; 2012)

1-Nonverbal working memory: important for self-awareness, the sense of time, looking at retrospective and prospective functioning, calling up memories and make use of it.

2-Internalization of speech: important for self-questioning(self-talk) that helps in describing what is happening and then respond, as well as for problem solving(how to solve this problem?).

3-Self-regulation of the child's affect, arousal, motivation: controlling action depending on the emotional response, that might bring physical response as well.

4-Reconstitution in the meaning of planning: to analyse behaviour and how to plan.

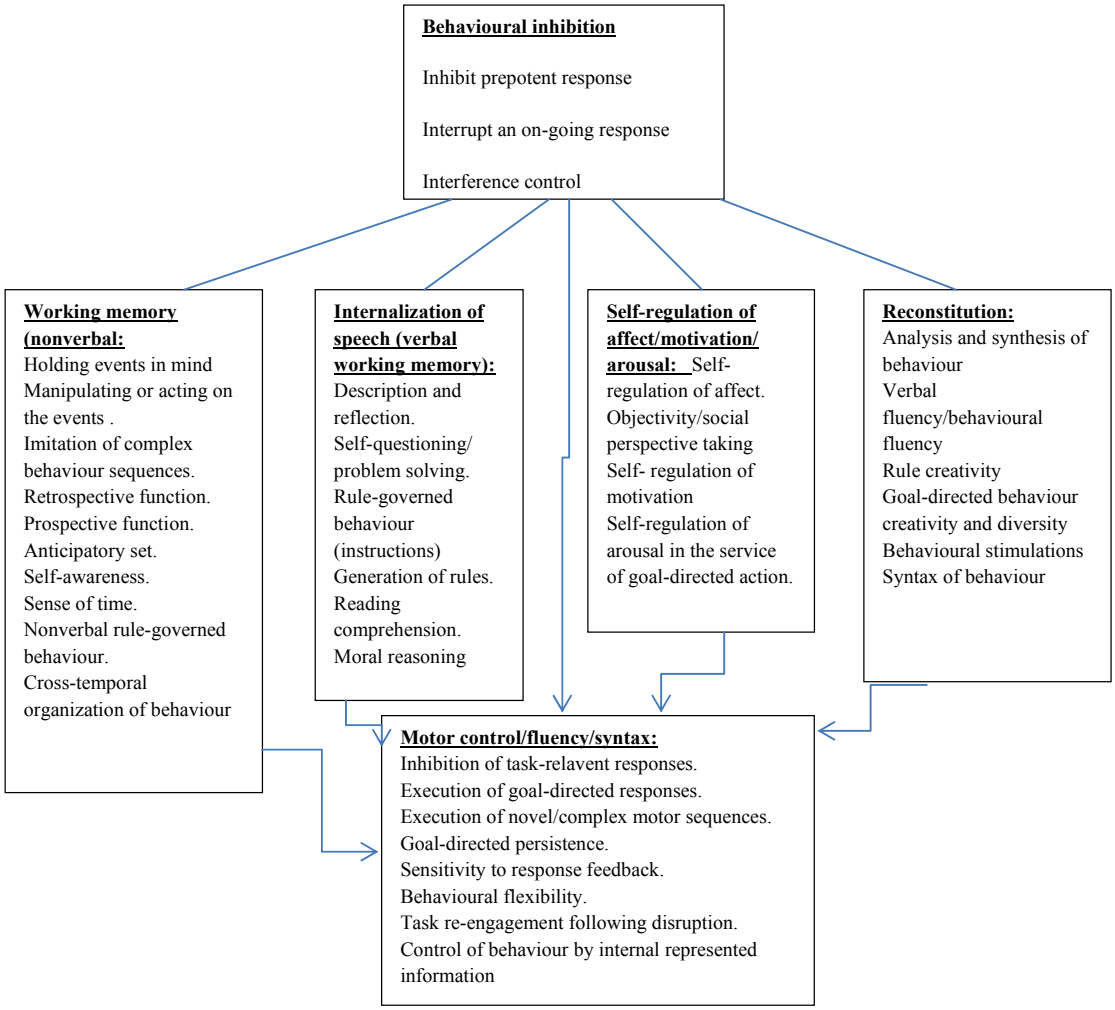

Figure 2.1 Barkley Model (1997) that illustrates the complete executive functions (boxes) and their relationship to the Behavioural Inhibition and Motor Control Systems(Lewis, 2002, p.656)

Barkley's theory describes how these executive functions can control behaviour, moral reasoning and reflection. Barkley's theory describes only ADHD combined type. He argues that the other types should have a distinct disorder(Reid and Johnson ; 2012)

2.2.3.Brown's theory of ADHD:

Brown had established a model explaining how behavioural inhibition is not a primary nor a superordinate over the previously mentioned components of executive functioning. In contrast to Barkley, he illustrated six dimensions of executive function where he thinks are the source of difficulty in ADHD, and he meant to be comprehensive for all types of ADHD(Chandler, 2010):

1-Activation: organizing, estimating time, prioritizing, when to start a task.

2-Focus: focusing, shifting focus to the task, sustaining focus.

3-Effort:sustaining effort, regulating alertness, processing speed.

4-Emotion: modulating emotions and managing frustration.

5-Memory: accessing recall, using working memory.

6-Action: impulse control , regulating self-action and monitoring.

These six dimensions might overlap and also influence each other. None is more important than the other. They account for the development of ADHD according to Brown

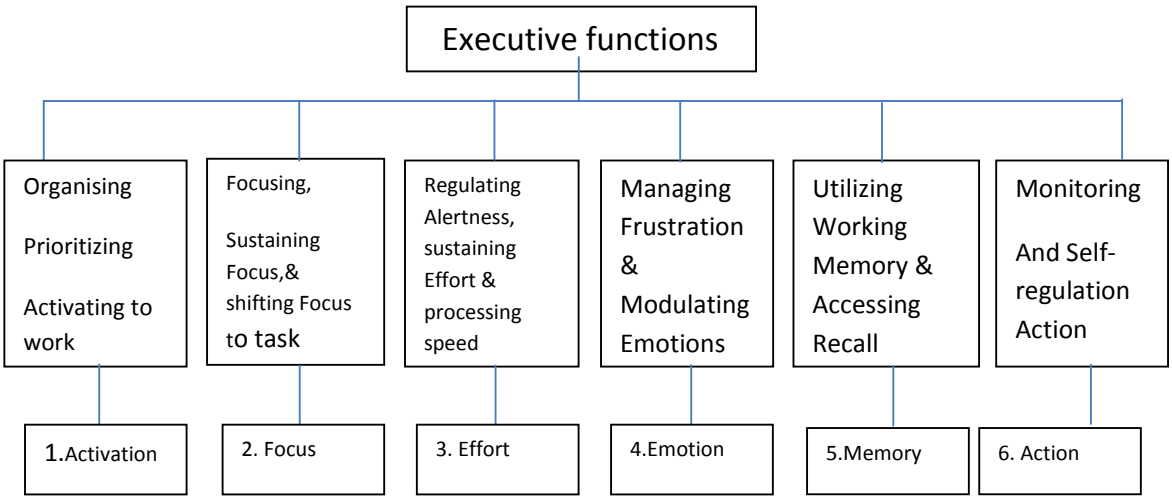

Figure 2.2: Brown's dimensions of executive function (Lewis, 2002, p.656)

2.3 Etiology:

Three main theories had explained the aetiology of ADHD. First, considering the biological factor as the main role in accounting for ADHD. Second, the intrapsychic theories which explain inattention, hyperactivity and impulsivity are due to central underlying deficit. Third, the psychosocial factors are considered to have a role in the development and maintenance of the symptoms (Carr, 2005).

2.3.1.Biological theories:

These theories include the effect of genetic factors, neurotransmitter dysregulation, structural brain abnormalities, dietary factors and underarousal (Carr ,2005).

Brain development can be adversely affected during early childhood and perinatal life which can increase the risk of ADHD. Example on risk factors:Maternal smoking (linnet et al, 2003 cited in Nice,2009),heroin use during pregnancy(Ornoy et al.,2001 cited in Nice,2009), consumption of alcohol(Mick et al.,2002 cited in Nice,2009), very low birth weight (Botting et al., 1997 cited in Nice,2009), exposure to certain toxins such as lead and zinc deficiency, brain injury, fetal hypoxia (Toren et al.1996 cited in Nice,2009) .Risk factors usually interact with each other and do not work in isolation(Nice, 2009).

2.3.1.1. Genetic influences:

Twin,family, molecular and adoption studies had proved that there are strong genetic influences among ADHD(Tsuang Tohen and Jones, 2011). Twin studies found that the variation in ADHD symptoms among population is due to genetic factors and heritability is estimated between 0.7 to 0.8(Faraone et al.,2005 in Nice,2009). A study compared the presence of ADHD children among adoptive relatives and biological relatives of ADHD kids , results showed that the last were more likely to have ADHD (Tsuang et al.,2011).

2.3.1.2.Neurotransmitter dysregulation :

This biological theory hypothesis that certain abnormality in the neurotransmitter found at the synapse and that might be affected by certain psycho stimulants that can cause the symptoms of ADHD. According to McCracken (1991) , the dopamine in the ventral tegmental area and the noradrenaline and adrenaline found in the locus coeruleus in the brain are found to be disregulated in ADHD cases. He also added that giving the ADHD case a psychostimulant as a treatment, such as methylphenidate and dextroamphetamine will affect these systems. It is recognised that 60-90% of ADHD children respond to these type of psychostimulants. They showed an improvement in their social and academic performance during treatment stage, while it may drive away when the treatment stops (Taylor, 1994b cited in Carr, 2005)

2.3.1.3Structural Brain Abnormalities:

Many studies search for brain image in ADHD children and adults. These studies revealed several disturbancesin some areas in the brain in ADHD cases. The prefrontal cortex, and the anterior cingulated cortex have a control on the executive functioning (working memory, motor execution, inhibitory control), selective attention and making decisions.

These areas were found to be disturbed in ADHD cases. In addition, the basal ganglia dysfunctioning was a finding in ADHD cases. These findings recognised a dysregulation in the frontostriatal circuitries. The cerebellum is involved in affect and cognition, was also found to be concerned in the pathology of ADHD. Studies revealed that Brain-imaging data of childhood ADHD don't change into adolescent and adulthood. ADHD cases were found to have volume differences in brain areas involved in attention and executive functioning (Retz and Klein, 2010).

These are some of brain areas that were found to be reduced in ADHD cases (Retz et al.,2010):

Table 2.1: affected brain areas and ADHD:

AREA	INVOLVED IN	CAUSES
• Right hemisphere cerebral volume (reduction, or damage)	-Decision making -Inhibitory control -Selective attention	-Desynchronization of brain activity. -Neglect of sensory stimuli
• Volume reduction of any of frontal lobe parts (1)DLPFC, (2)VLPFC	 -Attention -Working memory -Planning -Organization of tasks -Regulation inhibitory control -Social behaviour regulation -Balance of inhibition and disinhibition -Emotional attribution to decisions	
(3)Diminished left orbitofrontal brain volume (4)Selective thinning of cerebral cortex and Cortical thinning in right hemisphere	-Social behaviour -Impulse control -Attention -Executive functionning	
• Temporal lobe (reduced volume)	-Language -Object identification -Emotional regulation -Memory function	
• Basel ganglia(volume reduction)	-Learning -Automatization over Motor programs and behaviors	-Inattentive behaviour (Not evidence based yet)
• Corpus Callosum	-Attention	-Problems in holding sustained

(injury), volume reduction	-Learning	attention -Deficit in learning and memory.
• Parietal lobe volume reduction	Attention orienting	-Impaired attention

2.3.1.4.Dietary Factors:

Allergy hypothesis: Certain features of daily diet are involved in evolving the symptoms of ADHD(Carr , 2005). Food additives, colourings, "E" numbers and sugar are some of these diets (Nice,2009). Frengold theory(1975) says that colorants and artificial food may account for certain ADHD symptoms(Taylor,1995 cited in Carr, 2005) . Egger et al.(1985) restate Freingold's theory by saying that " particular children with ADHD may have unique allergy profiles, and if their diet is modified so as to exclude precise substances to which they are allergic, then their activity and attention problems may improve" (Egger et al., 1985 cited in Carr, 2005, page 378).

Parents always claim that their child's hyperactivity symptoms and distractibility become worse after eating a lot of candy or a high carbohydrate meal. Scientifically , researches failed to recognise any significant effect. (Millichap , 2010).

A link between preservatives and additives in the diet was found in an epidemiological research to affect the level of hyperactivity(McCann et al.,2007 cited in Nice,2009). Only a small number of ADHD children showed idiosyncratic reaction to artificial additives and/or natural foods (Nice,2009). The idea is that the adverse reaction of these children can be triggered by one or more substances. Thus, elimination diets is used in research . The substance that affects the individual will be discovered and then eliminated from diet (Nice, 2009).

The supplementary diet is another diet that was used to test for ADHD symptoms regarding diet , using fatty acids was most common. A research done by Steven et al., (2003) on two groups of ADHD children, one receiving fatty acid (proprietary preparation of PUFA) and the other olive oil placebo, indicated a small or no effect (Nice,2009).

Dietary interventions quality is found to be poor in literature. Still it is inconclusive that there might be an increase in ADHD symptoms between groups using the elimination or the supplementation diets (Nice,2009).

2.3.2. Intrapsychic Theory:

This theory explains the symptomatology pattern of ADHD. One single core deficit is sufficient to cause the overall symptoms of impulsivity, over activity and attention (Carr,2005).

2.3.2.1InattentionHypothesis:

This theory explains how a child who is unable to sustain attention on a certain task, and unable to screen out any distracting stimuli is considered to be the core difficulty that evolves the symptoms of impulsivity and overactivity (Douglas, 1983 cited in Carr, 2005).

2.3.2.2Overactivity Hypothesis:

This theory explains how a child who has a problem which inhibit motor activity is considered the core deficit that evolves ADHD syndrome and, therefore, cause inattention and impulsivity as well(Schachar,1991 cited in Carr, 2005).

2.3.2.3 Impulsivity Hypothesis:

It explains how a child with an inability to inhibit cognitive and behavioural responses to a certain stimuli, will cause poor performance in attention ability as well as on tasks that require careful regulation in behaviour (Barkley, 1994 cited in Carr , 2005).

2.3.3 Psychosocial Factors:

It is well known that ADHD is associated with severe psychosocial adversity (Roy et al.,2000 cited in Nice, 2009). The mechanisms are not yet clearly identified but it may be that the child fails to gain cognitive and emotional control.

Families who had ADHD children are more inclined to have discordant and disrupted relationships (Biederman et al., 1992 cited in Nice,2009) either as a risk factor or as a cause for the disorder itself. The development of Conduct problems or oppositional problems within children in the family may be due to discordant relationships and harsh parenting style both together as a risk factor. If the ADHD is under stimulants medication, it will help in reducing the parental hostility and criticism. On the other hand, if parents themselves have ADHD but untreated or unrecognised, it may have an adverse effect on managing a child who already has ADHD (Nice,2009).

2.4 Clinical Description:

2.4.1 Attention Difficulties:

Children who have inattention symptoms are found to be impaired in school as a major deficit in addition to difficulties in social and family relationships. There are specific descriptions from the teacher of ADHD child: "being chronically late, forgetful, disorganized, losing things, daydreaming, off task, unable to finish their work, and procrastinating"(Lewis , 2002, p647). Difficulties seen on these children may overlap such as difficulties to stay on task, to get on task and to finish a task. In addition, they may include being "scatterbrained, spaced out or not listening"(Lewis M, 2002,p.647). Furthermore, they may show variability in performance, difficult to understand sequenced commands or to follow instructions and variability in performance . it is also important to differentiate between the meaning of inattention brought by the family and that of the professionals.(Lewis , 2002).

2.4.2 Hyperactivity:

The child is seen to be on the go. The child looks restless more than doing excessive activity. The child is seen to be structured in his seat with excessive activity as well as in sleep (Porrino et al., 1983 cited in Lewis , 2002).

According to Klein and Young (1979), a child is considered to be hyperactive when he has a combination of high disruptive behaviour with high activity. Therefore, the difference between normal and ADHD child lies in the quality and quantity of the activity. A hyperactive child activity is seen off task, disruptive, out of seat, inappropriate, has no goal, and no purpose to the task on hand(Lewis , 2002).

In the first session a hyperactive child may seem not hyperactive, so it should not be ruled out from the first session, but a preschool child might be restless and cause a mess in the office, even at the first session(Lewis , 2002).

2.4.3 Impulsivity:

The child is seen to be unable to delay his responses, although there might be negative consequences for his behaviour. Examples on these behaviours are: being unable to wait until hearing the question of the teacher, difficulty to wait in line, interrupt answers. They

look to be more daring compared to peers. Others may view an impulsive child as " wanting his way or no way", being the boss or else will leave the game, can easily get in physical fights when hurt. Procrastination becomes a problem due tochild's increased responsibility. The child will keep on not completing homework, which will affect family functioning , and therefore, will not hand assignments((Lewis , 2002).

Cognitive impulsivity is shown when the child does schoolwork full with errors, misses the details, messy writing and writing the answer without the question being read carefully(Lewis , 2002).

2.4.4 Behavioural Features:

Behavioural features of ADHD vary in type and severity according to developmental level, gender and age. Some features are being stubborn, low level of frustration tolerance, liability of emotions, procrastination, depression, temper problems, peer rejection, poor self-esteem and self-concept.It is also common to see devaluation as well as dislike of academics. These factors are not necessarily due to learning process but to behaviour constraints.Lack of responsibility and laziness are common features seen by teachers and parents in the ADHD child as well as conflict with authority. As a result of all these problems, the ADHD child might develop learned inappropriate behaviour which will become associated with ADHD behaviour (Flick, 2010).

2.4.5 Cognitive features:

Barkley showed how ADHD children have a decreased sense of time. Therefore, they usually face difficulties in tasks that depend on time. In turn, this will have an impact on test performance as well as are emotional development that connects past, present and future in order to grow out. The ADHD child will exclusively live in the present due to his lack in the sense of time. For example, adults ADHD patients are mostly found to be underinsured because insurance is a future issue. As a result, lack of sense of time will cause problems in planning, playing games and waiting(Lewis, 2002).

ADHD children have short-term registration of many items, cannot remember or follow instructions, cannot hold things in their head, face difficulties in mental manipulations of numbers or concepts(Denckla,1996 cited in Lewis,2002).On the other hand, they cannot access the information that was present in the past, which means they have difficulty in memory activation(Lewis,2002).

2.4.6. Emotional Features:

Dysregulation of affect is often associated with ADHD besides the hallmark difficulties in controlling daily activity. This dysregulation is shown through temper outbursts, reactivity and mood liability. The mood of these children is known to change dramatically, explosive and intense. The alteration in mood begins at once and disappears dramatically as they started. The impact of this alteration is unprocessed by the child but it leaves close people in chock (Lewis, 2002).

2.4.7 Social Features:

Children and adults with ADHD are known to face difficulties in peer relationships. Dumas (1998) reported several difficulties in social functioning experienced by ADHD cases: isolation, involvement in fights, rare and unsteady friendships , inadequate social competence, more social problems compared to controls with no ADHD(Gullota Adams and Ramos,2005).

ADHD children find it difficult to deal with other children, to follow rules while playing games, and to respect social hierarchies. Therefore, they will be verbally and sometimes physically aggressive when they experience social rejection and teasing (Lewis , 2002).

ADHD children have good relationship with animals; they love and maybe are good to them. They develop unconditional love with them and provide them the companionship they want (Lewis,2002).

ADHD children function better with a calm and patient adult who in turn will minimize the excessive stimulation of the ADHD child and can control his responses according to the child's need. It was seen that ADHD children do better playing with a younger or an older child. ADHD children prefer to chat with groups on internet since their difficulties are not seen (Lewis ,2002).

2.5 Diagnosis and Assessment

2.5.1. Diagnosis System and Criteria:

The criteria used commonly for diagnosing a child with ADHD are those provided in DSM-IV-TR and in the ICD-10.

In the DSM the criteria are divided into two groups: inattentive and the hyperactive-impulsive. To diagnose a child with ADHD combined type, six of the nine symptoms of each group must be present. If the symptoms are insufficient to have a combined type diagnosing then predominantly inattentive and hyperactive diagnoses will be available (Nice, 2009)

In the ICD the symptoms are all listed under the name of hyperkinetic disorder, and must all be present for diagnosing. It qualifies only combined type of ADHD. ICD requires more restricted diagnosing criteria; all the symptoms must be present in more than one context, and it exclude children with any other disorders including anxiety, unless it is clear that thehyperkinetic disorder is considered as additional to the other disorder. In DSM the coexistence of psychiatric disorders are allowed (Nice,2009).

DSM-IV Criteria for Attention Deficit/Hyperactivity Disorder (DSM IV,2000,p.92-93)

A. According to the DSM-IV, a person with Attention Deficit/Hyperactivity Disorder must have 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 school work, 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 behaviour 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 or restlessness)

(d) often has difficulty playing or engaging in leisure activities quietly

(e) is 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 or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be 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, Disassociative Disorder, or a Personality Disorder).

Attention Deficit/Hyperactivity Disorder, Combined Type: if both Criteria A1 and A2 are met for the past 6 months.

Attention Deficit/Hyperactivity Disorder, Predominantly Inattentive Type: if Criterion A1 is met but Criterion A2 is not met for the past 6 months.

Attention Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type: if Criterion A2 is met but Criterion A1 is not met for the past 6 months

Inattention, hyperactivity, and impulsivity are the common behaviors of ADHD. Some may say that it is normal for all children to be inattentive, hyperactive, or impulsive, but for children with ADHD, these behaviors are more severe and occur more often. According to the DSM IV a child to be diagnosed with this disorder must have symptoms

for 6 or more months and to a degree that is greater than other children of the same age (DSM IV,2000)

2.5.2.Assessment:

It is important that the key characteristics of ADHD are taken into consideration to understand the assessment of ADHD, the key features are(Nice,2009):

-The existence of the main problems of inattention, hyperactivity and impulsivity.

-These features must be inappropriate when compared with people in the same developmental level.

-Long duration of the symptoms

-Symptoms must be found in more than one setting; home, work, school…

-Symptoms must make an impact on psychosocial adjustment as well as current and/or general development

-" the need to distinguish from neurodevelopmental disorders associated with learning disabilities and cognitive problems, and other mental health disorders or problems- neither using those other problems as evidence for ADHD nor neglecting the presence of ADHD when it coexists with them"(Nice,2009, p 23).

-The need to figure out whether the impairment is caused only by ADHD or is caused by other disorders, or personal and social circumstances.

2.5.2.1 Parental Interview:

Diagnosing a child with ADHD rely on the clinical judgement. Therefore, interviewing the parents taking into consideration difficulties of the child at home, school and community, concerning ADHD and the associated features will be the core of the assessment procedure. Physical and emotional developmental history is carefully obtained to the present time. The age at which difficulties were presented first and how they developed is also included (Lewis , 2002.).Assessing family functioning is also important, considering these areas (Lewis , 2002):

-Family stressors and their effect on the child.

-Psychosocial adversity and any past trauma.

-Punishment strategy used in the family.

-History of abuse.

-Evaluation of marital relationship

-Effect of child on the family

-Agreement of parents on parenting issues

-History of any psychiatric disorder in the family, especially ADHD, learning disabilities, conduct disorder, depression.

-History of parents regarding disorders such as ADHD, LD or depression.

2.5.2.2Child Evaluation in the Office:

Children cannot report their difficulties accurately in the office, especially in the first visit, where the child might also behave in a normal way. Cognitive impulsivity can be identified in the office using simple tools such as paper and pencil. It is important to figure out the self-image of the child, as well as his/her world view. Comorbidity is evaluated in the office. Questions that open windows to the inner world of the child should be asked to the child. For example: "do you worry about things? what kind of things make you feel like this?, do you sometimes feel sad or mad?"(Lewis , 2002,p 650). Asking the child to talk about three magic wishes may bring out unexpected issues.

2.5.2.3 Information from School:

Important areas to be investigated either by a school report or through a telephone call:

- learning situation

- ADHD rating scale by teacher

- Comorbid disorder

-Present difficulties

- Onset of difficulties

The contact between school and the treating physician is very crucial to make good assessment and treatment as well (Lewis, 2002)

2.5.2.4 Psychoeducational Assessment:

It is important to evaluate the child's intelligence as well as the academic achievement. In turn, learning disabilities will be figured out if present, and will be able to assess its nature. Learning disabilities are much seen in the inattentive type, where they are secondary to LD. Low IQ children may develop inattention due to the advanced teaching level in the class(Lewis , 2002)

2.5.2.5 Medical Evaluation:

Medical history and physical examinations should be performed for the child. Any deficit in visual or hearing capabilities should be ruled out. The history of pregnancy should be taken from the mother, taking into consideration the smoking and drinking patterns. Sleep disturbance should be investigated as it might cause ADHD-like symptoms. No medical tests are to be done(Lewis , 2002).

2.5.2.6 Rating Scales:

Rating scales provide the clinician with a wide range of information about different symptoms. Rating scales can be given to different observers, where the child is rated in different environments as well as at different points in time. They help to assess severity of the symptoms, facilitate communication between the different observers regarding the findings and they help in measuring change with treatment (Lewis , 2002).

The Conners Rating Scale and the Achenbach are the most two common rating scales used to assess ADHD. The first scale was revised in 1999, and the last was issued in 2001. They provide ratings of attention and hyperactivity/impulsivity symptoms separately (Lewis , 2002).

2.6 Differential Diagnosis:

Key issues in differential diagnosis(Lewis, 2002).

1-Inattention: is it due to physical deficit? For example poor sleep, tic disorder, visual or hearing deficit.

2-Depression or anxiety: is at primary or secondary? It may be the cause of the behavioural difficulties and the inattention.

3-Learning disabilities: they can cause secondary attention problems, as well as restlessness.

4-Child abuse or/and chaotic home: they may cause behaviour disorder similar to ADHD, although they might be secondary to ADHD.

5-Oppositional disorder or conduct disorder: symptoms might look like these disorders or might be comorbid to ADHD.

6-Hypomania or bipolar disorder: symptoms might look like these disorders or might be comorbid to ADHD.

7-High level of activity: parents may not know the expected level of activity from their child, and therefore might be mistaken for restlessness.

2.7 Comorbid Disorders:

Comorbidity is a term used when one or more disorders occur in addition to ADHD. The ADHD children have high risk to have a comorbid disorder. Wilens and his colleagues have reported an 80% of ADHD schoolaged children had a comorbid disorder(Wilens et al.,2002 cited in Reid et al.,2012) . Here are some of the common comorbid disorders to ADHD:

2.7.1 Oppositional Defiant Disorder(ODD):

ODD is considered as one of the most common comorbid disorder with ADHD. Between 45 to 85% of ADHD children were found to have ODD, or ODD combined with CD. The most important features of ODD are hostility, disobedience and a continuing pattern of defiance. The child looks always aggressive, argue with adults, do things that annoys others and refuse to follow adults directions(Reid R. et al.,2012) .

2.7.2 Conduct Disorder(CD):

Comorbidity of ADHD and CD is estimated to be from 15-56% in children and 44-50% of adolescents (Wilens et al., 2002 cited inReid et al.,2012).

2.7.2.1 Definition of CD:

Conduct disorder is defined as " a continued pattern of behaviours that violates the basic rights of others or age-appropriate societal norms". It is classified into four major groups: (1) aggressive conduct that usually threaten or make physical harm to people or animals.(2) non aggressive conduct that damage property of others.(3) deceitfulness or theft.(4) violation of rules.(Reid et al.,2012, p.26).

2.7.2.2 Subtypes of CD:

2.7.2.2.1 Childhood Onset Type:

At least one of the DSM IV criterion characteristic is found before the age 10 years. Children of this type are mostly men, being physically aggressive toward others, having disturbed relationship with peers, may have ODD in the early childhood, later on before puberty will have a full criteria of the disorder.CD of this type is more likely to develop antisocial personality disorder in future and to have persistent CD(DSM –IV TR,2000).

2.7.2.2.2 Adolescent-Onset-Type:

No symptoms of CD before age 10 are present. CD children of this type are less aggressive, and have normative peer relationships. They show some conduct problems with others. They are less likely to develop antisocial personality disorder in adulthood or to have a persistent conduct disorder (DSM-IV TR,2000)

2.7.2.3The Diagnostic Criteria According to DSM-IV TR:

A.A repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of three (or more) of the following criteria in the past 12 months, with at least one criterion present in the past six months:

Aggression to people and/or animals

1. Often bullies, threatens or intimidates others.

2. Often initiates physical fights.

3. Has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun).

4. Has been physically cruel to people.

5. Has been physically cruel to animals.

6. Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).

7. Has forced someone into sexual activity.

Destruction of property

1. Has deliberately engaged in fire setting with the intention of causing serious damage.

2. Has deliberately destroyed others' property (other than by fire setting).

Deceitfulness or theft

1. Has broken into someone else's house, building or car.

2. Often lies to obtain goods or favors or to avoid obligations (i.e., “cons” others).

3. Has stolen items of nontrivial value without confronting the victim (e.g., shoplifting, but without breaking and entering; forgery).

Serious violations of rules

1. Often stays out at night despite parental prohibitions, beginning before age 13 years.

2. Has run away from home overnight at least twice while living in a parental or parental surrogate home (or once without returning for a lengthy period).

3. Is often truant from school, beginning before age 13 years.

B.The disturbance in behavior causes clinically significant impairment in social, academic or occupational functioning.

C.If the individual is age 18 years or older, criteria are not met for antisocial personality disorder.

Specify severity:

Mild: few if any conduct problems in excess of those required to make the diagnosis, and conduct problems cause only minor harm to others.

Moderate: number of conduct problems and effect on others intermediate between "mild" and "severe."

Severe: many conduct problems in excess of those required to make the diagnosis, or conduct problems cause considerable harm to others.(DSM-IV TR,2000,p.98-99)

2.7.3 Depression:

ADHD child is likely to have a depression five times more than none ADHD child(Angold et al.;1999 cited in Reid R; Johnson,J;2012) . The cause of this comorbidity may be attributed to psychosocial risk factors(Drabick, 2006 cited in Reid et al.,2012).

2.7.4: Anxiety Disorders:

Anxiety disorder might include social phobia, panic disorder, post-traumatic stress disorder or acute stress disorder. ADHD children are three times more likely to have anxiety disorder than none ADHD children(Angold et al, 1999 cited in Reid et al.,2012) . The prevalence of this type of comorbidity is estimated to be between 25-35% (Tannock, 2000 cited in Reid et al.,2012).

2.7.5: Obsessive – Compulsive Disorder(OCD):

Very few studies were held on the comorbidity between ADHD and OCD. The general agreement was on prevalence of 3-5% of ADHD and OCD (Reid et al.,2012).

2.7.6 Bipolar disorder (BPD):

The comorbidity of BPD and ADHD was estimated between 10 to 15%(Milberg, 1995 cited in Reid et al.,2012).

2.7.7.Learning Disabilities(LD):

Literature brings out a wide range in the prevalence of ADHD comorbid with LD. This might be attributed to the definition used to describe LD. The range found was from 10% to 90%(Semrud-Clikeman et al.,1992 cited in Lewis ,2002).

2.7.8. Tourett's Syndrome(Tic Disorder):

It is considered as most of the common comorbid disorder with ADHD (Freeman et al., 2000 cited in Lewis ,2002). It is defined as a repetitive motor or vocal tics (DSM-IV TR, 2000).

2.8 Prognosis of ADHD:

Until 1980s, ADHD was known as a childhood problem and will be outgrown in adolescence and adulthood. Recent studies proved that this is not the case. (Ayers , 2007). It is evident that there is no medication that can cure ADHD although, it is considered as the most treatable among psychiatric disorders and has a good prognosis for children, adolescents and adults when being under treatment (www.medifocus.com).

Early diagnosing and treatment of ADHD is very crucial as it builds up the future functioning of the child. In addition, reassessing the ADHD individual by a clinician regularly is important to figure out if symptoms do no longer exist or some had improved, and therefore to take a decision on modifying medication or stopping it. On the other hand, family and patient consultation had an important role on the possibility of medication to be withdrawn (www.medifocus.com).

Symptoms of ADHD are expected to go one of these three pathways:

1- Partially resolved.
2- Lessen with age.
3- Stay the same or worsen.

In general, the symptoms could be controlled by medication.It has been recognized that from 50% to 80% will continue to have ADHD symptoms until adulthood (Murphy& Gordon, 1998 cited in Ayers ,2007). Symptoms of ADHD may have the adult face difficulties in holding a job, may cause marital distress, juvenile delinquency and being a criminal in adulthood, of course if left untreated. Furthermore, mood disturbance might be

present in adult ADHD. Studies proved that among substance abusers and criminals there was a significant proportion of those untreated who have ADHD. In conclusion, early intervention and giving the right medication and therapy are very crucial to prevent such results (Ayers ,2007).

2.8.1.Adolescent Outcome:

If an ADHD individual was left untreated, according to several studies in Montreal(Weiss et al.,1971,1979 cited in Lewis ,2002), New York(Klein and Mannuzza,1989 cited in Lewis ,2002), Milwaukee(Barkley,1999; barkley et al., 1990; Biederman et al.,1996cited in Lewis ,2002), has proved that the patient will suffer from the following outcomes: poor educational achievement, worsening psychiatric Status, antisocial personality disorders or conduct disorder, cigarette smoking, car accidents, criminality and family factors.

2.8.1.1.Poor Educational Achievement :

- Worse grades
- Fails more in grades
- Low level of learning achievement from age 13-18.
- Worse in reading and arithmetics(learning disability)(Lewis,2002)**:**

2.8.1.2: Worsening Psychiatric Status:

- Increased number of comorbid disorders:
- Oppositional defiant disorder.
- Conduct Disorder.
- Major Depressive Disorder.
- Psychoactive Substance Abuse Disorder.
- Anxiety Disorder.
- Learning Disabilities(Lewis,2002).

2.8.1.3.Antisocial Personality Disorder or Conduct Disorder:

The risk for ADHD individual to develop APD or CD was found in all the previously mentioned studies. Between 23% to 40% was the risk to develop these disorders versus 1% to 8% of the controls(Lewis,2002).

2.8.1.4.Cigarette Smoking:

Starting smoking at an early age(14 year) was obvious within ADHD individuals and their siblings. It was observed that major depressive disorder and drug abuse were associated to cigarette smoking ADHD individuals(Lewis,2002).

2.8.1.5. Car Accidents:

They were observed to have more car accidents associated with body injury(Barkley et al., 1993 cited in Lewis, 2002).

2.8.1.6: Criminality:

At the age of 18 in the previous studies, it was observed that 39% had been arrested whereas in controls 20%, conviction was 28% versus 11% within probands and controls respectively, jailed was 9% versus 1% . APD was also accounted for the risk of criminality(Lewis,2002).

2.8.1.7:Family Factors:

- less stable family
- Has high divorce rate.
-Family changes jobs often.
- Conflict in the family.
- Reduced cohesiveness.
-If parents exhibit antisocial behaviour, anxiety, depression, antisocial behaviour and aggression were seen more in probands than controls (Lewis,2002)**.**

2.8.2 Additional Outcomes in Adulthood:

2.8.2.1: Polysubstance Use Disorder:

The New York study (Mannuza et al.,1993,1998 cited in Lewis,2002) had a significant results concerning PUD. Between 12-16% in probands versus 4% in controls. In Milwauki study(Milberger et al., 1997 cited in Lewis M,2002) risk for Cocaine was 37% among probands versus 18% among controls.

2.8.2.2. Sexual Behaviour:

It was significant in the Milwauki study(Milberger et al., 1997 cited in Lewis M,2002) that ADHD individuls had :

-Intercourse at an earlier age: 15.4 year versus 16.5year for controls.

-More sexual partners: 18.5% probands versus 16.5% controls.

-Pregnancy: 38% probands versus 4% controls.

-Sexually transmitted disease: 17% probands versus 4% controls.

-HIV: 21% probands versus 5.4% controls.

2.8.2.3 Self-Esteem and Social Skills:

The Montereal study found a significant relationship between self-esteem and social skills. Both were impaired among adult ADHD individuals(Lewis ,2002).

2.9: Prognosis of ADHD comorbid with CD:

ADHD children with comorbid conduct disorder show a poor prognostic group if left untreated. It is common to have these children out of school at an early age. A poorly controlled conduct disorder child is very likely to be troubled with the law in adulthood. These children must be taught in life skills that includes communication skills, organisational skills and budgeting (Harris, 2011)

2.10: Impact of ADHD:

The impact of ADHD reaches all aspects of the child's life; the parents, siblings and the child himself. This impact might cause disturbances in the family and the marital functioningthe impact affects ADHD child from preschool years until primary school and up to adolescence. The impact varies from one stage to another. When ADHD stays to adulthood, it might cause disruptions to the professional and personal life as well. On the other hand, ADHD will definitely increase the healthcare costs in the family (Harpin , 2005).

Kewley G (1999) had adapted stages of ADHD(Harpin, 2005):

At age 7(stage 2): a child has ADHD which might lead to low self-esteem.

At age 11:(stage three): all the above + disruptive behaviour, learning delay and poor social skills.

At age 13-adult(stage four): all the above + oppositional defiant disorder, challenging behaviour, and criminal behaviour; all might lead to: school exclusion substance abuse, conduct disorder, lack of motivation, complex learning difficulties.

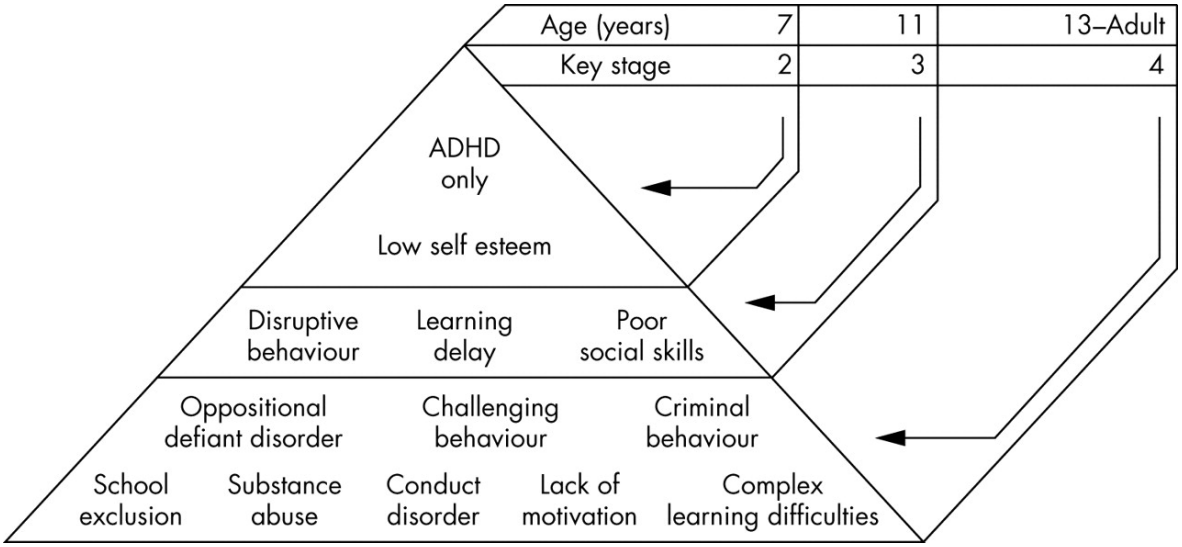

Figure2.3: Kewley G (1999)(Harpin, 2005p.i3)

All these difficulties depend on how ADHD affects the Childs' executive function which is also affected by the demands of the individual made by the environment. These demands vary according to(Harpin V.; 2005):

-Age of the child

-Childs' cognitive ability.

-Childs' Insight

-Family resources.

-School resources.

In conclusion, it is important that the environment should be sensitive, and aware to the needs of the ADHD individual. This, with behavioural and medical intervention will minimise the adverse effect of ADHD on the individual him/herself, family and society (Harpin, 2005).

2.10.1. Impact on family:

A review on the impact of having an ADHD child on the family functioning had been conducted by Johnston and Mash, and they found out the following outcomes (Johnston C.,2002 cited in Harpin, 2005)

- Disturbances to family functioning

-Disturbances in the marital relationship.

-Disruption in the parent-child relationship.

-Reduction in the parenting efficacy

-Increase in the level of stress among parents(especially if CD is comorbid), which inturn increases parental alcohol consumption(Pelham W.1999 cited in Harpin, 2005)

When ADHD child feels the disturbances in the family, he/she will feel sad or might exhibit aggressive or oppositional behaviour(Harpin, 2005).

2.10.2 Impact on siblings:

Although studies were limited concerning the impact of ADHD child among siblings, what was done revealed the following(Harpin ,2005):

-It increase the risk of conduct and emotional problems among siblings(Szatmari ,1989 cited in Harpin, 2005).

-Siblings say that the significant problem is the disruption caused by the behaviours of the ADHD child, where they meant by disruption: victimisation, sorrow and loss, caretaking(Kendall J.;1999 cited in Harpin ,2005)

-Victimisation was explained by the aggression of their ADHD brother which goes out in several pictures: physical violence,manipulation and control, verbal aggression.

-Siblings are expected by their parents to take care of their ADHD brother and protect him, as he/she is emotionaly and socialy immature due to his/herADHD.

-They expressed feelings of anxiety, sadness and worry(Kendall J.;1999 cited in Harpin,2005)

2.11 management of ADHD:

Management of ADHD requires pharmacological intervention besides non-pharmacological interventions such as behavioural therapy.

2.11.1 Pharmacological Treatment:

- The initiation of medication should be done by a psychiatrist or paediatrician.
- Medication counselling is crucial to be done
- The medication to be used is: stimulants or atomoxetine.

- TCAs or neuroleptics could be used, if the stimulant or atomoxetine had intolerable side effects or no response.
- Height and weight should be monitored.
- Sometimes, “drug holidays” can be offered depending on what circumstances.(Clinical Practice Guidelines;2008).

2.11.1.1 Advantages of using pharmacological treatment :

Studies done on the effect of amoxetine on social and family functioning revealed the following (Harpin, 2005):
-The perception of quality of life was improved among the child.
-Improvement in social and family functioning,
-Improvement of childs’ self-esteem.

2.11.1.2 Disadvantage of usingpharmacological treatment:

Although using medication with ADHD children helped them to manage their functional impairment, for some children or parents it might not be preferred or can be contraindicated for those with health problems. Psychostimulants and SRI can have an effect on suppressing appetite and therefore might cause a weight loss. Some studies confirmed weight loss for obese ADHD children after using stimulant medication by 12% of their weight in 466 days while controls who stopped or refused medication gained only 2% of their weight in the same period of time. What remains under investigation is that whether the weight loss is due to controlling ADHD symptoms or due to a direct effect of the stimulant medication. Some studies suggested that stimulants might reduce energy intake. (Levy, 2009 cited in Pagoto, 2011). Other psychopharmacological review studies confirmed that weight loss side effect of using stimulants medication is small and short-lived (Biederman & Spencer, 2008 cited in Pagoto, 2011).
On the other hand stimulants might have other side effects such as increasing blood pressure and heart rate (Hammerness et al., 2009 cited in Pagoto, 2011), sudden death only in small number of patients (Conway, 2008 cited in Pagoto, 2011). Also these stimulants medication might be contraindicated with ADHD children who have cardio vascular disease or structural cardiac abnormalities (Pagoto, 2011).

2.11.2: Non-pharmacological Treatment:

- ADHD children and their families should be provided with psychoeducation.
- Parental training: helps parents to cope with their child symptoms as well as improves symptoms.
- Parental advice: help in managing symptoms.
- If available , the child should be committed to a school-based intervention program.
- The child stays in his classroom with the teachers' aid.
- If the parents observed any specific food that affects child behaviour , they should monitor it and inform doctor about it(Clinical Practice Guidelines;2008).

2.11.3. Behavioural Management of ADHD :

Behavioural management for ADHD is known to be effective in reducing symptoms of ADHD, but less effective than using psychostimulants medication in inhibiting core symptoms of ADHD. The following measures lead to reducing functional impairment such as:

-Better interaction between parents and child.

-Minimising oppositional –defiant behaviour.

Most studies in the literature reveal the impact of behavioural interventions on the short-term outcome, and only on the behavioural aspects. Academic or educational outcome to behavioural interventions needs more investigations.

A combined treatment of medication and behavioural intervention was used in a study for 2 years, results showed no improvement of academic measures in using combined treatment over medication alone(Loe, 2006):

2.11.4Follow up:

- ADHD children should visit the clinician regularly as a follow up.
- The parents should keep their child under medication until symptoms no longer appears(Clinical Practice Guidelines,2008).
- The medication should not be stopped without a proper evaluation (Clinical Practice Guidelines,2008).

2.12 Conceptual Framework:

ADHD is a neurobehavioral disorder that affects the individual since his childhood although it's diagnosed only after 7 years old according to DSM-IV-TR.

Many demographic factors might contribute to the presence of ADHD and to comorbidity with conduct disorder in addition to organic factors, for example; child's gender, child's academic performance, type of the school the child is related to. And regarding the mother of the ADHD child, her educational level may have an effect on developing the symptoms of ADHD as well as her age, marital status, if working or not, number of hours she spends with her child, place of living and family income.

For example; Academic performance of the child might negatively affect his behaviour at school toward peers and teachers, he might be rejected and therefore this will affect his self-esteem. In turn, this might cause the child to behave with one or more of the major symptoms of ADHD (Impulsivity, Hyperactivity and Inattention). When these symptoms are untreated and unsolved the child might develop conduct behaviour in addition to ADHD symptoms which will deficit his social skills and increase rejection from others.

The following diagram represents the researcher behavioural theory that explains the concepts and relationship that are used in the research regarding the presence of ADHD symptoms and comorbidity with conduct behaviour.

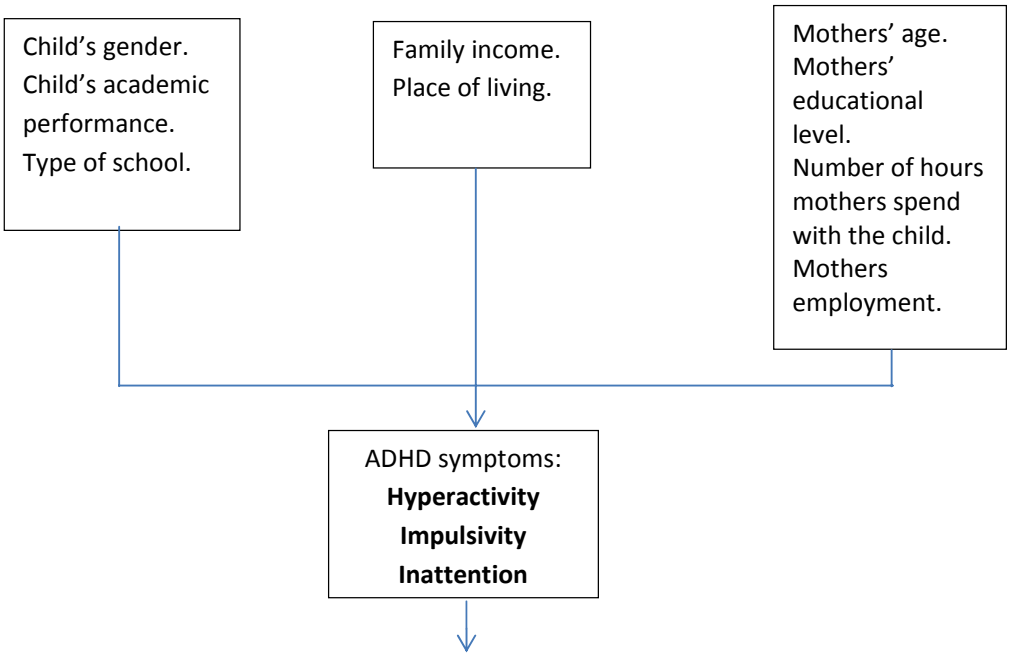

Figure 2.4: conceptual framework model

According to the study done by Al-sharabati, 2008 in Omani schools which used the Conners' Teacher rating scale, results revealed a7.8% prevalence of ADHD in the sample and indicated a strong association with poor school performance, behaviour disorders and conduct disorders.

Another study conducted by Kaylyn N. Kitts in the University of North Carolina at Charlotte entitled "Family Structure, Household Income, and Mental/Behavioral Wellness in Children with ADHD" in 2002. The study aimed to compare the behaviour and the mental functioning of ADHD diagnosed children to those without ADHD diagnosing. It also examined the impact of the environmental factors on ADHD. Results revealed that those with ADHD had greater mental impairment. Scale of good behaviour showed behaviour impairment among ADHD children. Regarding family income and ADHD, the study revealed that children with low-income are more frequently diagnosed with ADHD than those with higher income. Regarding family structure, the study indicated that more ADHD children are from single mother families while non ADHD children are more from dual parent families. The study suggests that ADHD children have worse mental health functioning, worse behaviour than the non ADHD children. Also, the demographic and the environmental factors plays a role.

2.13Previous studies:

1.13.1. Previous Studies Regarding ADHD

A study conducted by (Al-Sharbati et al.,2011) entitled "Characteristics of ADHD Among Omani Schoolchildren Using DSM-IV: Descriptive Study". In this study the aim was to screen for ADHD presence, also to look for the psychosocial and educational history of ADHD diagnosis among children. The screening was done for schoolchildren who attended psychiatric consultations for the presence of ADHD using the Diagnostic and Statistical Manual for Mental disorders criteria. The results showed that 221 subjects were found to be suffering from ADHD out of 1406, and year incidence was 0.16 . The majority of those diagnosed with ADHD were males. A history of brain injury was common among findings. Pharmacotherapy was used to manage ADHD.

A study conducted by (Sushevska et al., 2011) entitled "Analysis of Subtypes and Other Associated Conditions of Attention Deficit and Hyperactivity Disorder (ADHD) in School Population from 6 to 12 Years of Age". The study included 400 participants aged 6-12

years in primary schools Stip town. The students were chosen from classes as every fourth student of each class out of a total number of 2000 student. The tools used in the research were the Vanderbilt-teacher rating scale, and that of parent rating scale. According to parents' scaling rate 11.5% had ADHD, while according to teachers scaling rate 15% had ADHD. The most common symptoms according to the teachers' scale were subtype of attention deficit and the opposite defiant disorder. The hyperactivity/impulsivity subtype was most common according to the parent rating scale as well as the oppositional defiant disorder.

A study conducted by(Ambuabunos et al.,2011) entitled " Community survey of attention deficit/ hyperactivity disorder among primary school pupils in Benin City, Nigeria" . They conducted a cross-sectional study in primary school students aged 6-12 years in Egor Local Government Area of Edo State. The sample consisted of 1473 pupils and were screened for ADHD using the disruptive behavior disorder rating scale , and then compared with randomly selected controls then, they also compared the academic reports of the both groups. Results indicated a 7.6% prevalence of ADHD, 9.4% was in boys and 5.5% in girls. Inattentive type of ADHD was the most common (47.3%), the combined type was 31.1%, the hyperactivity/impulsivity type was 21.4%. No statistical differences were found among different age cohorts in the prevalence of ADHD .

A study conducted by (Thabet et al.,2011) entitled "Post-traumatic stress disorder and attention deficit hyperactivity disorder in Palestinian children affected by the war on Gaza". The aim of this study was to examine the co morbidity type of children who were exposed to war in Gaza strip and at a high risk to develop post-traumatic stress disorder. The sample included 410 Palestinian children chosen randomly from the population. Their age was 8-18 years, 224 boys (54.6%) and 186 girls. This research was conducted in May and June 2009. Tools used in the research were War on Gaza traumatic events checklist, UCLA PTSD Index for DSM-IV for children, and a structured clinical interview to diagnose children for ADHD according to DSM-IV. Results showed that 39.3% of the children reported partial PTSD, while 9.8% reported full PTSD, 31.3% reported significant attention-deficit symptoms according to parents interview, 36.3% had impulsivity-hyperactivity symptoms and 29.0% had the combined type. Those who had PTSD combined with attention-deficit symptoms were 21 children (5.1%), 18 (4.4%) had PTSD combined with impulsivity-hyperactivity and 18 (4.4%) had PTSD combined with inattentive-impulsive symptoms. Researchers concluded that there is a high risk for

children exposed repeatedly to traumatic events to display the symptoms of both PTSD and ADHD. The child might have PTSD symptoms, and due to their anxious state may show hyperactivity, attention and impulsivity problems and therefore this might be diagnosed as ADHD by the clinician. As a result, there must be psychiatric training for detecting traumatic symptoms and neurodevelopment disorders in different conflict conditions.

A study conducted by (Ramtekkar et al,2010) entitled "Sex and age differences in Attention-Deficit/Hyperactivity Disorder symptoms and Diagnosis: Implications for DSM V and ICD-11" . Their main objective was to look for gender and age differences in ADHD symptoms in a sample aged from 7 to 29 years. The sample included 9380 individual. The target community was Missouri, and the study was done by telephone interviews using lifetime DSM-IV ADHD symptoms and SWAN questionnaire to assess strength and weakness of current ADHD symptoms. Results showed that the overall prevalence of ADHD was 9.2% and the male:female ratio was2.28:1.

A study conducted by (Thabet et al.,2010) entitled "Attention Deficit Hyperactivity Symptoms among Palestine Children". The prevalence and distribution of ADHD symptoms were the aim of this research. The sample included 349children from age 6 to 15years and were randomly selected from 15 UNRWA Schools in Gaza and 8 schools from Bethlehem and East Jerusalem. From each school 16 children were randomly selected. The tools used in the research were both ADHD DSM-IV checklist and a Questionnaire for the Strength and Difficulties to measure the conduct and emotional problems. Parents and teachers were consistent in their rating for ADHD children. The prevalence was 4.3% using the DSM-IV checklist.

A study conducted by (Sheppard et al.,2010) entitled " ADHD Prevalence and association with Hoarding Behaviours in Childhood-Onset OCD" in the United states and Costa Rica . In their study the prevalence of ADHD among childhood OCD-affected individuals and the relationship with clinically significant hoarding behaviours and ADHD were the aim. The sample included 155 OCD-affected individuals, age were from 4-82. More than one scale was used to diagnose OCD depending on the age of the individual, one of Tools was Yale-brown Obsessive Compulsive Scale , Conner's Adult ADHD scale for adults and the SNAP-IV parent scale for individuals under 18, and a semi-structured interview was used to assess time course and impact of symptoms, tics presence, the treatment , medical and development history. The YBOCS questions were used to assess hoarding behaviours.

Results indicated that 11.8% met the criteria for definite ADHD, 8.6% for probable or definite ADHD, total were 20.4% whereas 41.9% of the later were with ADHD and have hoarding behaviours. A strong association was found between ADHD and hording behaviours.

A study conducted by (Bussing et al., 2010) entitled " Adolescent outcomes of childhood attention-deficit/hyperactivity disorder in a diverse community sample" and was published in 2010 in North Florida. The aim was to describe the outcome of childhood ADHD. Choosing a random sample of 12,009 students from public school records. Results were that 1,615 students aged from 5-11years were screened for ADHD. Prevalence of ADHD was 29.5% . They were either already diagnosed or being suspected to have ADHD according to parents or school or by using the SNAP-IV tool for behaviour problems by parents or school. Then the study was followed by a case-control study after 8 years to describe ADHD outcome. Youth with childhood ADHD who didn't experience remission were 44%. They were more likely to show oppositional defiant disorder, anxiety/depression, significant functional impairment, reduced quality of life and some have been involved with juvenile justice and increased risk of graduation failure. Therefore, this proves the importance of ADHD early detection.

A study conducted by (Schubert et al.,2010) entitled " The Changing Prevalence of Attention-Deficit/Hyperactivity Disorder and Methylphenidate Prescriptions." . They aimed to investigate the changes in attention-deficit/hyperactivity disorder prevalence and the prescription of Methylphenidate in the period 2000 to 2007. Data was on the basis of the German statutory health insurance carrier. The study was a cross sectional study and a random sample analysis was performed using the insures of the AOK health insurance company in the German state of Hesse. They observe 50000 to 63000 children and adolescent ,per calendar year, concerning documentation of ADHD diagnosis depending on the ICD-10 and the prescribing of methylphenidate. Results showed that 2.21% was the prevalence of ADHD in the group age (0-18years) in the year 2007. This prevalence was 45% greater than that of the year 2000. The increase was greater among girls in the age group 6-18 than among boys in the same mentioned group. They also found that the prevalence was shifted toward older age groups.

A study conducted by (Karam et al.,2009) entitled " ADHD in the Arab World: A Review of Epidemiologic Studies". They reviewed all epidemiological research papers on ADHD

that were conducted in the Arab countries from 1966 , although they were rare. There were a variability of the methodology and the instruments used in these studies. Samples were from primary care clinical settings, general community and those of traumatized children. The studies considered the prevalence, risk factors, burden of ADHD, gender and co morbidity. Results of ADHD rates were consistent to those in other cultures. One of the recommendations was the importance for further research on prevalence of ADHD in the Arab world.

A study conducted by (Eapen et al.,2009) entitled " Epidemiological Study of Attention Deficit Hyperactivity Disorder Among School Children in the United Arab Emirates" in 2009 to evaluate the prevalence of ADHD in Dubai, Al Ain and Ras Al-Kaima. A representative random sample of children at school from the age of 5 to 16 was evaluated using the Conner Parent and Teacher Scale. Prevalence according to teachers' reports were close to that of parents' reports; 3.4% and 4.1% respectively. They suggested the need of early screening program for ADHD .

A study conducted by (Coutinho et al. ,2009) entitled " Agreement rates between parents' and teachers' reports on ADHD symptomatology: findings from Brazilian clinical sample". They respectively took the database of a centre in Rio de Janeiro specialized in ADHD. They aimed in this research to find out the agreement rate between parents' and teachers' reports in a clinical sample of Brazilian children and adolescents with ADHD. The sample consisted of 44 children and adolescents, aged between 6 to 16 years old, boys were 40 and girls were 4, all had a clinical diagnosis with ADHD. The tool used was SNAP-IV questionnaire given for teachers and parents to calculate the agreement rate. Results showed that agreement was only among nearly half of the sample, and parents reported more ADHD symptomatology than teachers. They concluded that ADHD symptomatology is less clear-cut among school teachers, and that educational lessons concerning ADHD should be held at schools.

A study conducted by (Al-Sharbati et al., 2008) titled "Hyperactivity in a Sample of Omani Schoolboys" . In his study he aimed to find out the prevelance of hyperactivity in schoolboys in an Arabic Islamic country, Oman. The sample consisted of 1,502 Omani school boys. Eight schools were chosen randomly representing urban population of Oman. The tool used in this study was the Conners' Teacher Rating Scale and some other ecologically valid assessment measures, and the study was a cross-cultural research.

Results showed that prevalence of hyperactivity among the sample was 7.8% . It was also noticed that findings was strongly associated with indications of conduct disorder, poor school performance and behavioral disordes. Other factors such as child's rank , number of siblings, and parental education were not significant.

Rizqallah,R conducted a research in 2008 entitled " Quality of life and its relationship to attention deficit hyperactivity disorder among children in Bethlehem district from their mothers' perspective". The main aim of this study was to know the level of quality of life and its relationship to attention deficit hyperactivity disorder among children between (6-9) years old in Bethlehem district from their mothers' perspective. Tools that were used in this study were the Child Health Questionnaire (CHQ-PF50) and the Attention deficit Hyperactivity scale of Amad ,1999. Results revealed that 66.6% of the sample had moderate quality of life , 17% had low level of quality of life and 16.4% had high level of quality of life. The level of ADHD prevalence among the study sample was moderate with a 67%, those with high level of ADHD symptoms were 17.8%, and 15.2% were those of low level of ADHD symptoms.

A study conducted by (Serra-Pinheiro et al.,2008) entitled " Inattention, Hyperactivity, and Oppositional- Defiant Symptoms in Brazilian Adolescents : Gender Prevalence and Agreement Between Teachers and Parents in a Non -English Speaking Population" . The main aim of this cross-cultural study was to assess symptoms of hyperactivity, inattention, and oppositional defiant in a nonclinical sample of fifth grades in public schools in Rio de Janeiro, Brazil, as well as to look for the association between teachers and parents scoring profiles, symptom levels and the gender. The tool used to asses symptoms by parents and teachers was the SNAP-IV Questionnaire (Swanson, Nolan, and Pelhman). Prevalence and score means for ADHD and Oppositional-defiant disorder(ODD) were assessed based on DSM-IV criteria. Results showed that rates of having high scores of symptoms of ADHD , ODD were 7% and 33%. There was no gender differences when scored by parents. The researcher concluded that hyperactivity, inattention and oppositional defiant symptoms were prevalent in a high rate in this nonclinical sample. Parents and teachers had different rates and this might be due to cultural aspects. Few differences in symptoms level between girls and boys were observed.

A study conducted by (Froehlick et al., 2007) entitled "Prevalence, Recognition, and Treatment of Attention-Deficit/Hyperactivity Disorder in a National Sample of US

Children" . The main objective of their article was to determine the national prevalence of ADHD in US. Also they aimed to find out if prevalence, recognition and treatment differ by socioeconomic group. The study was a cross sectional survey and the setting was a representative sample from US in the year 2001 to 2004. The sample consisted of children aged 8-15 year old in the National Health and Nutrition Examination Survey, and number of participants were 3082. A diagnostic Interview Schedule was made for caregivers to assess ADHD for children depending on DSM-IV criteria. Results showed that 8.7% met the DSM IV criteria of ADHD .

A study conducted by (Polanczyk et al., 2007) entittled "The Worldwide Prevalence of ADHD: A Systematic Review and Metaregression Analysis". The aim was to determine the world-wide-pooled prevalence of ADHD. The authors of the different articles were from America, South America, Europe, Africa, Asia, Oceania and the Middle East. The review included MEDLINE and PsycINFO databases from January 1978 to December 2005 regarding ADHD prevalence for individual of 18 years or younger, from general population or schools, using DSM or ICD criteria. They reviewed 9105 records and 303 full-text articles. Results showed that 5.29% was the ADHD worldwide –pooled prevalence.

A study conducted by(Shahin et al., 2007) entitled " Prevalence of Attention Deficit Hyperactivity Disorder in a Group of Elementary School Children" in Iran in the year 2007. They aimed to find out the prevalence of ADHD taking into consideration the three types; hyperactivity type, inattentive type and the combined type. The sample consisted of 1311 pupils in elementary school children in Shiraz. The boys were 644, and the girls were 667. Pupils' aged from 7 to 12 years. Cluster random sampling was used to get the sample. SWAN questionnaire was used as the instrument in the research. Prevalence of symptoms of one of the subtypes of ADHD was found to be 5% to 8.5%. It was also discovered that by age the hyperactivity disorder decreases while the attention deficit increases. There was no statistical differences in prevalence by gender except for the combined type it was higher in boys than in girls. Mean scores of the three subtypes were significantly different in different socio-economic groups. It was noticed that lower socio-economic status had higher mean scores in all subtypes of attention deficit hyperactive disorder.

A study conducted by (Bener et al., 2006) entitled " The Prevalence of ADHD among Primary School Children in an Arabian Society". The object of the study was to look for

the prevalence of ADHD in primary school children in Qatar state. The study was a cross sectional descriptive study. The sample included 1541children ages 6-12 where 51.7% were males and 48.3% were females. Conners rating scale was used . The result indicated a prevalence of 14.1% among males and 4.4% among females, a total ADHD prevalence was 9.4%. It was revealed that ADHD is a common problem children in Qatar.

A study conducted by (Adewuya et al.,2006) entitled "Attention deficit hyperactivity disorder among Nigerian primary school children Prevalence and co-morbid conditions" in 2006. They aimed to estimate the prevalence of ADHD in Nigeria, as well as the co-morbid conditions in primary school children in the age group 7-12 years. The sample consisted of 1112 students. They were assessed by both their teachers and then by their parents using the criteria in DSM-IV for ADHD. Results showed that the prevalence of ADHD was 8.7%. the inattentive subtype was 4.9%, the hyperactive/impulsive subtype was 1.2% and the combined subtype was 2.6%. The ratio of male to female was 3.2:1 in the hyperactive/impulsive subtype while 2:1 in the other two subtypes. Oppositional defiant disorder and conduct disorder were found out to be associated with hyperactive/impulsive subtype in the percentage 25.8% and 9.35 respectively. Anxiety/depression was found to be associated with the inattentive subtype in the percentage 9.3%. the researchers recommended for efforts to find a strategy for early identification and for referral of children with ADHD symptoms.

A study conducted by(Cuffe et al., 2005) entitled "Prevalence and Correlates of ADHD Symptoms in the National Health Interview Survey". The aim of this study was to find the prevalence and correlates of ADHD symptoms in the National Health Interview Survey (NHIS). The sample included 10,367 individuals aged 4 to 17 years. The parents reported lifetime diagnosis of ADHD. Results showed that the prevalence of clinically significant SDQ ADHD symptoms is 4.19% for males and 1.77% for females.

A study conducted by(Kashala et al.,2005) entitled " Attention deficit and hyperactivity disorder among school children in Kinshasa, Democratic Republic of Congo" . They aimed to investigate the prevalence of ADHD symptoms among school children in Kinshasa which is an African setting. The rating scale was used is the DBD which is the Disruptive Behavior Disorder scale according to the DSM-IV for investigating ADHD symptoms. Also, interviews were done with the parents using a questionnaire that was designed for

this study taking into consideration the socio-demographic characteristics. Then children were proposed to a clinical examination. Results showed that the prevalence was 6% mostly shown with families of health problems, good status of nutrition , low school performance and at younger age of primary school. Socio-demographic factors were not statistically significant.

2.13.2 Previous studies regarding CD and ADHD:

A study conducted by (Larson,et al.2011) entitled "Patterns of Comorbidity, Functioning, and Service Use for US Children With ADHD, 2007" . Their main aim was to figure out the patterns of comorbidity within ADHD children in the United States as well as their functioning and service used for those children. The sample included 59,941 children ages 6 to 17, they were recruited from the 2007 National Survey of Children's Health. A 30 minutes telephone interview was done with caregiver. Children that were diagnosed with ADHD were 5028 (8.2%). Results of comorbid conditions showed the following: 46% of ADHD children had learning disability(LD), and 5% had LD without ADHD, 27% of ADHD children had conduct disorder(CD), and 2% had CD without ADHD, 18% VS 2% for anxiety, 14% vs 1% for depression, 12% vs 3% for speech problems. Therefore the assumption of possible comorbidity with ADHD was proved , 33% had one comorbid disorder with ADHD,16% had 2, and 18% had 3 or more. Poor children were found to have higher possibility of 3 or more comorbidities than affluent children(30% vs 8%). Also ADHD children had higher odds of activity restrictions, school problems, grade repetition, and poor parent-child communication. They also had higher parent aggravation whereas lower scores of social competence. It was also found that the functioning of ADHD children declined with increasing the number of comorbidities, as well as the use of health and educational services and the need for care coordination.

A study conducted by(Mordre et al.,2011) entitled "The impact of ADHD and conduct disorder in childhood on adult delinquency: A 30 years follow-up study using official crime records" in 2011. In their research they aimed to figure out the impact of childhood mental disorders on adulthood criminal activity. They focused on attention deficit and/or hyperactivity disorder alone and comorbid with conduct disorder or emotional disorder, mental retardation, pervasive developmental disorder, gender and chronic family difficulties. The study was longitudinal, n= 541 and were Norwegian child psychiatry in-patients. They were followed up from 19-41 year. From the hospitalization records,

patients were re diagnosed according to ICD-10. Data were analysed using the univariate and multivariate Cox regression analyses. Results indicated that 24% of the sample had criminal activity. Children with ADHD co morbid with conduct disorder or with conduct disorder only increased the risk of being convicted in criminal behaviour. Pervasive developmental disorder and mental retardation were found to reduce the risk of criminal behaviour. Chronic family difficulties and male gender predicted future criminality. The study proves the assumption that there are no association between ADHD and later delinquency, while strengthen the possibility of having an association between conduct disorder alone or in co morbidity with hyperactivity in future delinquency and less association when combined with emotional disorders.

A study conducted by (Faravelli et al., 2009) entitled " Prevalence and Correlates of Mental Disorders in a School Survey Sample" . This study was done in Italy. They aimed to evaluate the prevalence of mental disorders in a school-sample of 1028, aged 6 to 11. The sample was recruited from 12 primary schools in Florence in Italy. The DSM IV diagnostic criteria were used to make the diagnosing. Specially trained teachers were used as lay-interviewers. Results indicated that 10.5% of participants had a psychiatric diagnosis, where males had the higher prevalence rate (66.7% vs. 33.3%). The behavioural/impulse control got the higher prevalence rate of mental disorders (7.2%), anxiety(6.4%), ADHD(5.6%), separation anxiety and overanxious disorders (1%). Association factors with mental disorders were male gender, organic disease, divorced mother, not present or dead, low socio-economic status .

A study conducted by (Harty et al., 2009) entitled "Adolescents with Childhood ADHD and Comorbid Disruptive Behaviour Disorders: Aggression, Anger, and Hostility". The study was a longitudinal study . The sample consisted of 85 participants, 75 were males, all were clinically referred and all were diagnosed with ADHD. They were recruited from a larger study(n=169) in the early to the mid 1990's. Their age was from 7-11 year old. They were tested for Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) . Between the participants, 52% met the criteria for ODD and 26% met the criteria for CD at that time.

After 10 years, an aged-matched group (n=83) were considered to assess outcomes such as physical and verbal aggression, hostility and anger and these were the aims. Results showed that participants with ADHD and CD co morbid in childhood have a high level of

physical aggression in comparison to the control group and those with ADHD-only. In addition, those who were diagnosed with ADHD and ODD co morbid were found to have a high level of verbal aggression when compared to controls. The two co morbid groups had a greater amount of anger, and not hostility if compared to controls. The researchers went out with a conclusion that a child diagnosed with ADHD and a co morbid disruptive behaviour disorder will report a high level of aggression and anger in the form of increased emotionality, and not hostility. Therefore emotional dysregulation may be an additional important component of ADHD in adolescence besides inattention and hyperactivity/impulsivity.

A study conducted by (Langley et al., 2007) entitled "Effects of low birth weight, maternal smoking in pregnancy and social class on the phenotypic manifestation of Attention Deficit Hyperactivity Disorder and associated antisocial behaviour:investigation in a clinical sample" . The aim of their research was to identify the association between ADHD, CD and three environmental risk factors: low birth weight, maternal smoking in pregnancy and social class. The study was conducted on a sample of 356 British Caucasian children diagnosed with ADHD, and aged from 6-16 years old. Parents were interviewed using a semi-structured interview (CAPA) depending on DSM-IV criteria.Teacher Telephone Interview was done to assure ADHD symptoms or impairement in school setting. Parents also completed a questionnaire regarding pregnancy birth complications, birth weight and smoking behaviour. Social class was assigned by the UK Standard Occupational Classification. Results showed that 13% of participant had comorbid CD, and 47% had comorbid ODD. There were no association between birth weight and the presence of ADHD, CD or ODD in this sample. Average of pregnancy smoking mother in UK is 25-39% while between participant was a greater number of 46%, which proves the assumption of having an association between ADHD, ADD or CD and a pregnancy smoking mother. Low social class was 50% of participant which is a greater proportion than in the UK general population which also proves the presence of the association.

2.13.3 Previous studies regarding CD:

A study conducted by (Colman et al., 2009) entitled "Outcomes of conduct problems in adolescence: 40 year follow-up of national cohort". They aimed to find out the long term outcomes regarding adolescents diagnosed with conduct disorder by the teacher. The study was a longitudinal study from 13-53year, and the sample comprised the Medical Research

Council National Survey of Health and Development in Britain. Participants were 3652 members. Results showed that 348(9.5%) of the participants (adolescents) were diagnosed with conduct disorder, 1051 of participants(28.8%) was found to have mild externalising behaviour(mild conduct symptoms), and 2253 of participants (62%) with no externalising behaviour. Outcomes were measured in adulthood and were found to be negative for those with severe and mild conduct symptoms in adolescence. For example: 65.2% of severe conduct symptoms in adolescence were likely to leave school without any qualifications, while for those with mild conduct symptoms the percentage was 52.2% and for those with no conduct symptoms it was 30.8%. Mental health, family life and relationships, and education and economic problems were measured as a composite measure of global adversity. The result showed that those with severe conduct symptoms scored 40.1% in top quarter, and those with mild conduct symptoms scored 28.3%, and those with no conduct symptoms scored 17.0%. This proved the assumption that adolescents with severe conduct symptoms will experience multiple social and health impairments which will in turn affect them adversely, their families, and the society through their adulthood life.

A study conducted by (Kramer et al.2009) entitled "Childhood Conduct Problems and Other Early Risk Factors in Rural Adult Stimulant Users". The aim was to understand the risk factors in childhood that have association with the substance use and legal problems in adulthood which are important for treatment and prevention strategies.

They examined the relationship between substance use, conduct problems before the age of 15 and the history of the family on the adult outcomes in the use of stimulants in rural areas. The participants were 544 who were Adult cocaine and methamphetamine users from Arkansas and Kentucky. They were interviewed and the data were analysed using the multiple logistic regression and the log-linear regression and the bivariate analyses. The dependent variables were if there are any substance abuse/dependence, stimulant abuse/dependence, total number of days incarcerated and total number of arrests since age 18. Results showed that one-third of participant had three or more conduct disorder symptoms before age 15, half of participants had substance initiation, excluding alcohol, before age15; and 60% had family history of substance problems. It was found that the three variables were associated with substance abuse or dependence, but only the last two were associated with stimulant abuse or dependency.

A study conducted by (Gelhorn et al., 2007) entitled " DSM-IV Conduct disorder criteria as predictors of antisocial personality disorder". Their main aim of the study was to figure out the association between conduct disorder and a predicted antisocial personality disorder. The sample consisted of 41,571 individual recruited from the civilian non-institutionalized population in the United States aged 18 years and over. The diagnosing was done based on reported criteria from the NIAAA Alcohol Use Disorder for Conduct Disorder and Associated Disabilities Interview Schedule-DSMIV Version (AUDADIS-IV) for Antisocial personality disorder. Results showed that in males 6.7% of participant had a CD diagnosing and 79% of them had antisocial personality disorder. In females 2.6% had CD diagnosing and 75% of them had antisocial personality disorder diagnosing.

A study conducted by (Nock et al.,2006) entitled "Prevalence, Subtypes, and Correlates of DSM-IV Conduct Disorder in the National Comorbidity Survey Replication" . They aimed to find out the prevalence of conduct disorder , its subtypes and other comorbid disorder through a retrospective assessment using a fully structured diagnostic interview among 3199 participants from the U.S from the National Comorbidity Survey Replication. Results showed 9.5% was the prevalence of CD and median age of onset is 11.6 years(12% among male participant and 7.1 among females). They found five CD subtypes :(1) rule violations.(2) deceit/theft.(3)aggression.(4)severe covert behaviour. (5) pervasive CD symptoms. A high relationship was noticed between the severity of CD and other subsequent disorders which often occurred after anxiety and impulse control disorders.

A study conducted by (Sarkhel et al., 2006) entitled "Prevalence of conduct disorder in schoolchildren of Kanke". The study was conducted in Kanke. The sample was recruited from four schools, chosen by simple random sampling, aged 10-15. Number of participants were 240 students, 132 boys and 108 girls. Participants were interviewed and the CD screening section of Schedule for affective Disorders and Schizophrenia for School-Age Children and Lifetime Version was applied. Participants who cross the cut off score were applied to assessment for CD and ADHD. Then , the student and their parents were interviewed separately. An overall impression was done depending on the DSM IV diagnosis of CD, and comorbid ADHD. Results showed that prevalence of conduct disorder was 4.58%. the disorder was more common in males than girls by the ratio 4.5:1. The onset of the disorder was 73% in childhood and 27% in adolescents. Participants with comorbid CD and ADHD were 36%.

2. 13.4 Conclusion:

According to the researcher knowledge, the studies that wereconducted in Palestine including Gaza strip regarding prevalence of ADHD, were very few. For comorbidity between ADHD and any other disorders, the researcher found only one study conducted in Gaza strip regarding ADHD and comorbid PTSD . In Bethlehem governorate a study was conducted by Rezqalla regarding quality of life among ADHD children. It was obvious that the studies in the Arab world in general were also few compared to those conducted in the west. All studies in the Arab world recommended further researches to be done on ADHD prevalence and more in depth studies regarding treatment, interventions, comorbidity and risk factors. In addition, several studies indicated the importance of early detection of ADHD due to the worse outcome of this disorder if completed to be in adulthood without treatment.

These studies showed different prevalence rates that ranged from 2.21 in Germany to 15% in Stip town, and up to 29.5% and 33% in North Florida and Brazil respectively, in the years 2005 to 2011. Most of them were cross sectional study from the community, public schools or from clinics. There were researchers who studied associated factors such as gender, socio-economic and socio-demographic status, health conditions, nutrition, outcome and co-morbidities to ADHD.

Various methods and instruments were used in the researches which may have affected the variance in the results. As for the instruments used, some had used the Conners scale, the DSM-IV check list, the SNAP questionnaire, or the clinical investigation. Some were dependent on the teachers view, parents view or both. Some results showed an agreement between teachers and parents while others did not.

The sample age taken in most of the studies mostly ranged from 4 to 18, only one took range up to 29 and another to 82. Some find gender differences regarding prevalence and noticed that males cases exceed females with a ratio of 2.28: 1. On the other hand Iranian researchers find that hyperactivity decreases by age where inattention increases by age.

Most studies done regarding prevalence of conduct disorder and prevalence of ADHD comorbid with conduct disorder were western studies.

The previous studies mentioned regarding prevalence of conduct disorder and ADHD comorbid with conduct disorders revealed a wide range of the comorbidity prevalence;

from 13% in a British study up to 36% in a study done in Kanke. The studies varied in their aims, some were longitudinal and aimed to find out the adulthood outcome of childhood CD or ADHD comorbid with CD, some had proved a future association with antisocial personality disorder(79%), other proved association with substance abuse, adverse effect on the family, society, school-leaving without achievement(65%) and high risk of future delinquency.

There is an important need for further studies to be done in the Arab world especially in Palestine. Many western researches studied conduct disorder, oppositional defiant disorder, poor academic performance, depression, anxiety and obsessive compulsive disorder as a probability to be associated with adult ADHD. In the Arab world the studies among ADHD are very restricted and on comorbidities are much restricted.

This study is characterised by studying the prevalence of ADHD among a restricted age period (fifth grade), and by studying the comorbidity with conduct behaviour in Bethlehem schools from the mothers' perspective among fifth grade children and will bring out some recommendations that will assist in developing the quality of programs done regarding the educational knowledge of the disorder and its comorbid behaviour among the family, schools and all the professionals who are interested to work with people diagnosed with the disorder and their families. On the other hand, recommendations will be directed to school headmasters to help in assisting these children and improving their quality of life at school as well as their academic intake. In addition it will reveal the importance of detecting comorbid disorders that might be associated with ADHD which will also have a great impact on the person, the family and society if left undiagnosed and untreated.

Chapter Three

Methodology

3.1 Study Design:

A descriptive cross sectional method was used in order to collect the data needed in this study. This study design is best used to determine the prevalence of a disorder in a specific community or group, or to get any information about the situation that exists. (Abramson, 2008).

There are two types of cross sectional studies, the first one is the Censuses type which is used when the population to be studied is small, and therefore every unit in the population will be sampled. This type is the most accurate and effective to conduct a survey. The other type is the sample survey and is considered to be easier than censuses. The population is sampled in this type, and therefore the number of unit to be measured is relatively small; and more time and effort will be devoted to each unit. This allows a considerable amount of data to be collected from each unit. Both types are considered representative if sampling is performed properly (Putt Shaw Tyler and James, 1988).

Cross sectional study has various advantages. It takes only "one-time" examination, and it is quick. It is considered to be less expensive than other study designs. Also, it gives immediate results and is relatively inexpensive (Steinberg Vandell and Bornshtein, 2011). This type of study has disadvantages such as being limited in studying causal effect, as measurements are done only at one point. Also a problem of reverse causality bias can occur (Monsen and Horn, 2008).

3.2 Study Population:

The population included all the mothers or caregivers of students in grade five, in all schools in Bethlehem governorate. The students population were chosen first and then directly their mothers or care givers. Both student genders were considered. Their age was 11 years old.The total number of schools was 111 schools. the number of governmental schools was 76, the total number of private schools was33and the total number of UNRWA schools was 6. The total number of fifth grade students in all schools was 4623 students, according to Ministry of Education, Bethlehem branch 2012. Number of fifth grade students in governmental schools was 3242students, in private school was 908 students and in UNRWA schools was 473 students. Total number of Female students was 2264student and males were 2359 student.The following table describes the study population.

Table 3.1: distribution of study population according to gender and school-type(Ministry of Education Bethlehem Branch,2012).

School type	governmental		private		UNRWA	
gender	male	female	male	female	male	female
Number of students	1659	1583	492	416	208	265
Total number	3242		908		473	
Total number of all students	4623					

3.3 Target Sample:

The target sample was assigned in two stages. First, all the governmental , UNRWA, private schools in the city, village or camps were identified from the Ministry of Education. Then, they were chosen randomly in a ratio of 6:3:1, governmental, private and UNRWA respectively(which is very close to the total distribution of fifth grade students in Bethlehem schools). If the school had more than one class of fifth grade then, one class was selected randomly.

Target sample was 492 student from fifth grade in Bethlehem schools. The distribution of target sample is shown in the following table.

Table 3.2: Distribution of sample according to gender and type of school:

School-type	Governmental		Private		UNRWA	
gender	male	female	male	female	male	female
Grade 5	149	149	78	61	29	28
total	298		139		57	
Total number of sample	494					

3.4 Inclusion Criteria:

Inclusion criteria: All students of fifth grade in governmental, private and UNRWA schools of Bethlehem governorate. Both genders are included. Those who have no mother or father, or do not live with their mother or father, their care giver were asked to fill the questionnaire. Student who had a mother or father but who can't read or write the researcher made an appointment with their parents at school and filled the questionnaire with them.

3.5 Ethical Considerations:

- A Consent form was signed with each school headmaster, where a short introduction about the study and its' objectives was sent to them.

- A Consent form was signed with each family, where a short introduction about the study and its' objectives was sent to them.

- On the cover page of the questionnaires, a written introduction and objectives about the study was prepared, as well as insuring confidentiality, this was sent to all parents in the target sample.

- An approval letter was obtained from the University to facilitate the work of the researcher, and was sent to ministry of education.

- An approval letter was obtained from the Ministry of Education to facilitate the work of the researcher in schools.

3.6 Study Instrument:

Two instruments were used in this research :
1-ADHD questionnaire: Attention Deficit Hyperactivity Disorder scale (Ahmad, 1999) .
2-Disruptive behaviour questionnaire: Eyberg Child Behavior Inventory(Eyberg,1992).

3.6.1. The first instrument: ADHD questionnaire:

The questionnaire is made up of 118 statements each measures the severity of ADHD symptoms in home and school environment. The statements are distributed among three major dimensions: Hyperactivity, inattention and impulsivity.

In the questionnaire school environment statements were 64, and the home environment statements were 54. The school statements were the same as home statements, but the first had ten statements more, related to school environment.

The researcher used in this study only the statements that are related to the home environment.

The statements distribution in the home environment had four dimensions:

1-Inattention: 28 statements (statement 1-28).

2-Hyperactivity: 16 statements (statement 29-44).

3-Impulsivity: 10 statements (45-54).

4-Total ADHD: total degree of all statements.

Scoring:

The ADHD instrument is made up of negative statements only, and each has four levels:

Always: happens more several times a day, and gets three marks.

Sometime: happens once or twice in the day, and gets two marks.

Seldom: happens once or more in the month, and gets one mark.

Never: does not happen at all, and gets zero mark.

The total number of marks that the child gets will be calculated. The total number of the scale is from (0-162).

3.6.1.1. Validity of the instrument:

To make sure of the validity of the ADHD questionnaire used, the researcher had presented the questionnaire to eight judges who had the experience and specialty. The aim was to judge the questionnaire from different sides; comprehensivity, clarity, language and validity for what it meant to measures. They all agreed on its context and comprehensively, but advised to make some modification to some statements. The researcher had modified them. Then the questionnaire was given to ten mothers from the study population, to make sure they will understand the statements. The statements remained 54, and nothing was cancelled.

On the other hand, the validity was verified by calculating the Pearson Correlation Coefficient for the questionnaire items and the total score of each instrument, and it was

found that it's statistically significant in all the items of the questionnaire .The following table shows that:

Table (3.3): Results of Pearson Correlation Coefficient of the matrix correlation of the paragraph of the prevalence of ADHD and/or ADD among fifth grade students in Bethlehem schools from the perspective of the parents

Number	R-value	Statistical function	Number	R-value	Statistical function	Number	R-value	Statistical function
1	0.616	0.000	19	0.588	0.000	37	0.583	0.001
2	0.542	0.000	20	0.642	0.000	38	0.527	0.001
3	0.604	0.000	21	0.610	0.000	39	0.568	0.001
4	0.621	0.000	22	0.627	0.000	40	0.470	0.001
5	0.599	0.000	23	0.621	0.000	41	0.621	0.001
6	0.635	0.000	24	0.669	0.000	42	0.639	0.001
7	0.568	0.000	25	0.594	0.000	43	0.604	0.001
8	0.473	0.000	26	0.526	0.000	44	0.608	0.001`
9	0.570	0.000	27	0.580	0.000	45	0.526	0.001
10	0.564	0.000	28	0.595	0.000	46	0.550	0.001
11	0.468	0.000	29	0.567	0.000	47	0.610	0.001
12	0.584	0.000	30	0.606	0.000	48	0.601	0.001
13	0.567	0.000	31	0.641	0.000	49	0.712	0.001
14	0.541	0.000	32	0.639	0.000	50	0.564	0.001
15	0.362	0.000	33	0.505	0.000	51	0.562	0.001
16	0.688	0.000	34	0.586	0.000	52	0.571	0.001
17	0.659	0.000	35	0.617	0.000	53	0.659	0.001
18	0.635	0.000	36	0.552	0.000	54	0.600	0.001

3.6.1.2. Reliability of the Instrument:

The researcher made sure that the instrument is reliable by calculating the stability of the overall degree of reliability coefficient for the questionnaire. Cronbach alpha was calculated. The total score to measure the prevalence of ADHD was 0.964 . This result shows that the instrument has the reliability to fulfil the purpose of the study.

Table 3.4: Cooefficient of stability of ADHD instrument for fifth grade students in Bethlehem governorate from the perspective of mothers.

No.	Dimensions	Cronbach alpha
1	**Inattention**	0.946
2	**Hyperactivity**	0.912
3	**Impulsivity**	0.884
	Total score	0.964

3.7.2 The second instrument: Disruptive Behaviour Scale; Eyberg Child behaviour inventory:

Eyberg Child Behaviour Inventory is a unidimentional inventory that measures conduct problems related, in school and home environment, the range of age of children to use this inventory is 2-16 years old(Dulcan, 2010) . Authors have defined the conduct problems as defiance, non-compliance, impulsiveness, and aggressiveness(Odessa, 2003). It is made up of 36-items observed by parents and another inventory that is made up of another 36-items to measure conduct behaviour at school and to be completed by school teacher. In this study the researcher will use only the 36-items for home environment. The scale is to be completed by the mothers in two dimensions (Rayfield Eyberg and foote,1998):

-7-points Intensity scale :to assess behaviour frequency.

-Yes-no Problem scale: to assess if the behaviour is problematic or not.

The first dimension is seven points scale that range from (1) never to seldom, sometimes, often, (7)always . The mother will rate how often the problem occurs. The second dimension assesses if the behaviour is currently a problem for the mother. It is completed by yes or no. The authors say that the total indices will provide information that can detect

conduct-disorder in children and adolescents, also it can find out the severity of the problem and to what extent it is problematic. In addition, it does not provide a specific diagnosis, but an assessment for disruptive behaviour(Odessa, 2003). The potential range of this inventory is from 36 to 252. The potential range for the second dimension(problem) ranges from 0-36.

3.7.2.1 Validity of the instrument:

To verify the validity of the instrument the researcher has translated the instrument from English to Arabic and then made a back translation by one of the highly professional Ph.D holders who verified that the translation was acceptable. Then the instrument was presented to a group of 8 other specialists and experts doctors to judge the comprehensivity, language, clarity. They all agreed that the instrumentis valid, but suggested some changes in the language of some statements. Then the instrument was distributed to ten mothers from the study population to make sure that the statements are understandable. None of the statements was cancelled and the number of statements remained 36.

The validity of the instrument was verified by calculating the Pearson Correlation Coefficient of the questionnaire itemsand the total score of each instrument measurement, and it was found that it's statistically significant in all the items of the questionnaire and it indicates that there's a consistency between paragraphs. The following table show that:

Table (3.5): Results of Pearson Correlation Coefficient of the matrix correlation of the items of the Behavior scale of the fifth grade students in the governorate of Bethlehem.

Number	R value	Statistical function	Number	R value	Statistical function	Number	R-value	Statistical function
1	0.463	0.000	13	0.573	0.000	25	0.571	0.001
2	0.428	0.000	14	0.608	0.000	26	0.573	0.001
3	0.507	0.000	15	0.608	0.000	27	0.620	0.001
4	0.409	0.000	16	0.461	0.000	28	0.427	0.001
5	0.578	0.000	17	0.637	0.000	29	0.591	0.001
6	0.514	0.000	18	0.399	0.000	30	0.613	0.001
7	0.525	0.000	19	0.549	0.000	31	0.619	0.001
8	0.615	0.000	20	0.542	0.000	32	0.591	0.001
9	0.661	0.000	21	0.435	0.000	33	0.501	0.001
10	0.582	0.000	22	0.542	0.000	34	0.591	0.001
11	0.578	0.000	23	0.630	0.000	35	0.545	0.001
12	0.595	0.000	24	0.572	0.000	36	0.405	0.001

3.7.2.2 Reliability of the instrument:

The researcher made sure that the instrument is reliable by calculating the stability of the overall degree of reliability coefficient for the questionnaire. Cronbach alpha was calculated. The total score to measure the conduct behaviour was 0.964 . This result shows that the instrument has the reliability to fulfils the purpose of the study.

3.8 Data collection:

The researcher had followed the following procedure in doing the study:

1-First the researcher calculated the number of students in fifth grade school in Bethlehem governorate by going to the Ministry of Education and getting all the statistical numbers required regarding name and number of schools of each type, number of female and male student in each school.

2-The target population was limited and it was 9.3% of the study population, but represented by the mothers or female caregiver of the students.

3-The schools were chosen randomly but the percentage of students obtained from each school-type was very close to distribution of children in the three types of schools , 60.2% governmental (in the study population it was 70.6%), the UNRWA schools were 11.6% (in the study population it was10.2%) and the private schools were 28.3%(in the study population it was 19.2%).

4-An Approval letter from the university was sent to the ministry of education to facilitate the work of the researcher. An approval letter was given to headmaster of governmental schools to facilitate the work of the researcher.

5-Telephone calls was made to headmasters of UNRWA schools and private schools to get approval on doing distributing the questionnaires in their schools.

6-The validity of the questionnaires was presented to 8 judgements who are highly professional and well experienced . The questionnaire was distributed among 10 mothers from the study population to verify the language of the questionnaires.

7-The researcher went to each school that was randomly chosen, the headmaster or one of the teachers joined the researcher to each class selected. The questionnaire was distributed and the researcher confirmed for students that the questionnaire is done only to the benefit of the scientifically research, and that the school will not get any of their questionnaires. Also the researcher asked the students to bring them back within one week a period of time maximum.

8-The researcher provided a mobile number for the mothers that requires any help or need to ask any question.

9-The researcher received several calls from the mothers, and some asked to make an appointment to help in filling the questionnaire, this was done respectfully.

10-The researcher asked one of the teachers of each school to keep the questionnaires till all be collected within one week.

11- The researcher asked the teacher to write the academic performance of each student on the top of each questionnaire when the student gives her/him the questionnaire by verifying that from school reports.

12-Each questionnaire was given a serial number to facilitate the procedure of entering data to computer.

13-Data was analysed by SPSS.

15- Three questionnaires were cancelled, as they were not completed.

14-Data was analysed and results were calculated.

3.9 Data analysis:

Data was checked for any incompletely answered questionnaire. Total number of complete questionnaires was 492, three were discarded.Then all data was processed and entered using the computer software Statistical Package for the Social Science (SPSS). The data was analysed depending on the research questions and data.

3.10 Statistical Processing

After collecting the questionnaires and checking for validity , they were encoded (given specific numbers) in preparation for processing the data into the computer statistical process, and to analyze the data according to the questions of the study and the study data. The statistical processing was done by extracting the means and standard deviations for each of the questionnaire paragraphs, (t-test), (One Way ANOVA), (Pearson Correlation Coefficient), and (Cronbach Alpha) by using the SPSS-(Statistical Package for Social Sciences).

3.11 Dependent and independent variables:

Dependent variable: ADHD and its dimensions: hyperactivity/impulsivity and inattention, and the conduct behaviour.

Independent variables:

-Students' academic performance.

-School-type: had three levels (private, governmental, UNRWA).

-Gender: had two levels(female and male).

-Academic level of the mother: had five levels(Illiterate, primary, preparatory, secondary, university and above)

-Number of hours that the mother spent with child: a number to be written.

3.11 Describing the variables of the research/study sample

Table (1.3) shows the distribution of the study sample according to the child's academic performance, it appears that 14.2% of the study sample has an average lower than 50, a percentageof 12.6% from 50-60, a percentage of 14.2% from 61- to lower than 70, a percentage of 16.3% from lower than 70- to lower than 80, a percentage of 23% from 80- to lower than 90, and a percentage of 19.7% from 90 and higher. Also, it shows the distribution of the study sample according to the type of school variable, it appears that a percentage of 28.3% students from private schools, a percentage of 60.2% student from governmental school, and a percentage of 11.6% student from UN schools. And according to the gender variable, it shows that the percentage of males is 51.2% and the percentage of females is 48.8%. The variable of the mother's age shows that a percentage of 2.8% did not answer, 9.1% from 25-29 years old, 42.5% from 30-35 years old, 27% from 36-40 years old, 11.4% from 41-45 years old, and 7.1% from 46 years old and above. While the social status variable of the mother shows that a percentage of 92.1% are living with the husband, 2.2% are divorced, 2.8% are widowed, 1% is living alone, and 1.8% other. The variable of mothers' work shows that a percentage of 17.5% work and 82.5% are housewives. While the variable of the mothers' education shows that a percentage of 3.7% are illiterate, 7.1% went to elementary school, 39% went to secondary school, and 27% finished their higher education. The variable of the number of hours are spent by the mother with her child shows that a percentage of 5.1% didn't answer, 15% spend less than 2 hours, 27.6% spend between 3-5 hours, 25.8% spend between 6-8 hours, and 26.4% spend 9 hours and more. And the variable of the relationship to the husband shows that a percentage of 53% there's no relationship, 22.2% first degree relationship, 10.2% second degree relationship, and 14.6% third degree relationship.

The variable of place of residence shows that 79.9% live in the cities, 8.3% live in the villages, and 12% live in the refugee camps. The variable of the household income in NIS shows that a percentage of 6.1% did not answer, 7.3% get lower than 1000 NIS, 25.6% get

from 1000-lower than 2000 NIS, 27.6% get from 2000-lower than 3000, 17.7% from 3000-lower than 4000, 7.5% from 4000-lower than 5000, 4.1% from 5000-lower than 6000, and 4.1% get 6000 or higher.

Table (3.6): Distribution of the study sample according to the variables of the study.

Variable	Level	Number	Percentage
Academic performance of child	Lower than 50	70	14.2
	From 50-60	62	12.6
	61-lower than 70	70	14.2
	70-lower than 80	80	16.3
	80-lower than 90	113	23.0
	From 90 and above	97	19.7
Type of School	Private	139	28.3
	Governmental	296	60.2
	UN	57	11.6
Gender of the Student	Male	252	51.2
	Female	240	48.8
Mothers age	25-29	45	9.1
	30-35	209	42.5
	36-40	133	27.0
	41-45	56	11.4
	46 and above	35	7.1
Social status of the mother	Lives with husband	453	92.1
	Divorced	11	2.2
	Widowed	14	2.8
Work of the mother	Works	86	17.5
	Housewife	406	82.5

Education of the mother	Elementary	35	7.1
	Preparatory	114	23.2
	Secondary	192	39.0
	Higher Education and above	133	27.0
How many hours does the mother spends with her child	Did not answer	25	5.1
	Two hours and less	74	15.0
	3-5 hours	136	27.6
	6-8 hours	127	25.8
	9 hours and above	130	26.4
Relationship to the husband	No relationship	261	53.0
	First degree (like cousins)	109	22.2
	Second degree (like Mother/father cousins)	50	10.2
	Third degree (Distant relatives)	72	14.6
Place of residency	City	392	79.7
	Village	41	8.3
	Refugee Camp	59	12.0
Average of the monthly income in Shekel/NIS	No answer	30	6.1
	Lower than 1000 NIS	36	7.3
	From 1000-Lower than 2000 NIS	126	25.6
	From 2000-Lower than 3000 NIS	136	27.6
	From 3000-Lower than 4000 NIS	87	17.7
	From 4000-Lower than 5000 NIS	37	7.5
	From 5000-Lower than 6000 NIS	20	4.1
	6000 NIS and above	20	4.1

***Note: when number of sample is less than 492, there were missing cases**

3.13 Limitations of the Study:

1- Students in other grades than 5th grade are excluded, as well as students in schools for mentally retarded or those of special abilities.

2-limitation of time as the time duty of schools is limited.

3-lack of resources such as money and facilities .

4- Stigma related to mental disorder might limit the honesty of the mother in filling the questionnaire.

Chapter Four

Results

Study results:

This chapter includes all the results and the analysis of the study. Research questions will be answered and hypotheses will be tested.

The degree of ADHD symptoms prevalence rate was calculated inorder to figure out the range where prevalence rate of the disorder is high, moderate or low.

Results showed that:

When mean equals 2 or less, ADHD symptoms prevalence degree is considered to be low.

When mean is between 2.01 and 3, ADHD symptoms prevalence degree is considered to be moderate.

When mean is above 3.01, ADHD symptoms prevalence degree is considered to be high.

Also, the degree of prevalence rate of conduct behaviour was calculated, inorder to find out the degree where prevalence of the disorder is high, low or moderate. The results showed the following:

When mean is between 1 and 3 or less, conduct behaviour degree is considered to be low.

When mean is between 3.01 and 5.00, conduct behaviour degree is considered to be moderate.

When mean is between 3.01 and 7.00, conduct behaviour degree is considered to be high.

4.1 Results of the first question of the study:

What is the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from to the mothers' perspective?

To answer this question, the researcher calculated the means and the standard deviations of the study sample responses to the paragraph of the questionnaire which expresses the prevalence of the ADHD among fifth grade children in Bethlehem schools according to their mother's perspective.

Table (4.1): Means and Standard Deviations of the responses of the study sample on the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools according to their mother's perspective.

Number	Paragraphs	Mean	Standard Deviation	Degree
29	Moves a lot and does not settle in his place	2.76	1.132	Moderate
33	Speaks a lot	2.72	1.020	Moderate
2	His attention is distracted easily	2.70	1.019	Moderate
50	Suddenly erupts and gets angry (reacts easily)	2.62	1.115	Moderate
39	He moves a lot (runs, dances, jumps) while moving from one place to another	2.58	1.134	Moderate
36	He interferes with the playing of other children (siblings, relatives, or neighbors)	2.57	1.093	Moderate
46	Hasty in his responses	2.53	1.010	Moderate
30	Fidget while sitting and wiggles his hands and legs	2.50	1.159	Moderate
35	Speaks at the times when he needs to be calm	2.49	0.994	Moderate
34	Speaks while others are speaking	2.41	1.002	Moderate
32	Makes loud and disturbing noises in the place where he is	2.36	1.127	Moderate
9	Forgets the instructions and needs to be reminded about them	2.35	0.979	Moderate
37	Tampers with the things that fall within the reach of his hand	2.35	1.119	Moderate
47	Cannot wait for his turn in games or social situations (hasty)	2.33	1.082	Moderate
1	Cannot focus his attention on something specific for a long time (more than three minutes)	2.32	0.983	Moderate
49	Cannot control his impulsive behavior, so he acts without thinking of the results	2.31	1.084	Moderate
24	His mind strays while doing his homework and remembering his lessons	2.28	1.017	Moderate
43	Does not put the tools that he used in their proper place after completing the work he was doing	2.28	1.079	Moderate
14	He cannot finish the work he's doing without the help of others	2.27	0.992	Moderate
45	Begins working before receiving instructions	2.24	0.973	Moderate
15	Often reluctant in taking any decision, even if it is simple	2.23	0.969	Moderate
48	Uses tricks like strong crying, and loud screaming to achieve his demands immediately	2.23	1.150	Moderate
51	Wants his portion (share) in everything to be	2.21	1.156	Moderate

	bigger than others portion(share)			
42	His work is not arranged or ordered	2.20	1.079	Moderate
3	Has difficulties in the listening process	2.17	1.055	Moderate
41	Makes the place where he's staying scattered	2.16	1.062	Moderate
52	Interrupts his father (or mother) when he/she is busy in working or while talking to others	2.16	1.014	Moderate
6	Finds difficulties in the understanding process, in particularly understanding the new information	2.13	1.014	Moderate
25	Turns (converts) the words he heard into a form of a question or repeats some parts of it	2.12	0.995	Moderate
53	Refuses to follow instructions	2.12	1.016	Moderate
13	Makes mistakes in the things that he previously learned	2.08	0.874	Moderate
7	He cannot understand most of the information that he hears or receives	2.07	0.953	Moderate
4	While talking to him he seems like he's not listening	2.05	1.064	Moderate
10	He frequently forgets some things that he needs for school in home	2.03	0.947	Moderate
28	Avoids participating in the activities that needs thinking	2.00	1.007	Low
16	He doesn't finish(complete) his homework or his class work that he started	1.99	1.034	Low
17	His school work is full of mistakes	1.99	0.966	Low
19	He writes in a messy way	1.99	1.091	Low
18	His school work is full of erasing and deleting	1.95	0.960	Low
12	He forgets to do the usual things that he must carry out on daily basis	1.92	0.940	Low
31	He keeps in walking back and forth in the place where he's staying in without a clear cause or goal	1.92	1.071	Low
22	He makes mistakes in reading, were he adds or removes some letters or words	1.90	1.039	Low
5	He cannot continue the dialogue or the conversation that revolves with or about him	1.89	0.992	Low
40	He climbs vertical objects like poles and trees in the place where he's staying in	1.80	1.001	Low
44	It is difficult to control his behavior when he goes out with the family	1.79	0.985	Low
27	When he talks about something or an incident, his talk is incomplete or incoherent	1.73	0.943	Low
11	He frequently forgets some of his tools or objects that he takes with him in the morning	1.65	0.830	Low
21	He does mistakes in writing even if he was	1.64	0.909	Low

	looking at the book in front of him			
26	He cannot send verbal messages from or to others	1.64	0.911	Low
20	He jumps while waswriting, leaving some few lines or sentences without being written	1.63	0.947	Low
23	He jumps while reading, leaving some of the lines and sentences without being read	1.63	0.936	Low
38	He snatches the toys and things that belong to other children	1.59	0.933	Low
54	He behaves in a way that endangers his life	1.59	0.881	Low
8	Finds it difficult to identify the similarities and differences between things	1.52	0.833	Low
Total Score		**2.1239**	**0.59448**	**Moderate**

From the previous table it is noticed that it reflects the means and standard deviations for the responses of a sample study on the prevalence degree of ADHD symptoms among fifth grade children Bethlehem schools according to themothers' perspective, this shows that the mean equals (2.123) with a standard deviation of (0.5944), and this indicates that the prevalence of ADHD symptoms among the fifth-grade children in Bethlehem schools according to their mother's perspective was moderate.

Also, the results in table (1.4) indicate that paragraph(34) was moderate and paragraph(20) was low. While, the paragraph "Moves a lot and does not settle in his place" got the highest mean (2.76), followed by "Speaks a lot" with a mean of (2.72), and followed by "His attention is easily distracted" with a mean of (2.70). And the paragraph "Finds it difficult to identify the similarities and differences between things" got the lowest mean (1.52), followed by "He behaves in a way that endangers his life" with a mean of (1.59).

Also, the researcher calculated the means and standard deviations of the responses of the sample study on a scale that reflects the prevalence domains of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective.

Table (4.2): Means and Standard Deviations of the study sample responses for the prevalence domains of ADHD and/or ADD among fifth-grade students in Bethlehem schools according to their mother's perspective.

Number	Dimension	Means	Standard Deviation	Degree
1	Inattention	1.9954	0.62104	Low
2	Hyperactivity	2.2805	0.69735	Moderate
3	Impulsivity	2.2333	0.73492	Moderate
Total score		**2.1239**	**0.59448**	**Moderate**

From the previous table, it is noticed that it reflects the means and standard deviations of the responses of the individuals of the sample on the prevalence domains of ADHD symptoms among fifth grade children in Bethlehem schools according to their mother's perspective, where the mean of the total score is (2.123) with a standard deviation of (0.5944), and this indicates that the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools according totheir mother's perspective is moderate, while hyperactivity got the highest mean followed by the impulsivity with a moderate mean and followed by the inattention with a low score.

4.2Results of the second question of the study:

"What is the prevalence of ADHD symptoms and conduct behaviors among fifth grade children in Bethlehem schools from the mothers' perspective?"

To answer this the question, the researcher first calculated the means and standard deviations for the responses of the members of the study sample to the questionnaire paragraphs which reflects the prevalence of the conduct behaviors, among the fifth grade students in Bethlehem schools according to their mother's perspective.

Table (4.3): Means and Standard Deviations of the responses of the members of the study sample to the questionnaire paragraphs which reflect the prevalence of the conduct behaviors among fifth grade children in Bethlehem schools from the mothers' perspective.

Number	Paragraphs	Mean	Standard Deviation	Degree	Does the behavior cause you a problem?			
					Yes		No	
					No.	%	No.	%
12	Gets angry when doesn't get own way	3.95	1.969	Moderate	286	58.1	206	41.9
25	Verbally fights with brothers and sisters	3.87	1.770	Moderate	286	58.1	206	41.9
16	Cries easily	3.76	2.135	Moderate	212	43.1	280	56.9
7	Refuses to go to bed on time	3.57	1.988	Moderate	249	50.6	243	49.4
17	Yells or screams	3.57	1.979	Moderate	256	52.0	236	48.0
28	Constantly seeks attention	3.53	1.949	Moderate	130	26.4	362	73.6
5	Refuses to do chores when asked	3.37	1.731	Moderate	236	48.0	256	52.0
24	Verbally fights with friends his own age	3.35	1.703	Moderate	226	45.9	266	54.1
11	Argues with parents about rules	3.34	1.845	Moderate	160	32.5	332	67.5
30	Is easily distracted	3.33	2.023	Moderate	252	51.2	240	48.8

8	Does not obey house rules on his own	3.30	1.840	Moderate	210	42.7	282	57.3
9	Refuses to obey until threatened w/ punishment	3.30	1.910	Moderate	211	42.9	281	57.1
27	Physically fights with brothers and sisters	3.30	1.873	Moderate	233	47.4	259	52.6
6	Slow in getting ready for bed	3.29	2.000	Moderate	216	43.9	276	56.1
10	Acts defiant when told to do something	3.19	1.939	Moderate	149	30.3	343	69.7
1	Dawdles in getting dressed	3.17	2.015	Moderate	157	31.9	335	68.1
35	Is overactive or restless	3.10	2.108	Moderate	163	33.1	329	66.9
2	Dawdles or lingers at mealtime	3.03	1.968	Moderate	146	29.7	346	70.3
29	Interrupts	3.02	1.791	Moderate	192	39.0	300	61.0
15	Whines	3.00	1.946	Moderate	184	37.4	308	62.6
13	Has temper tantrums	2.99	1.975	Low	164	33.3	328	66.7
4	Refuses to eat food presented	2.97	1.777	Low	168	34.1	324	65.9
33	Has difficulty entertaining himself alone	2.89	1.908	Low	153	31.1	339	68.9
31	Has short attention span	2.87	1.896	Low	168	34.1	324	65.9
32	Fails to finish tasks or projects	2.85	1.739	Low	153	31.1	339	68.9
23	Teases or provokes other children	2.83	1.761	Low	204	41.5	288	58.5
26	Physically fights with friends	2.71	1.833	Low	176	35.8	316	64.2
34	Has difficulty concentrating on one thing	2.69	1.779	Low	155	31.5	337	68.5
3	Has Poor table manners	2.47	1.774	Low	147	29.9	345	70.1
20	Is careless with toys and other objects	2.37	1.738	Low	93	18.9	399	81.1
14	Sasses adults	2.32	1.785	Low	92	18.7	400	81.3
22	Lies	2.26	1.586	Low	153	31.1	339	68.9
19	Destroys toys or other objects	1.95	1.525	Low	64	13.0	428	87.0
36	Wets the bed	1.92	1.660	Low	41	8.3	451	91.7
21	Steals	1.76	1.457	Low	66	13.4	426	86.6
18	Hits his parents	1.74	1.427	Low	27	5.5	465	94.5
Total Score		2.9704	1.0051	**low**				

It's noticed from the previous table that it reflects the means and standard deviations for the responses of the members of the study sample to the questionnaire paragraphs which reflects the prevalence of the conduct behaviours, among the fifth grade students in Bethlehem schools from the mothers' perspective. The mean for the total degree was (2.970) with a standard deviation of (1.005), and this indicates that the prevalence of the conduct behaviors among the fifth grade children in Bethlehem schools from the mothers'perspective was low.

Also, the results in table (4.3) indicate that (20) paragraphs had a moderate score, and (16) had low score. The paragraph " Gets angry when doesn't get own way" got the highest mean (3.95), followed by the paragraph " Verbally fights with brothers and sisters" (3.87),

while the paragraph "Hits his parents" got the lowest mean (1.74), followed by "steals" (1.76).

Table(4.4): Percentage and number of mothers according to degree and dimensions

Dimension	Degree	Number	Percentage
Inattention	Low	278	56.5
	Moderate	176	35.7
	High	38	7.8
Hyperactivity	Low	196	39.8
	Moderate	221	44.9
	High	75	15.3
Impulsivity	Low	216	43.9
	Moderate	199	40.5
	High	77	15.6
Total ADHD	Low	220	44.7
	Moderate	226	45.9
	High	46	9.3
Conduct Behaviors	Low	297	60.4
	Moderate	177	36
	High	18	3.6

Table (4.4) indicates that the prevalence of total ADHD symptoms at a high degree was 9.3%, at a moderate degree was 45.9% and at a low degree was 44.7%. It also indicates that the inattention dimension at a high degree was 7.8% while impulsivity and hyperactivity got higher percentage at high degree; 15.6% and 15.3% respectively. In addition this table also indicates that the prevalence of conduct behavior at a high degree was 3.6%, at a moderate degree was 36% and at a low degree was 60.4%.

Table (4.5): Prevalence of Total ADHD comorbid with conduct behavior

Dimension	Conduct behaviors	Low	Moderate	High
	Degree	Numbers and percentages		
Inattention, Hyperactivity and Impulsivity	Low	(39.2)193	(4.2)21	(1.2)6
	Moderate	(18.1)89	(26.2)129	(1.6)8
	High	(3.1)15	(5.6)27	(0.8)4

Table (4.5) indicates that the comorbidity between total ADHD symptoms and conduct behavior at low degree for both dimensions was 39.2%, at moderate degree for both dimensions was 26.2% and at high degree for both dimensions was 0 .8%.

Table(4.6): Conduct Behaviour Intensity Scale verses Problem Scale:

Dimension	Does the behavior cause you a problem?	Yes	No
	Degree	Numbers and percentages	
Conduct Behaviors	Low	(8.4)41	(52)256
	Moderate	(16.3)80	(19.7)97
	High	(2)10	(1.6)8

Table (4.6) indicates that mothers who grade their children with a high degree of conduct behaviour, 10 of them graded the behaviour to be problematic for them and 8 of them graded the conduct behaviour as not problematic. Also, 80 of the mothers who graded their children with a moderate degree of conduct behaviour had graded the conduct behaviour as problematic and 97 of the mother as non-problematic. Also, 41 of the mothers who graded their children with a low degree of conduct behaviour had graded the conduct behaviour as problematic and 256 mothers as non-problematic.

4.3 results of the third question in the study:

Is there a significant difference ($\alpha \leq 0.05$) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schoolsrelated tothe child's academic

performance, school-type, genderand from their mother's perspective related to, academic level of the mother, number of hours that the mother spends with child.

To answer this question, it was converted to the following hypothesis:

4.3.1 Results of the first hypothesis:

"There is no significant difference (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to academic performance".

To examine the first Null hypothesis the means of the sample study responses were calculated about the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable rate.

Table (4.7): Means and Standard Deviations of the responses of the sample study in the averages of the prevalence of ADHD symptoms among fifth grade children in the schools of Bethlehem attributed to the variable rate.

Dimension	Average	Number	Mean	Standard Deviation
Inattention	Less than 50	70	2.5337	0.68560
	From 50-60	62	2.4124	0.57641
	61- Less than 70	70	2.1077	0.52077
	70- Less than 80	80	1.9554	0.51585
	80- Less than 90	113	1.7288	0.45601
	90 and above	97	1.6031	0.44037
Hyperactivity	Less than 50	70	2.6321	0.72369
	From 50-60	62	2.5121	0.61392
	61- Less than 70	70	2.3464	0.72830
	70- Less than 80	80	2.2961	0.70112
	80- Less than 90	113	2.1394	0.62119
	90 and above	97	1.9826	0.62771

Impulsivity	Less than 50	70	2.5686	0.76434
	From 50-60	62	2.5194	0.71399
	61- Less than 70	70	2.2857	0.72358
	70- Less than 80	80	2.2175	0.76071
	80- Less than 90	113	2.1000	0.66238
	90 and above	97	1.9392	0.63943
Total ADHD	Less than 50	70	2.5693	0.64222
	From 50-60	62	2.4618	0.52858
	61- Less than 70	70	2.2114	0.56144
	70- Less than 80	80	2.1049	0.52513
	80- Less than 90	113	1.9192	0.47877
	90 and above	97	1.7778	0.46688

It is noticed from table (4.7) that there are differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of child's academic performance, and to know the significance of differences, (One Way ANOVA) was used as shown in the following table:

Table (4.8): Results of the analysis of (One Way ANOVA) test for the responses of the individuals of the sample about the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of child's academic performance.

Dimension	Variability	Sum of squares	Degrees of Freedom	Mean of squares	F-value	Significance level
Inattention	Between groups	55.034	5	11.007	39.819	0.001
	Within groups	134.342	486	0.276		
	Sum	189.376	491			
Hyperactivity	Between groups	23.163	5	4.633	10.443	0.001
	Within groups	215.606	486	0.444		
	Sum	238.769	491			
Impulsivity	Between groups	23.553	5	4.711	9.474	0.001
	Within groups	241.640	486	0.497		
	Sum	265.193	491			
Total ADHD	Between groups	37.885	5	7.577	27.149	0.001
	Within groups	135.635	486	0.279		
	Sum	173.520	491			

It is noticed that P value for the total score is (27.149) and the level of significance is (0.001) which is less than ($\alpha \geq 0.05$) and this means that there are statistical differences in the prevalence of ADHD symptoms among the fifth grade children in Bethlehem schools that is attributed to the variable of academic performance, and the domains, thus the first Null hypothesis was rejected. The differences were in favor of less than 50, the following table shows this.

Results of the test (LSD) or comparisons between the means of the responses of the sample according to the variable of average: see appendix number 1.

4.3.2 Results of the second hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to type of school".

To examine the second null hypothesis the means of the responses for the sample was calculated on the prevalence of ADHD symptoms among the fifth grade children in Bethlehem schools attributed to the variable of type of school.

Table (4.9): Means and Standard Deviations of the responses for the sample was calculated on the prevalence of ADHD symptoms among fifth grade children in the Bethlehem attributed to the variable of type of school.

Dimension	School Type	Number	Mean	Standard Deviation
Inattention	Private	139	1.8255	0.52129
	Governmental	296	2.0859	0.65160
	UN	57	1.9398	0.59781
Hyperactivity	Private	139	2.2536	0.70248
	Governmental	296	2.3239	0.69492
	UN	57	2.1206	0.68260
Impulsive behavior	Private	139	2.1964	0.72646
	Governmental	296	2.2720	0.73012
	UN	57	2.1228	0.77667
Total ADHD	Private	139	2.0210	0.54955
	Governmental	296	2.1909	0.60866
	UN	57	2.0273	0.58591

It is noticed from the table (4.9) that there are apparent differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the

variable of type of school. And to know the significance of the differences the (One Way ANOVA) test was used as shown in the next table:

Table (4.10): Results of the analysis of (One Way ANOVA) test for the responses of the individuals of the sample about the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of type of school.

Dimension	Variability	Sum of squares	Degrees of Freedom	Mean of squares	F-value	Significance level
Inattention	Between groups	6.611	2	3.306	8.844	0.001
	Within groups	182.765	489	0.374		
	Sum	189.376	491			
Hyperactivity	Between groups	2.115	2	1.058	2.185	0.114
	Within groups	236.654	489	0.484		
	Sum	238.769	491			
Impulsivity	Between groups	1.328	2	0.664	1.230	0.293
	Within groups	263.866	489	0.540		
	Sum	265.193	491			
Total ADHD	Between groups	3.330	2	1.665	4.784	0.009
	Within groups	170.190	489	0.348		
	Sum	173.520	491			

It is noticed that P value for the total score is (4.784) and the level of significance is (0.001) which is less than ($\alpha \geq 0.05$) and this means that there are statistical differences in the prevalence of ADHD symptoms among the fifth grade children in Bethlehem schools attributed to the variable of type of school, and the dimensioninattention, thus the second

Null hypothesis was rejected. The differences were in favor of the governmental schools, and the following table will show this.

Table (4.11): Results of the test (LSD) or comparisons between the means of the responses of the sample according to the variable of type of school

Dimension	Variables		Differences in means	Level of Sig.
Inattention	Private	Governmental	0.26037-	0.001
		UN	0.11431-	0.235
	Governmental	Private	0.26037	0.001
		UN	0.14606	0.099
	UN	Private	0.11431	0.235
		Governmental	0.14606-	0.099
Total ADHD	Private	Governmental	0.16983-	0.005
		UN	0.00624-	0.946
	Governmental	Private	0.16983	0.005
		UN	0.16359	0.056
	UN	Private	0.00624	0.946
		Governmental	0.16359-	0.056

4.3.3 Results of the third hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to gender of student".

To examine the third null hypothesis the t-test results were calculated and the means for the responses of the sample study on the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of the gender of the child.

Table (4.12): Results of T-test for independent samples for the responses of the sample on the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of the gender of the student.

Dimension	Sex	Number	Mean	Standard Deviation	Degrees of Freedom	t value	Level of Sig.
Inattention	Male	252	2.1147	0.63393	490	4.446	0.001
	Female	240	1.8702	0.58276			
Hyperactivity	Male	252	2.4630	0.66980	490	6,171	0.001
	Female	240	2.0888	0.67516			
Impulsivity	Male	252	2.3440	0.73349	490	3.462	0.001
	Female	240	2.1171	0.71977			
Total ADHD	Male	252	2.2604	0.59448	490	5.361	0.001
	Female	240	1.9807	0.56093			

The previous table shows that t value for the total degree equals (5.361), and level of significance is (0.001), which means there are differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools attributed to the variable of the gender of the child. And to all of the dimension-, the differences were in favor of the male child. The third null hypothesis was rejected.

4.3.4 The fourth hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective related to the educational level of the mother".

To examine the eighth null hypothesis the means of the sample study responses were calculated about the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective attributed to the variable of the mother educational level.

Table (4.13): Means and Standard Deviations of the responses of the sample study in the averages of the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributedto the variable of the mother educational level.

Dimension	Mother's educational Level	Number	Mean	Standard Deviation
Inattention	Elementary	35	2.3173	0.64185
	Preparatory	114	2.1748	0.62629
	Secondary	192	1.9334	0.61523
	Higher Education and/or above	133	1.7938	0.52665
Hyperactivity	Elementary	35	2.5714	0.65325
	Preparatory	114	2.3810	0.73937
	Secondary	192	2.2435	0.64348
	Higher Education and/or above	133	2.1447	0.71030
Impulsivity	Elementary	35	2.5114	0.72873
	Preparatory	114	2.3105	0.78564
	Secondary	192	2.2260	0.69384
	Higher Education and/or above	133	2.0872	0.71884
Total ADHD	Elementary	35	2.4286	0.57971
	Preparatory	114	2.2610	0.62527
	Secondary	192	2.0795	0.56083
	Higher Education and/or above	133	1.9521	0.55146

It is noticed from table (4.12) that there are differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the variable of mother's educational level. And to know the significance of differences (One Way ANOVA) test was used as shown in the next table:

Table (4.14): (One Way ANOVA) results on the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective attributed to the variable of the educational level of the mother.

Dimension	Variability	Sum of squares	Degrees of freedom	Squares mean	F Value	Level of sig.
Inattention	Between groups	13.339	3	4.446	12.496	0.001
	Within groups	167.235	470	0.356		
	Sum	180.574	473			
Hyperactivity	Between groups	6.803	3	2.268	4.802	0.003
	Within groups	221.964	470	0.472		
	Sum	228.767	473			
Impulsivity	Between groups	6.225	3	2.075	3.933	0.009
	Within groups	247.961	470	0.528		
	Sum	254.186	473			
Total ADHD	Between groups	9.643	3	3.214	9.695	0.001
	Within groups	155.822	470	0.332		
	Sum	165.465	473			

It is noticed that F value for the total score is (9.695) and the level of significance is (0.001) which is less than ($\alpha \geq 0.05$) and this means that there are statistical differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the variable of the educational level of the mother, and for the dimension, thus the eighth Null hypothesis was rejected. The differences were in favor of those who finished the elementary school only. The following table shows this:

Table (4.15): Results of the test (LSD) or comparisons between the means of the responses of the sample according to the variable of educational level of the mother.

Dimension	Variables		Differences in Mean	Level of Sig.
Inattention	Elementary	Preparatory	0.14253	0.217
		Secondary	0.38394	0.001
		Higher Education and/or above	0.52358	0.001
	Preparatory	Elementary	0.14253-	0.217
		Secondary	0.24140	0.001
		Higher Education and/or above	0.38104	0.001
	Secondary	Elementary	0.38394-	0.001
		Preparatory	0.24140-	0.001
		Higher Education and/or above	0.13964	0.038
	Higher Education and/or above	Elementary	0.52358-	0.001
		Preparatory	0.38104-	0.001
		Secondary	0.13964-	0.038
Hyperactivity	Elementary	Preparatory	0.19040	0.153
		Secondary	0.32794	0.010
		Higher Education and/or above	0.42669	0.001
	Preparatory	Elementary	0.19040-	0.153
		Secondary	0.13754	0.092
		Higher Education and/or above	0.23629	0.007
	Secondary	Elementary	0.32794-	0.010
		Preparatory	0.13754-	0.092
		Higher Education and/or above	0.09875	0.205
	Higher Education and/or above	Elementary	0.42669-	0.001
		Preparatory	0.23629-	0.007
		Secondary	0.09875-	0.205
Impulsivity	Elementary	Preparatory	0.20090	0.154
		Secondary	0.28539	0.034
		Higher Education and/or above	0.42421	0.002
	Preparatory	Elementary	0.20090-	0.154
		Secondary	0.08448	0.327
		Higher Education and/or above	0.22331	0.017

	Secondary	Elementary	0.28539-	0.034
		Preparatory	0.08448-	0.327
		Higher Education and/or above	0.13882	0.092
	Higher Education and/or above	Elementary	0.42421-	0.002
		Preparatory	0.22331-	0.017
		Secondary	0.13882-	0.092
Total ADHD	Elementary	Preparatory	0.16753	0.134
		Secondary	0.34910	0.001
		Higher Education and/or above	0.47647	0.001
	Preparatory	Elementary	0.16753-	0.134
		Secondary	0.18157	0.008
		Higher Education and/or above	0.30894	0.001
	Secondary	Elementary	0.34910-	0.001
		Preparatory	0.18157-	0.008
		Higher Education and/or above	0.12737	0.051
	Higher Education and/or above	Elementary	0.47647-	0.001
		Preparatory	0.30894-	0.001
		Secondary	0.12737-	0.051

4.3.5 The fifth hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective related to number of hours that the mother spends with the child".

To examine the eighth null hypothesis the means of the sample study responses were calculated about the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective attributed to the variable of the number of hours spent by the mother with the child.

Table (4.16): Means and Standard Deviations of the responses of the sample study in the averages of the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the number of hours spent by the mother with the child.

Dimension	The number of hours spent by the mother with the child	**Number**	**Mean**	**Standard Deviation**
Inattention	Two hours and less	74	2.1708	0.69427
	3-5 hours	136	1.9947	0.57885
	6-8 hours	127	1.8754	0.60667
	9 hours and above	130	1.9577	0.59059
Hyperactivity	Two hours and less	74	2.3370	0.72296
	3-5 hours	136	2.3047	0.64749
	6-8 hours	127	2.1929	0.65702
	9 hours and above	130	2.2418	0.71868
Impulsivity	Two hours and less	74	2.3635	0.69115
	3-5 hours	136	2.2375	0.72561
	6-8 hours	127	2.1181	0.72751
	9 hours and above	130	2.2100	0.73420
Total ADHD	Two hours and less	74	2.2558	0.63866
	3-5 hours	136	2.1315	0.55066
	6-8 hours	127	2.0144	0.57557
	9 hours and above	130	2.0886	0.57581

It is noticed from table (4.15) that there are differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the variable of the number of hours spent by the mother with the child. And to know the significance of differences (One Way ANOVA) test was used as shown in the next table:

Table (4.17): (One Way ANOVA) results on the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the variable of the number of hours spent by the mother with the child.

Dimension	Variability	Sum of squares	Degrees of freedom	Squares mean	F Value	Level of sig.
Inattention	Between groups	4.179	3	1.393	3.754	0.011
	Within groups	171.789	463	0.371		
	Sum	175.968	466			
Hyperactivity	Between groups	1.323	3	0.441	0.946	0.418
	Within groups	215.771	463	0.466		
	Sum	217.094	466			
Impulsivity	Between groups	2.894	3	0.965	1.844	0.138
	Within groups	242.176	463	0.523		
	Sum	245.070	466			
Total Degree	Between groups	2.851	3	0.950	2.835	0.038
	Within groups	155.222	463	0.335		
	Sum	158.074	466			

It is noticed that F value for the total score is (2.835) and the level of significance is (0.000) which is less than ($\alpha \geq 0.05$) and this means that there are statistical differences in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers'perspective attributed to the variable of the number of hours spent by the mother with the child, and for the domain of inattention, thus the eighth Null hypothesis was rejected. The differences were in favor of those who spend two hours or less. The following table shows this:

Table (4.18): Results of the test (LSD) or comparisons between the means of the responses of the sample according to the variable of the number of hours spent by the mother with the child.

Dimension	Variables		Differences in Mean	Level of Sig.
Inattention	Two hours and less	3-5 hours	0.17610	0.046
		6-8 hours	0.29543	0.001
		9 hours and above	0.21316	0.017
	3-5 hours	Two hours and less	0.17610-	0.046
		6-8 hours	0.11933	0.113
		9 hours and above	0.03706	0.620
	6-8 hours	Two hours and less	0.29543-	0.001
		3-5 hours	0.11933-	0.113
		9 hours and above	0.08227-	0.280
	9 hours and above	Two hours and less	0.21316-	0.017
		3-5 hours	0.03706-	0.620
		6-8 hours	0.08227	0.280
Total ADHD	Two hours and less	3-5 hours	0.12422	0.138
		6-8 hours	0.24132	0.005
		9 hours and above	0.16715	0.048
	3-5 hours	Two hours and less	0.12422-	0.138
		6-8 hours	0.11710	0.102
		9 hours and above	0.04293	0.546
	6-8 hours	Two hours and less	0.24132-	0.005
		3-5 hours	0.11710-	0.102
		9 hours and above	0.07417-	0.305
	9 hours and above	Two hours and less	0.16715-	0.048
		3-5 hours	0.04293-	0.546
		6-8 hours	0.07417	0.305

Chapter five

Discussion and Recommendations

5.1 Discussion of The First Question of the Study:

What is the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools from the mothers' perspective?

Results of the study revealed that the prevalence degree of ADHD symptoms was moderate, the mean of total ADHD scale was (2.12) and the standard deviation was (0.59). The three dimensions were also analysed, the inattention was found to be of a low degree, mean was (1.99) and the standard deviation was (0.62). The hyperactivity got a moderate degree, mean was (2.28) and standard deviation was (0.69). The impulsivity got a moderate degree, mean was (2.12) and standard deviation was (0.59).

In addition, results showed that 9.3% of the study sample, who were 46 children, had a high degree of total ADHD symptoms, and 45.9% of the study sample, who were 226 children, had a moderate degree of total ADHD symptoms, and 44.7% of the study sample, who were 220 children, had a low degree of total ADHD symptoms.

Prevalence rate of ADHD symptomson the total score in this study is considered to be higher than the prevalence rate of ADHD recorded by the American Psychiatric Association 2000, which was from 3 to 7%. On the other hand, the prevalence rate revealed in this study was similar to some of the studies done in the Arab countries.

The increase in the ADHD symptoms prevalence rate might be due to external factors such as; the political situation and what disorders comes out of it, like post-traumatic stress disorder. A study was done in Gaza by (Thabet et al., 2009) revealed a high risk for children exposed repeatedly to traumatic events to display the symptoms of both PTSD and ADHD. So, when the child had PTSD symptoms, which develop an anxious state in him, it may also show hyperactivity, inattention and impulsivity problems and then, this might be misdiagnosed as ADHD.

In addition, other external factors might play a role in this prevalence such as: parenting style, social conditions, stigma of going to a psychiatrist or a psychologist, deficiency of centres and programs that aid parents to seek help for their child problems, parents in the society might be unaware of the fact that these symptoms can be managed if they seek help, even unaware of the presence of such a disorder, and parents' fear of medications' side effects if they give it to their child to control ADHD symptoms. Therefore, these

factors make the disorder underdiagnosed and help in increasing severity of symptoms, and in turn increases the prevalence rate of severe symptoms.

Also, several previous studies have indicated a discrepancy between mothers evaluation of ADHD and teachers evaluation for ADHD, most of them revealed a higher evaluation of ADHD by mothers. This might be attributed to the mothers psychoeducation about the disorder, the mother higher expectations for her child, that she wants him with high moral, also, the mother might compare her child with others of a different developmental stage.

Comparing the results of this study with the thesis research done by Rizqallah in 2008 among 6-9 year children in Bethlehem schools, who used the same ADHD questionnaire, the prevalence of ADHD was found to be 17.8% with high degree of ADHD, 67% with moderate degree of ADHD prevalence and 15.2% with low degree of ADHD prevalence. In this study, the results were 9.2%, 45.9% and 44.7%; high , moderate and low degree respectively. This might indicates how the prevalence of ADHD symptoms in a high degree decreases by age, as this study is done among 11 year children. Moderate symptoms of ADHD also decreased by age. Low degree of prevalence of ADHD symptoms had increased by age. This indicates that some of the symptoms diminish by age while others persist for a long period.

This study is consistent with a study done in Qatar that was conducted by (Bener et al., 2006) , where prevalence rate of ADHD was 9.4% , and study population was 6-12 year old school children. Avery closed prevalence rate was noticed in studies done in Oman (7.8%), Iran(5-8.5%),USA (8.7%).

5.2: Discussion of the Second Question of the Study:

What is the prevalence rate of ADHD symptoms comorbid with conduct behaviours among fifth grade children in Bethlehem schools from their mother's perspective?

Before finding the comorbidity in this study, the prevalence of conduct behaviours was found to be at a low degree, mean was (2.97) and standard deviation was (1.005). Prevalence of total conduct behaviours was 60.4% at a low degree (297 students), at a moderate degree 36% (177 students), at a high degree 3.6% (18 students).

According to literature some studies revealed the following prevalence of conduct problems: Hartly S. had found the prevalence of CD problems 26% in a target population

age 7-11, Colman I. and his colleagues found the prevalence of CD in Britain in the year 2009 among group age13-53 was 9.5%, (Gelhorn et al.,2007) found the prevalence of CD in USA to be 6.7% for males and 2.6% for females for a group above 18 year old, Nock M. And his colleagues found the prevalence of conduct problems 9.5% in the USA and median age of onset was 11.6 , and finally Sarkhel had found the prevalence of CD 4.5% among a group of 10-15 year old.

This study reveals a lower percentage of conduct behaviour compared to the studies that measured the CD. This might be attributed to the following:

-The age of the target group in this study is younger tothat in most of the mentioned studies, which might indicate that conduct behaviour is seen much more obvious in older age than 11.

-CD childhood onset might have lower presence than adolescent onset where conduct behaviour will be obvious.

-This tool is designed to detect for conduct behaviour and not to make a full diagnosis of CD.

Results of comorbidity between total ADHD symptoms and conduct behaviour among fifth grade students in Bethlehem governorate revealed that (39.2%) was in a low degree for both dimensions, (26.2%) was in a moderate degree for both dimensions and (0.8%) was in a high degree for both dimensions.

Most of the literature reveals a high comorbidity between ADHD and conduct disorder, in this study the conduct behaviour was measured upon fifth grade students in Bethlehem schools from mothers'perspective, and was very consistent to literature. In a study done by Larson K. in the USA, done in 2007, and was published in 2009, prevalence rate of ADHD was (8.2%) which is very close to the prevalence found in this study (9.3%). The comorbidity in the study mentioned was (27%) which is very close to the results of the present study for comorbidity in a moderate degree (26.2%).

Comorbidity at high degree was found to be (0.8%), this low percentage can be attributed to the age of the study sample, they were 11year old, while most literature studied conduct disorder for a wide range in age, and for example, in the previous study mentioned, study

sample was 6-17 years old, where symptoms of CD will be obvious and clearly developed, as it was found 27%.

According to DSM IV conduct problems might be mild, moderate or severe. On the other hand the two types of conduct disorders are: either to have one of the criterion characteristic before the age of ten, or to have absence of any criterion before age 10. Therefore, it's clear according to study results that severe symptoms of conduct behaviour are very low at age 11year and is present in comorbidity with high level of ADHD symptoms at 0.8%. This might lead to a conclusion that severe conduct problems are found in a low degree among 11 year old children, and that conduct disorder, adolescent –onset type might have higher prevalence rate than childhood-onset type, this requires further investigations in Palestine to find it out and to find age of onset for conduct behaviours associated with ADHD.

Other study conducted by(Langley et al.,2007) in Britain revealed out a comorbidity rate 13%, among 6-16 year old. In this study the sample was 11 years old. This deference in conduct behaviour prevalence rate comorbid to ADHD can be attributed to the age of onset of conduct behaviour. It can be explained that the adolescent onset type have higher prevalence rate than the childhood onset type.

In addition, conduct behaviour might not be honestly represented in the questionnaire, the mother might be afraid that what she wrote might be seen by the school, although confidentiality was assured. This might show a low rate of conduct behaviour prevalence in association to ADHD.

Furthermore, it could be that the mothers are less willing to admit that their child is having severe disruptive behaviours because such symptoms imply a negative moral judgment .

Conduct Behaviour Intensity Scale verses Problem Scale indicates that 41 mothers who graded their children with a low degree of conduct behaviour feel that the behaviour is problematic while 256 of the mothers feel it's not problematic. This is reasonable; as the majority of the mothers will not be stressed of a low degree of conduct behaviours, those 41 mothers who were stressed of the low degree of the conduct behaviour might be intolerant or personally distressed. On the other hand, 8 out of 18 of the mothers who grade their children with a high degree of conduct behaviour feel that the behaviour is not

problematic, this might indicate that the mothers are highly tolerant to conduct behaviour and also are reluctant to admit that they have a child with a difficult behaviour. While it's reasonable to find the other mothers distressed of the conduct behaviour of their child.

5.3 Discussion of the Third Question of the Study:

5.3.1 Discussion of the First Hypothesis:

"There is no significant difference (α ≤0.05) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools related to academic performance".

The study results showed that there is a statistical significant difference at (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to child's academic performance. In the total ADHD score (f = 27.149) and the significance level (0.001) which indicates a statistical difference in the total ADHD score as well as for the three dimensions. The mean square between groups was (7.577) , and within groups was (0.279).

Among the attention dimension, there has been a statistically significant differences at (α ≤0.05) regarding the academic performance and the inattention symptoms in fifth grade children in Bethlehem schools. The results gave (f= 39.819) and significant level (0.001). The mean square between groups was (11.007) and within groups was (0.276).

Among the hyperactivity dimension,there has been a statistically significant difference at (α ≤0.05) regarding the academic performance and hyperactivity symptoms in fifth grade children in Bethlehem schools. The results gave (f= 10.443) and significant level (0.001). The mean square between groups was (4.633) and within groups was (0.44).

Among the impulsivity dimension, there has been a statistically significant differences at (α ≤0.05) regarding the academic performance and impulsivity symptoms in fifth grade children in Bethlehemschools. The results gave (f= 9.474) and significant level (0.001). The mean square between groups was(4.711) and within groups was (0.497).

The reason for the previous result might be attributed to the following:

-The mismatch between the school environment and the ADHD child may contribute to a low academic performance. That is, when the child feels himself rejected by teachers or pears, it will make him feels unwanted at school and intern this doesn't motivate the child to study and the results would be low academic performance.

-The three main dimensions of ADHD counts also for the low academic performance:

-Inattention: those with inattention symptoms can face difficulties to maintain attention span important information, especially those of prolonged tasks, given by the teacher, or while studying.

-Hyperactivity: when the child is expected to sit quiet and focus to learn, his motor and verbal hyperactivity will be seen as misbehaviour. He might be punished infront of all students. This might affect his self-esteem and accordingly affect his learning ability.

-Impulsivity:the child will face difficulties to delay hid urges: to read and listen to directions, to raise hands to answer question before the question being completed, to organise his work and to make his plans.

-The deficiencies in the executive functioning which affects the child's ability in problem solving, goal-setting, motivation.

-The high rate of comorbidity between ADHD and learning disabilities which can greatly account for the low academic performance among ADHD children.

-The peer relationship can have an impact on child adherence to school and therefore affects his performance.

-These children are more exposed to bullying which will affect their commitment to school and lower their academic performance.

-Comorbidity between ADHD and disruptive behaviour can also account for the low academic achievement.

-Environmental and personal factors can also have an impact (restrictions).-Problems of body functioning and structure can have an impact(impairments)

-Problems of activities of daily living (limitations).

-Teachers might be affected with the child behaviour at school and therefore give him low grades.

-ADHD children are more at risk to develop anxiety and depression which will decrease their ability to study.

-ADHD feels less at deficit with peers in street, this will lead to less commitment to school.

5.3.2 Discussion of the Second Hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools related to type of school".

The study results showed that there is a statistical significant differences at (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to type of school. In the total ADHD score (f =4.784) and the significance level at(0.009) which indicates a statistical difference in the total ADHD score as well as for the inattention dimension. The mean square between groups was (3.330) , and within groups was (170.190).

Among the inattention dimension, there has been a statistically significant difference at (α ≤0.05) regarding type of school in fifth grade children in Bethlehem schools. The results gave (f= 8.844) and significant level at (0.001). The mean square between groups was (6.611) and within groups was (182.765).

Among the hyperactivity dimension, there has not been a statistically significant difference at (α ≤0.05) regarding the type of school and hyperactivity symptoms in fifth grade children in Bethlehem schools. The results gave (f= 2.185) and a non-significant level (0.114). The mean square between groups was (2.115) and within groups was (236.654).

Among the impulsivity dimension, there has not been a statistically significant differences at (α ≤0.05) regarding the type of school and impulsivity symptoms in fifth grade children in Bethlehem schools. The results gave (f= 1.230) and significant level (0.293). The mean square between groups was (1.328) and within groups was (263.866)

The difference was in favour of governmental school.

The reason for this result might be attributed to the following:

- The governmental schools accept children without a pre-test for their intelligence, capabilities or developmental stage. This might contribute to the results that governmental schools might include a higher percentage of children with problems in attention, or total ADHD symptoms.

- The private schools are more structured settings and boundaries limit than governmental schools which restrict the child from expressing his ADHD symptoms obviously.

- The child will not be excluded from a governmental school for his inattention, impulsivity, hyperactivity or disruptive behaviour as the rule of education allows him to stay in school. In Private schools the child might be excluded for unaccepted behaviour or low academic performance (due to inattention) and this will make private schools has a low percentage of these children, as they will go to governmental schools.

-Teaching methodology that is followed in governmental schools may plays a role in the hyperactivity and inattention of the child. To prolong a child's attention span an interesting and attracting teaching methodology should be used. The last are more common methodologies in private schools than in governmental schools.

- Governmental schools have a higher percentage oflow economic level students than in private schools. Poverty might play a role in developing ADHD symptoms in several ways. It might be associated with a higher number of siblings than in higher economic level families, and therefore decrease the time spent by the caregiver with the child. The child might feel neglected and this intern elaborates ADHD symptoms.The parenting style might be also affected by the economic level in the family and might had an influence in elaborating ADHD symptoms among children.

5.3.3 Discussion of the third hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools related to gender".

The study results showed that there is a statistical significant difference at (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools related to gender. In the total ADHD score (t=5.361) and the significance level at(0.001) which indicates a statistical difference in the total ADHD score as well as for all the three dimensions of ADHD. The mean for males was (2.2604), and for females was (1.9807).

Among the inattentive dimension, there has been a statistically significant difference at (α ≤0.05) regarding the gender in fifth grade children in Bethlehem schools. The results gave (t= 4.446) and a significant level at (0.001). The mean for males was (2.1147) and mean for females were (1.8702).

Among the hyperactivity dimension, there has been a statistically significant difference at ($\alpha \leq 0.05$) regarding the gender in fifth grade children in Bethlehem schools. The results gave ($t= 6.171$) and a significant level at (0.001). The mean for males was (2.4630) and mean for females were (2.0888).

Among the impulsivity dimension, there has been a statistically significant difference at ($\alpha \leq 0.05$) regarding the gender in fifth grade children in Bethlehem schools. The results gave ($t= 3.462$) and a significant level at (0.001). The mean for males was (2.3440) and mean for females were (2.1171).

The difference was in favour of male gender.

The reason for this might be attributed to the following:

-Females might be under identified; they might gather symptoms of the inattentive type.

-Societal criticism and maternal criticism of hyperactivity and impulsivity in daughters or females in general lead these symptoms to become internalized. It causes also a low self-esteem and negative self-image.

-Isolation, anxiety and depression might be seen more in females due to peer rejection, therefore symptoms of ADHD will masked by symptoms of anxiety and depression .

-Boys are more vocal, so they are overdetected, means can be easily identified and symptoms are more obvious.

-Boys are more problematic and obvious in behaviour: more problematic with teachers and families, girls may do problematic behaviour, be restless, but because boys are more overt, ADHD might be undetected. It might be an issue of behaviour visibility.

-Girls usually seek out emotional support more than boys, therefore, cannot behave in overtly disruptive behaviour.

-Gender differences can be also attributed to the polygenic multiple threshold model, which indicates that males are more likely to be diagnosed with ADHD than females because of the lower threshold for the liability that is needed to manifest the disorder of ADHD. Females require a higher liability to express ADHD than do males.

5.3.4 Discussion of The fourthhypothesis:

"**There are no significant differences (α ≤0.05) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools according to their mother's perspective related to the mothers' educational level".**

The study results showed that there is a statistical significant difference at (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools from their mother's perspective related to the mother's educational level . In the total ADHD score (f=9.695) and the significance level at(0.001) which indicates a statistical difference in the total ADHD score as well as for the three dimensions of ADHD. The mean was (2.4286) and standard deviation was(0.5797).

Among the inattentive dimension, there has been a statistically significant difference at (α ≤0.05) regarding the mother's educational level , among fifth grade children in Bethlehem schools according to their mother'sperspective. The results gave (f= 12.496) and a significant level at (0.000). The mean was (2.3173) and standard deviation was (0.6418).

Among the hyperactivity dimension, there has been a statistically significant difference at (α ≤0.05) regarding the mother's educational level , among fifth grade children in Bethlehem schools according to their mother's perspective. The results gave (f= 4.802) and a significant level at (0.003). The mean was (2.571) and standard deviation was (0.653).

Among the impulsivity dimension, there has been a statistically significant difference at (α ≤0.05) regarding the mother's educational level , among fifth grade children in Bethlehemschools according to their mother's perspective. The results gave (f= 3.933) and a significant level at (0.009). The mean was (2.511) and standard deviation was (0.728).

The differences was on the favour of the primary education. The results can be attributed to the following:

-A mothers' primary level of education can give an idea of unsuitable parenting style such as the uninvolved parenting style where the mother might neglect or reject the needs of the child.

-There might be lack of discipline at home.

-The mother didn't catch the symptoms of ADHD in earlier stage, and so symptoms continue untreated and underdiagnosed.

-The mother has no idea about ADHD, so, didn't seek help, therefore symptoms grow up undiagnosed.

-The mothers' belief of stigma out of seeking help from a psychiatrist, as a result, symptoms grow untreated.

-The mother doesn't follow clinician directions if had seek help, and symptoms grow untreated enough.

5.3.5: Discussion of The fifth Hypothesis:

"There are no significant differences (α ≤0.05) in the prevalence of ADHD symptoms among fifth grade children in Bethlehem schools according to their mother's perspective related to number of hours that the mother spends with the child".

The study results showed that there is a statistical significant difference at (α ≤0.05) in the prevalence rate of ADHD symptoms among fifth grade children in Bethlehem schools according to their mother's perspective related to the number of hours that themother spends with her son. In the total ADHD score (f=2.835) and the significance level at(0.038) which indicates a statistical difference in the total ADHD score as well as for the inattention dimension of ADHD. The square mean between groups was (2.851) and within groups was (155.222).

Among the inattentive dimension, there has been a statistically significant difference at (α ≤0.05) regarding the number of hours that the mother spends with her son , among fifth grade children in Bethlehem schools according to their mother's perspective. The results gave (f= 3.754) and a significant level at (0.011). The square mean between groups was (4.179) and within groups was (171.789).

The difference was in the favour of two hours and less. The results can be attributed to the following:

-According to the Palestinian culture, parenting is the mom employment. The father is mostly out of the loop, he even gets information about his son as a second hand, therefore, the impact is upon the mother. As a result, this will cause her much frustration and

depression within, which might keep her apart from her son where she cannot maintain balance in her own life.

-Mothers may have an experience that their child cannot focus, or pay attention for a long period, and therefore they give up.

5.4 Recommendations:

As a result of the present study, the researcher recommends the following:

-An intensive screening for ADHD among primary school children, on the clinical level as well as for the school and home level, so that the majority of children suffering from the disorder will be diagnosed and treated, and impact on person, family and society will be minimised.

-An intensive screening for disruptive behaviour such as, conduct disorder solely or comorbid with ADHD or other disorders, in primary grades as well as for preparatory grades, to help them to be under treatment and reduce the impact on person, family and person.

-To make the required efforts to raise the academic performance of these children and therefore to reduce percentage of uncompleted education individuals in the society, as well to give them the chance to achieve them-selves, to have a profession and get employed in the future.

-To make the required efforts to raise the educational level of parents, especially those who have an elementary , preparatory or secondary level of education, either by making them special trainings or programs helping them to get a profession on one side and to improve their intellect on the other side.

-To pay an additional attention to screening for ADHD and comorbidity disorders in the governmental schools, to afford them special individual and family counselling, and to improve their education.

-To make special guidance for families of ADHD children.

-To make special guidance for school headmasters, counsellors, teachers, student's families on the early identification of ADHD and comorbidities.

-To make special attention on the symptoms of ADHD and comorbid disorders in females, to try to detect these symptoms although might not be clear as those find in males.

-To make the required programs for parents helping them to be aware of number of children they want to get, and how increasing number of siblings might negatively affects the parenting efficacy in the family and therefore might elaborate symptoms of ADHD among siblings.

5.5 Recommendations to professionals and policy makers on the national and institutional level, especially ministry of education:

-To propose a program to the government and institutions for the psychoeducational awareness of ADHD and comorbid disorder on the level of parents, school headmasters, counsellors and teachers, to help in early identification of ADHD .

-To provide programs that can support families of ADHD and their children as well, either by providing individual or family therapy. Also to provide them with behavioural interventions that can help them adopt and control their children behaviors (therapeutic program).

-To provide individual plan for children with ADHD in schools and mental health institutes.

-To provide educational programs in schools and in special institutions that can help to minimise the deficiency of learning due to ADHD, and improve the academic performance.

-To provide programs for mothers and fathers of ADHD as supportive group therapy.

-To provide prevention programs for comorbidity such as depression, anxiety, drug addiction, conduct and antisocial behaviour.

-To make a special program among all the levels: school, families and consellors about the medical intervention with children of ADHD to deal with the misconception and the medical intervention especialy that this problem is organic and medication is essential in its treatment.

5.6 Suggestions to further studies:

-To study the attitude of parents toward ADHD and toward diagnosing one of their child with ADHD.

-To study prevalence of conduct disorder, oppositional defiant disorder among children and adolescents.

-To study the age of onset for the conduct behavior comorbid with ADHD.

-To study the effect of ADHD child in the family on parenting style as well as the family functioning and the marital relationship.

-To make a study that reveals effect of behavioural an medical intervention on ADHD children.

-To make a study that measures the academic improvement of ADHD child after an educational and medical intervention.

-To measure the risk of bullying or being a victim of bullying regarding ADHD child

-To make further studies regarding symptoms of ADHD in females.

-To study percentage of diagnosed ADHD children to undiagnosed, to know their attitudes toward psychopharmacological treatment and to find out the percentage of those under medication to those not.

-To study quality of diagnosing and intervention done in the institutions.

-To study the level of knowledge in the Palestinian family regarding ADHD and comorbid disorder.

-To study the level of knowledge and interventions to ADHD and comorbid disorders among school counsellor, teachers and headmaster.

-To study self-image, and self-esteem of ADHD children, as well as those with comorbid disorder.

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www.medifocus.com Attention Deficit Hyperactivity Disorder

Annexes

Appendix (1):

Name of judgements of the questionnaires:

Assist. Prof. Samah Jabr……..Al Quds University, Birzeit University

Prof. Ahmad Faheem Jabr…….Al Quds University

Dr Michell Sansur……..Bethlehem University

Dr Cairo Arafat……..Birzeit University

Dr Saheer Sabbah……..Al Quds University

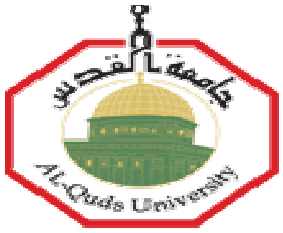
Dr Essam bannura…….Bethlehem Hospital

Dr Evona Amleh……..Bethlehem Hospital

Dr Mohamad Shaheen……..Birzeit University

Appendix (2): Questionnaire before judgment

بسم الله الرحمن الرحيم



حضرة الدكتور .....المحترم،

تقوم الباحثه شيرين عابدين قواسمي بإجراء دراسه بعنوان (Prevalence of Attention Deficit /Hyperactivity Disorder among Fifth Grade Children In Bethlehem Schools)

وستقوم باستخدام استبانه لمقياس اضطراب زيادة الحركه و/ أو قلة الانتباه لدى الأطفال (صورة التقييم المنزليه). وتود تحكيم الاستبانه المستخدمه قبل ان تقوم بتطبيقها على عينة الدراسه.

تتكون الأداة من اربع وخمسون عبارة تختص كل منهما في البيئه المنزليه التي يعيش فيها الطالب، ويجاب عليها من قبل امهات العينه الدراسيه بوضع اشاره عند دائما/ احيانا/ نادرا/ ابدا .

الابعاد التي تقيسها الاداه في الصوره المنزليه كالآتي:

1- **تشتت الانتباه:** ويتكون من ثماني وعشرون فقره (1-28) .
2- **فرط الحركه:** ويتكون من ستة عشر فقره (29-44).
3- **السلوك الاندفاعي:** ويتكون من عشرة فقرات (45-54).

وستقوم الباحثه أيضا باستخدام استبانه لتقييم سلوك الطفل (Conduct Behaviour)و هي مقياس ايبرج لسلوك الطفل، حيث قامت الباحثه بترجمة المقياس.

وبناء على ذلك نطلب من حضرتكم التكرم بتحكيم هذه الاستبانه مع اعطاء اقتراحاتكم للتصحيح في حال وجدتم عبارات غير ملائمه والتي قد تحتاج الى الحذف أو التصحيح.

علما بأن متغيرات الدراسه هي:

المتغيرات التابعه:

- اضطراب الحركه المفرطه وقلة الانتباه.
- اضطراب السلوك.

المتغيرات المستقله:

وهي جميع العوامل المبينه في صفحة المعلومات الأوليه في الاستبانه الأولى.

وتفضلوا بقبول فائق الاحترام والتقدير

الباحثة شيرين عابدين قواسمي

الدراسات العليا/ كلية الصحةالعامة

برنامج الصحة النفسيةالمجتمعية

جامعة القدس

المعلومات الأولية

الرجاء وضع دائره حول رمز الاجابه المناسبه لك أو الاجابه حسب المطلوب:

معلومات عامه عن الأم والطفل/ة والأسرة :

1- جنس الطالب: أ- ذكر ب- انثى

2- نوع المدرسه: أ- خاصه ب- حكوميه ج- وكاله

3- معدل التحصيل الأكاديمي للطالب:_____

4- عمل الام: أ- تعمل ب- ربة منزل

5- عمر الأم:_____

6- تعليم الأم: أ- أميه ب- اعدادي ج- ثانوي د-جامعي فأكثر

7- الحاله الاجتماعيه للأم: أ- متزوجه وتعيش مع الزوج ب- مطلقه ج- أرمله
د-متزوجه وتعيش لوحدها

8- صلة القرابه بالزوج: أ- لا يوجد ب- درجه أول ج- درجه ثانيه د- درجه ثالثه

9-الدخل الشهري للاسره بالشيكل:_____

10- مكان السكن: أ- مدينه ب- قريه ج- مخيم

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	افتراح التعديل
	تشتت الانتباه					
1.	لا يستطيع تركيز انتباهه على شيء محدد لمده طويله(تزيد عن ثلاث دقائق)					
2.	يشتت انتباهه بسهوله					
3.	يجد صعوبه في عملية الإصغاء					
4.	يبدو عليه عند الحديث معه وكآنه لا يسمع					
5.	لا يستطيع متابعة الحوار أو الحديث الذي يدور معه أو حوله					
6.	يجد صعوبه في عملية الفهم وبخاصه المعلومات الجديده					
7.	لا يستطيع فهم جميع المعلومات التي يسمعها					
8.	يجد صعوبه في التعرف على أوجه الشبه والاختلاف بين الأشياء					
9.	ينسى التعليمات ويحتاج إلى تذكيره بها					
10.	ينسى في المنزل بعض الأشياء التي يحتاج إليها في المدرسه					
11.	ينسى في المدرسه بعض أدواته وأغراضه التي أخذها معه في الصباح					
12	ينسى عمل الأشياء المعتادة التي يجب أن يقوم بها يوميا					
13.	يخطئ في عمل الأشياء التي سبق له أن تعلمها					

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	اقتراح التعديل
.14	لا يستطيع الانتهاء من العمل الذي يقوم به بدون مساعدة الآخرين					
.15	يتردد كثيرا في اتخاذ أي قرار حتى ولو كان بسيطا					
.16	لا يقوم بواجباته المنزليه أو أعماله الصيفيه بشكل كامل					
.17	تمتلئ أعماله المدرسيه بالأخطاء					
.18	تمتلئ أعماله الدراسيه بالمحو والشطب					
.19	يكتب بطريقه غير مرتبه					
.20	يقفز في الكتابه تاركا بعض السطور أو الجمل بدون كتابه					
.21	يخطئ في الكتابه حتى ولو كان ينقل من كتاب أمامه					
.22	يخطئ في القراءه حيث يحذف أو يضيف بعض الحروف أو الكلمات					
.23	يقفز في القراءه تاركا بعض السطور والجمل بدون قراءه					
.24	يشرد ذهنه أثناء حل واجباته المنزليه وفي استذكار دروسه					
.26	لا يستطيع نقل الرسائل الشفهيه من وإلى الآخرين					
.27	عندما يتحدث عن شيء أو واقعه فإن حديثه يكون ناقصا وغير مترابط					
.28	يبتعد عن المشاركه في الأعمال التي تحتاج إلى تفكير					

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	اقتراح التعديل
	فرط الحركه					
.29	كثير الحركه لا يستقر في مكانه					
.30	يتململ في جلسته ويتلوى بيديه ورجليه					
.31	يظل يمشي ذهابا وإيابا في المكان الذي يوجد فيه بدون سبب أو هدف واضح					
.32	يحدث صخبا وضوضاء مزعجه في المكان الذي يوجد فيه					
.33	يتحدث بكثره					
.34	يتحدث أثناء حديث الآخرين					
.35	يتحدث في الأوقات التي تحتاج إلى هدوء					
.36	يتدخل في لعب الأطفال الآخرين (أشقاءه، أو أقرباءه، أو جيرانه) على غير رغبة منه					
37	يعبث في الأشياء التي تقع في متناول يديه					
.38	يخطف لعب وأشياء الأطفال الآخرين					
.39	يكثر من الحركه (يجري، يرقص، يقفز) أثناء تنقله من مكان الى آخر					
.40	يتسلق الأسياء العموديه مثل الأعمده والأشجار في المكان الذي يتواجد فيه					
.41	يجعل المكان الذي يتواجد فيه مبعثرا					
.42	تخلوا أعماله من النظام والترتيب					

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	اقتراح التعديل
.43	لا يضع الأدوات التي استخدمها في مكانها الصحيح بعد انتهائه من العمل الذي يقوم به					
.44	يصعب السيطره على سلوكه عندما يخرج مع الأسره					
	السلوك الاندفاعي					
.45	يبدأ العمل قبل أن يتلقى التعليمات					
.46	متسرع في استجاباته					
.47	لا يستطيع الانتظار في دوره في الألعاب أو المواقف الاجتماعيه (عجول)					
48	يستخدم الحيل مثل البكاء الشديد والصراخ العالي لتحقيق مطالبه في الحال					
.49	لا يستطيع التحكم في سلوكه الاندفاعي لأنه ضيق الصدر وشديد الانفعال					
.50	يثور ويغضب فجأه (ينفعل بسهوله)					
.51	يريد أن يكون نصيبه في كل شيء أكبر من نصيب الآخرين					
.52	يقاطع والده (أو والدته) عندما يكون مشغولا في عمل أو حديث مع الآخرين					
.53	يرفض اتباع التعليمات					
.54	يقوم بسلوكيات تعرض حياته للخطر					

مقياس آيبرج لسلوك الطفل

أمامك سلسله من العبارات التي تصف سلوك الطفل. الرجاء(1) وضع دائره حول الرقم الذي يصف عدد المرات الذي يقوم بها الطفل بالسلوك في الوقت الراهن. ومن ثم (2) وضع دائره حول "نعم" أو "لا" للاشاره الى ما اذا كان السلوك يسبب مشكله حاليه لديكم.

1 = أبدا حتى 7= دائما هل هذه مشكله الآن ؟ نعم لا

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	اقتراح التعديل
-1	يتلكأ في ارتداء ملابسه.					
-2	يتلكأ أو يتباطأ في تناول الطعام					
-3	آداب تناول الطعام لديه ضعيفه					
-4	يرفض تناول الطعام المقدم					
-5	يرفض القيام بالأعمال عندما يطلب منه					
-6	بطيء في الاستعداد للنوم					
-7	يرفض الذهاب الى الفراش في الوقت المحدد					
-8	لا ينصاع لقواعد البيت من تلقاء نفسه					
-9	يرفض الانصياع حتى يتم تهديده و/ عقابه					
-10	يقوم بالتحدي عندما يطلب منه عمل شيء					
-11	يجادل والديه حول القواعد					
-12	يغضب عندما لا ينفذ ما يريد					
-13	لديه نوبات من الغضب					
-14	يخاطب الكبار بوقاحه					
-15	يكثر الشكوى والتعبير عن الألم (يئن)					
-16	يبكي بسهوله					
-17	يهتف و يصرخ					
-18	يضرب والديه					

الرقم	سلوك الطفل	تصلح	لا تصلح	تنتمي للبعد	لا تنتمي للبعد	اقتراح التعديل
19-	يدمر الألعاب أو حاجات الآخرين					
20-	لا يبالي للألعاب أو لحاجات الآخرين					
21-	يسرق					
22-	يكذب					
23-	يثير أو يستفز الأطفال					
24-	يتشاجر كلاميا مع أصحابه من جيله					
25-	يتشاجر كلاميا مع اخوانه وأخواته					
26-	يتشاجر جسديا مع أصحابه من جيله					
27-	يتشاجر جسديا مع اخوانه وأخواته					
28-	يسعى دائما للفت الانتباه					
29-	يقاطع الآخرين					
30-	يتشتت بسهوله					
31-	لديه مدى انتباه قصير					
32-	يخفق في انهاء المهام أو المشاريع					
33-	يجد صعوبه في تسلية نفسه بنفسه					
34-	يجد صعوبه في التركيز على شيء واحد					
35-	لديه فرط نشاط أو لا يهدأ					
36-	يبلل فراشه					

Appendix (3): Questionnaire after judgment.

المعلومات الأوليه

الرجاء وضع علامة( ) أمام الاجابة المناسبة لك أو الاجابة على السؤال حسب المطلوب:

معلومات عامه عن المدرسة، الطفل/ة ، الأم، الأب والأسرة :

1- **نوع المدرسة**: أ- خاصة( ) ب- حكومية( ) ج- وكالة( )

2- **جنس الطالب**: أ- ذكر( ) ب- انثى( )

3- **عمر الأم**:_____

4- **الحالة الاجتماعية الحالية للأم**: أ- تعيش مع الزوج ( ) ب- مطلقة( )

ج-أرملة( ) د-تعيش وحدها (منفصلة) ه- أخرى حدديها_____

5 - **عمل الام**: أ- تعمل( ) ب- ربة منزل ( )

6-**تعليم الأم**: أ- أمية( ) ب-ابتدائي( ) ج- اعدادي( ) د- ثانوي( )

ه-جامعي فأكثر( )

7-**كم ساعة في اليوم تقضي الأم وقتاً مع الطفل**:_____

8- **صلة القرابة بالزوج**:

أ- لا يوجد( ) ب- درجة أولى(مثل ابن/ بنت عم)( )

ج- درجه ثانية(ابن/بنت عم الوالد/ الوالدة ( ) د- درجة ثالثة(قرابة بعيدة)( )

9- مكان سكن الاسرة: أ- مدينة( ) ب- قرية( ) ج- مخيم( )

10- **معدل الدخل الشهري للاسرة بالشيكل**:_____

أمامك سلسلة من العبارات التي تصف سلوك طفلك، أرجو منك أن تقرئيها جيداً ومن ثم التحديد بدقة درجة انطباق كل منها على الطفل وذلك بوضع اشارة(✓) في الخانه الأكثر انطباقا على طفلك.

الرقم	سلوك الطفل	دائماً	أحياناً	نادراً	أبداً
.1	لا يستطيع تركيز انتباهه على شيء محدد لمدة طويلة(تزيد عن ثلاث دقائق)				
.2	يشتت انتباهه بسهولة				
.3	يجد صعوبة في عملية الإصغاء				
.4	يبدو عليه عند الحديث معه وكأنه لا يسمع				
.5	لا يستطيع متابعة الحوار أو الحديث الذي يدور معه أو حوله				
.6	يجد صعوبة في عملية الفهم وبخاصة المعلومات الجديدة				
.7	لا يستطيع فهم معظم المعلومات التي يسمعها أو يستقبلها				
.8	يجد صعوبة في التعرف على أوجه الشبه والاختلاف بين الأشياء				
.9	ينسى التعليمات ويحتاج إلى تذكيره بها				
.10	ينسى بشكلمتكرر في المنزل بعض الأشياء التي يحتاج إليها في المدرسة				
.11	ينسى بشكل متكرر في المدرسة بعض أدواته وأغراضه التي أخذها معه في الصباح				
.12	ينسى عمل الأشياء المعتادة التي يجب أن يقوم بها يومياً				
.13	يخطئ في عمل الأشياء التي سبق له أن تعلمها				
.14	لا يستطيع الانتهاء من العمل الذي يقوم به بدون مساعدة الآخرين				
.15	يتردد كثيرا في اتخاذ أي قرار حتى ولو كان بسيطا				
.16	لا ينهي واجباته المنزلية أو أعماله الصفيةالتي بدأها				
.17	تمتلئ أعماله المدرسية بالأخطاء				
.18	تمتلئ واجباته الدراسية بالمحو والشطب				
.19	يكتب بطريقة غير مرتبة				
.20	يقفز في الكتابة تاركا بعض السطور أو الجمل بدون كتابة				
.21	يخطئ في الكتابة حتى ولو كان ينقل من كتاب أمامه				
.22	يخطئ في القراءة حيث يحذف أو يضيف بعض الحروف أو الكلمات				
.23	يقفز في القراءة تاركا بعض السطور والجمل بدون قراءة				
.24	يشرد ذهنه أثناء حل واجباته المنزلية واستذكار دروسه				
.25	يحول الكلام الذي يسمعه الى صيغة سؤال أو يردد بعض مقاطعه				
.26	لا يستطيع نقل الرسائل الشفهية من وإلى الآخرين				
.27	عندما يتحدث عن شيء أو واقعة فإن حديثه يكون ناقصا وغير مترابط				

الرقم	سلوك الطفل	دائماً	أحياناً	نادراً	أبداً
28.	يبتعد عن المشاركة في الأعمال التي تحتاج إلى تفكير				
29.	كثير الحركة لا يستقر في مكانه				
30.	يتململ في جلسته ويتلوى بيديه ورجليه				
31.	يظل يمشي ذهاباً وإياباً في المكان الذي يوجد فيه بدون سبب أو هدف واضح				
32.	يحدث صخباً وضوضاء مزعجة في المكان الذي يوجد فيه				
33.	يتحدث بكثرة				
34.	يتحدث أثناء حديث الآخرين				
35.	يتحدث في الأوقات التي تحتاج إلى هدوء				
36.	يتدخل في لعب الأطفال الآخرين (أشقائه، أو أقربائه، أو جيرانه)				
37.	يعبث في الأشياء التي تقع في متناول يده				
38.	يخطف لعب وأشياء الأطفال الآخرين				
39.	يكثر من الحركة (يجري، يرقص، يقفز) أثناء تنقله من مكان الى آخر				
40.	يتسلق الأشياء العمودية مثل الأعمدة والأشجار في المكان الذي يتواجد فيه				
41.	يجعل المكان الذي يتواجد فيه مبعثراً				
42.	تخلوأعماله من النظام والترتيب				
43.	لا يضع الأدوات التي استخدمها في مكانها الصحيح بعد انتهائه من العمل الذي يقوم به				
44.	يصعب السيطرة على سلوكه عندما يخرج مع الأسرة				
45.	يبدأ العمل قبل أن يتلقى التعليمات				
46.	متسرع في استجاباته				
47.	لا يستطيع الانتظار في دوره في الألعاب أو المواقف الاجتماعية (متسرع)				
48.	يستخدم الحيل مثل البكاء الشديد والصراخ العالي لتحقيق مطالبه في الحال				
49.	لا يستطيع التحكم في سلوكه الاندفاعي فيتصرف دون تفكير بالنتائج				
50.	يثور ويغضب فجأة (ينفعل بسهولة)				
51.	يريد أن يكون نصيبه في كل شيء أكبر من نصيب الآخرين				
52.	يقاطع والده (أو والدته) عندما يكون مشغولا في عمل أو حديث مع الآخرين				
53.	يرفض اتباع التعليمات				
54.	يقوم بسلوكيات تعرض حياته للخطر				

أمامك سلسلة من العبارات التي تصف سلوك الطفل. الرجاء وضع (✓) عند الرقم الذي يصف عدد المرات الذي يقوم بها الطفل بالسلوك في الوقت الراهن من درجة1-7، حيث يمثل الرقم (1) عدم قيام الطفل بالسلوك نهائياً، والرق (4) يمثل قيام الطفل أحياناً بالسلوك والرقم (7) يمثل قيام الطفل دائما بالسلوك. ومن ثم وضع (✓) عند "نعم" أو "لا" للاشارة الى ما اذا كان السلوك يسبب مشكلة حالية لديكم.

الرقم	سلوك الطفل	(1)	(2)	(3)	(4)	(5)	(6)	(7)	هل يسبب السلوك مشكله لديكم	
									نعم	لا
1-	يتباطأ في ارتداء ملابسه.									
2-	يتلكأ أو يتباطأ في تناول الطعام									
3-	آداب تناول الطعام لديه ضعيفه									
4-	يرفض تناول الطعام المقدم له									
5-	يرفض القيام بالأعمال عندما يطلب منه ذلك									
6-	بطيء في الاستعداد للنوم									
7-	يرفض الذهاب الى الفراش في الوقت المحدد									
8-	لا ينصاع لقواعد البيت من تلقاء نفسه									
9-	يرفض الانصياع حتى يتم تهديده أو/ ومعاقبته									
10-	يقوم بالتحدي عندما يطلب منه عمل شيء									
11-	يجادل والديه حول القواعد									
12-	يغضب عندما لا ينفذ ما يريد									
13-	لديه نوبات من الغضب									
14-	يخاطب الكبار بوقاحه									
15-	يكثر الشكوى والتعبير عن الألم (يئن)									
16-	يبكي بسهوله									
17-	يتذمر و يصرخ									
18-	يضرب والديه									
19-	يدمر الألعاب أو حاجات الآخرين									
20-	مهمل بالألعاب والحاجات الأخرى									
21-	يسرق									
22-	يكذب									
23-	يغيظ أو يستثير الأطفال الآخرين									
24-	يتشاجر كلاميا مع الأصحاب من أبناء جيله									
25-	يتشاجر كلاميا مع اخوانه وأخواته									
26-	يتشاجر جسديا مع الأصحاب من أبناء جيله									
27-	يتشاجر جسديا مع اخوانه وأخواته									
28-	يسعى دائما للفت الانتباه									

الرقم	سلوك الطفل	(1)	(2)	(3)	(4)	(5)	(6)	(7)	هل يسبب السلوك مشكله لديكم	
									نعم	لا
29-	يقاطع الآخرين									
30-	يتشتت بسهوله									
31-	لديه مدى انتباه قصير									
32-	يخفق في انهاء المهام أو المشاريع									
33-	يجد صعوبه في تسلية نفسه بنفسه									
34-	يجد صعوبه في التركيز على شيء واحد									
35-	لديه فرط نشاط أو لا يهدأ									
36-	يبلل فراشه									

Appendix (4): EYBERG CHILD BEHAVIOR INVENTORY

EYBERG CHILD BEHAVIOR INVENTORY

Rater's Name: _____
Relationship to Child: _____
Date of rating: _____
Child's Name: _____
Child's Age: _____
Birthdate: _____

Directions: Below is a series of phrases that describes children's behavior. Please (1) circle the number describing how often the behavior currently occurs with your child and (2) circle either "yes" or "no" to indicate whether the behavior is currently a problem.

Never	Seldom	Sometimes	Often	Always	-	Is this a Problem Now?								
				1	2	3	4	5	6	7	Yes	No
1. Dawdles in getting dressed				1	2	3	4	5	6	7	Yes	No
2. Dawdles or lingers at mealtime				1	2	3	4	5	6	7	Yes	No
3. Has Poor table manners				1	2	3	4	5	6	7	Yes	No
4. Refuses to eat food presented				1	2	3	4	5	6	7	Yes	No
5. Refuses to do chores when asked				1	2	3	4	5	6	7	Yes	No
6. Slow in getting ready for bed				1	2	3	4	5	6	7	Yes	No
7. Refuses to go to bed on time				1	2	3	4	5	6	7	Yes	No
8. Does not obey house rules on his own				1	2	3	4	5	6	7	Yes	No
9. Refuses to obey until threatened w/ punishment				1	2	3	4	5	6	7	Yes	No
10. Acts defiant when told to do something				1	2	3	4	5	6	7	Yes	No
11. Argues with parents about rules				1	2	3	4	5	6	7	Yes	No
12. Gets angry when doesn't get own way				1	2	3	4	5	6	7	Yes	No
13. Has temper tantrums				1	2	3	4	5	6	7	Yes	No
14. Sasses adults				1	2	3	4	5	6	7	Yes	No
15. Whines				1	2	3	4	5	6	7	Yes	No
16. Cries easily				1	2	3	4	5	6	7	Yes	No
17. Yells or screams				1	2	3	4	5	6	7	Yes	No
18. Hits parents				1	2	3	4	5	6	7	Yes	No
19. Destroys toys or other objects				1	2	3	4	5	6	7	Yes	No
20. Is careless with toys and other objects				1	2	3	4	5	6	7	Yes	No
21. Steals				1	2	3	4	5	6	7	Yes	No
22. Lies				1	2	3	4	5	6	7	Yes	No
23. Teases or provokes other children				1	2	3	4	5	6	7	Yes	No
24. Verbally fights with friends his own age				1	2	3	4	5	6	7	Yes	No
25. Verbally fights with brothers and sisters				1	2	3	4	5	6	7	Yes	No
26. Physically fights with friends				1	2	3	4	5	6	7	Yes	No
27. Physically fights with brothers and sisters				1	2	3	4	5	6	7	Yes	No
28. Constantly seeks attention				1	2	3	4	5	6	7	Yes	No

29. Interrupts	1	2	3	4	5	6	7	Yes	No
30. Is easily distracted	1	2	3	4	5	6	7	Yes	No
31. Has short attention span	1	2	3	4	5	6	7	Yes	No
32. Fails to finish tasks or projects	1	2	3	4	5	6	7	Yes	No
33. Has difficulty entertaining himself alone	1	2	3	4	5	6	7	Yes	No
34. Has difficulty concentrating on one thing	1	2	3	4	5	6	7	Yes	No
35. Is overactive or restless	1	2	3	4	5	6	7	Yes	No
36. Wets the bed	1	2	3	4	5	6	7	Yes	No

Appendix(5): Results of the test (LSD) or comparisons between the means of the responses of the sample according to the variable of average:

Dimension	Variables		Differences in means	Level of Sig.
Inattention	Lower than 50	From 50-60	0.12123	0.187
		61-lower than 70	0.42602	0.001
		70-lower than 80	0.57832	0.001
		80-lower than 90	0.80485	0.001
		From 90 and above	0.93058	0.001
	From 50-60	Lower than 50	0.12123-	0.187
		61-lower than 70	0.30479	0.001
		70-lower than 80	0.45709	0.001
		80-lower than 90	0.68362	0.001
		From 90 and above	0.80935	0.001
	61-lower than 70	Lower than 50	0.42602-	0.001
		From 50-60	0.30479-	0.001
		70-lower than 80	0.15230	0.077
		80-lower than 90	0.37883	0.001
		From 90 and above	0.50456	0.001
	70-lower than 80	Lower than 50	0.57832-	0.001
		61-lower than 70	0.45709-	0.001
		70-lower than 80	0.15230-	0.077
		80-lower than	0.22653	0.003

		90		
		From 90 and above	0.35226	0.001
	80-lower than 90	Lower than 50	0.80485-	0.001
		61-lower than 70	0.68362-	0.001
		70-lower than 80	0.37883-	0.001
		70-lower than 80	0.22653-	0.003
		From 90 and above	0.12573	0.085
	From 90 and above	Lower than 50	0.93058-	0.001
		61-lower than 70	0.80935-	0.001
		70-lower than 80	0.50456-	0.001
		70-lower than 80	0.35226-	0.001
		80-lower than 90	0.12573-	0.085
Hyperactivity	Lower than 50	From 50-60	0.12005	0.302
		61-lower than 70	0.28571	0.011
		70-lower than 80	0.33605	0.002
		80-lower than 90	0.49276	0.001
		From 90 and above	0.64954	0.001
	From 50-60	Lower than 50	0.12005-	0.302
		61-lower than 70	0.16567	0.154
		70-lower than 80	0.21600	0.056
		80-lower than	0.37272	0.001

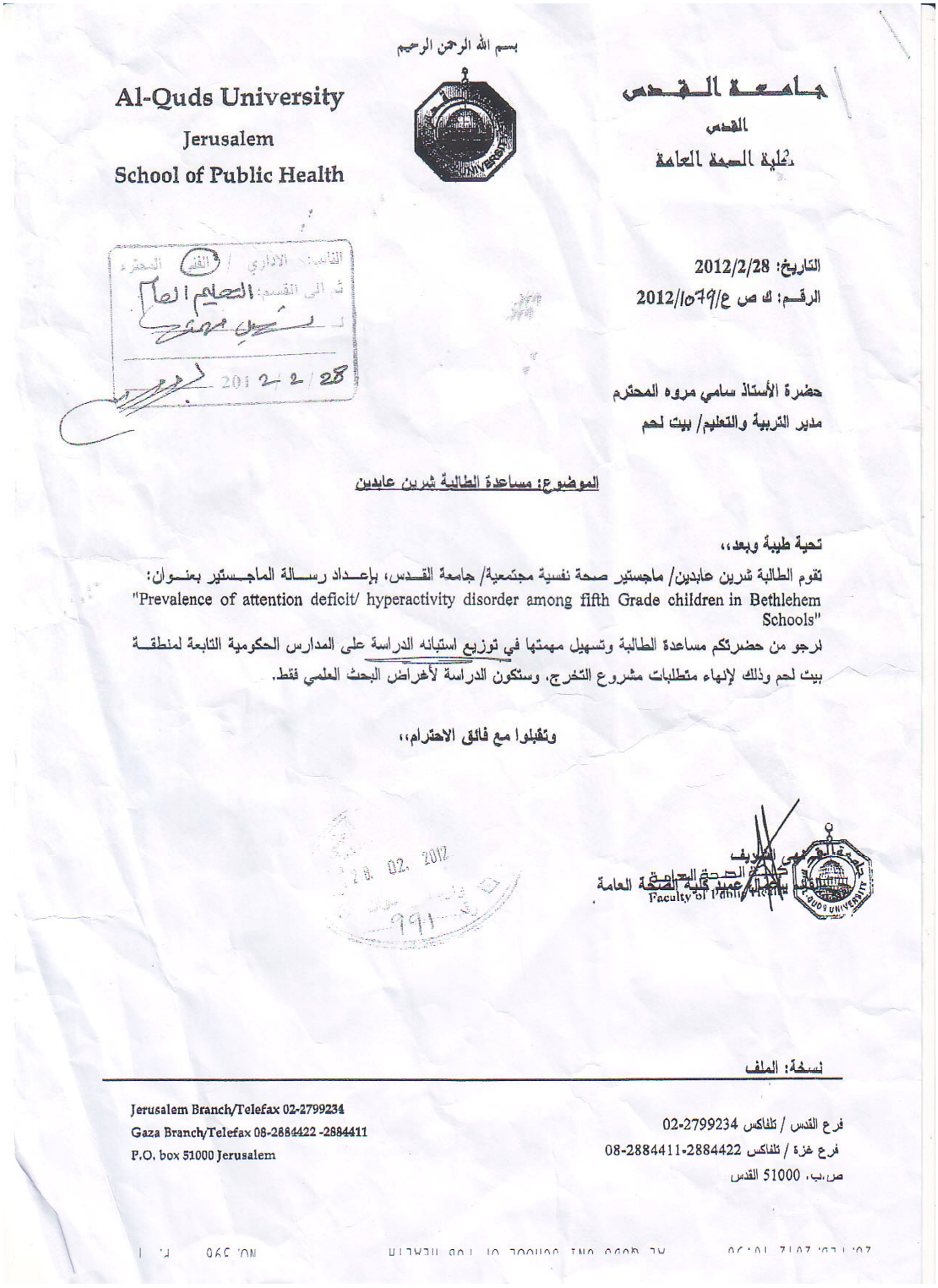
		90		
		From 90 and above	0.52949	0.001
	61-lower than 70	Lower than 50	0.28571-	0.011
		From 50-60	0.16567-	0.154
		70-lower than 80	0.05033	0.644
		80-lower than 90	0.20705	0.042
		From 90 and above	0.36383	0.001
	70-lower than 80	Lower than 50	0.33605-	0.002
		61-lower than 70	0.21600-	0.056
		70-lower than 80	0.05033-	0.644
		80-lower than 90	0.15671	0.108
		From 90 and above	0.31349	0.002
	80-lower than 90	Lower than 50	0.49276-	0.001
		61-lower than 70	0.37272-	0.001
		70-lower than 80	0.20705-	0.042
		70-lower than 80	0.15671-	0.108
		From 90 and above	0.15678	0.090
	From 90 and above	Lower than 50	0.64954-	0.001
		61-lower than 70	0.52949-	0.001
		70-lower than 80	0.36383-	0.001
		70-lower than 80	0.31349-	0.002

		80-lower than 90	0.15678-	0.090
Impulsivity	Lower than 50	From 50-60	0.04922	0.689
		61-lower than 70	0.28286	0.018
		70-lower than 80	0.35107	0.002
		80-lower than 90	0.46857	0.001
		From 90 and above	0.62940	0.001
	From 50-60	Lower than 50	0.04922-	0.689
		61-lower than 70	0.23364	0.058
		70-lower than 80	0.30185	0.012
		80-lower than 90	0.41935	0.001
		From 90 and above	0.58018	0.001
	61-lower than 70	Lower than 50	0.28286-	0.018
		From 50-60	0.23364-	0.058
		70-lower than 80	0.06821	0.555
		80-lower than 90	0.18571	0.084
		From 90 and above	0.34654	0.002
	70-lower than 80	Lower than 50	0.35107-	0.002
		61-lower than 70	0.30185-	0.012
		70-lower than 80	0.06821-	0.555
		80-lower than 90	0.11750	0.255
		From 90 and	0.27832	0.009

		above		
	80-lower than 90	Lower than 50	0.46857-	0.001
		61-lower than 70	0.41935-	0.001
		70-lower than 80	0.18571-	0.084
		70-lower than 80	0.11750-	0.255
		From 90 and above	0.16082	0.100
	From 90 and above	Lower than 50	0.62940-	0.001
		61-lower than 70	0.58018-	0.001
		70-lower than 80	0.34654-	0.002
		70-lower than 80	0.27832-	0.009
		80-lower than 90	0.16082-	0.100
Total ADHD	Lower than 50	From 50-60	0.10754	0.244
		61-lower than 70	0.35794	0.001
		70-lower than 80	0.46445	0.001
		80-lower than 90	0.65011	0.001
		From 90 and above	0.79153	0.001
	From 50-60	Lower than 50	0.10754-	0.244
		61-lower than 70	0.25039	0.007
		70-lower than 80	0.35691	0.001
		80-lower than 90	0.54256	0.001
		From 90 and	0.68399	0.001

		above		
	61-lower than 70	Lower than 50	0.35794-	0.001
		From 50-60	0.25039-	0.007
		70-lower than 80	0.10651	0.219
		80-lower than 90	0.29217	0.001
		From 90 and above	0.43360	0.001
	70-lower than 80	Lower than 50	0.46445-	0.001
		61-lower than 70	0.35691-	0.001
		70-lower than 80	0.10651-	0.219
		80-lower than 90	0.18565	0.017
		From 90 and above	0.32708	0.001
	80-lower than 90	Lower than 50	0.65011-	0.001
		61-lower than 70	0.54256-	0.001
		70-lower than 80	0.29217-	0.001
		70-lower than 80	0.18565-	0.017
		From 90 and above	0.14143	0.054
	From 90 and above	Lower than 50	0.79153-	0.001
		61-lower than 70	0.68399-	0.001
		70-lower than 80	0.43360-	0.001
		70-lower than 80	0.32708-	0.001
		80-lower than 90	0.14143-	0.054

Appendix (6): Letters to facilitate the missions of the researcher:



بسم الله الرحمن الرحيم

Al-Quds University
Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2012/2/28
الرقم: ك ص ع/1079/2012

حضرة الأستاذ سامي مروه المحترم
مدير التربية والتعليم/ بيت لحم

الموضوع: مساعدة الطالبة شرين عابدين

تحية طيبة وبعد،،

تقوم الطالبة شرين عابدين/ ماجستير صحة نفسية مجتمعية/ جامعة القدس، بإعداد رسالة الماجستير بعنوان:
"Prevalence of attention deficit/ hyperactivity disorder among fifth Grade children in Bethlehem Schools"
نرجو من حضرتكم مساعدة الطالبة وتسهيل مهمتها في توزيع استبانه الدراسة على المدارس الحكومية التابعة لمنطقة بيت لحم وذلك لإنهاء متطلبات مشروع التخرج، وستكون الدراسة لأغراض البحث العلمي فقط.

وتقبلوا مع فائق الاحترام،،

عميد كلية الصحة العامة
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التاريخ: 2012/1/28
الرقم: ك ص ع/ [illegible]/2012

حضرة الدكتور محمد الريماوي المحترم
المدير العام للصحة المدرسية/ وزارة التربية والتعليم

الموضوع: مساعدة الطالبة شرين عابدين

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د. أسمى الإمام
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بسم الله الرحمن الرحيم

Palestinian National Authority
Ministry of Education & HE
Directorate of Education\Bethlehem

السلطة الوطنية الفلسطينية
وزارة التربية والتعليم العالي
مديرية التربية والتعليم/بيت لحم

الرقم: 688 /28/ 30
التاريخ:28 /2/2012 م
الموافق:6/4/1433هـ

مديري ومديرات المدارس الحكومية المحترمين

تحية طيبة وبعد،،،

الموضوع:تسهيل مهمة

لا مانع من تسهيل مهمة الطالبة **شرين عابدين** والسماح لها بتوزيع استبانتها بعنوان " Prevalence of attention deficit /hyperactivity disorder among fifth Grade children in Beth lehehem Schools" على طلبة الصف الخامس في مدرستكم على ألا يؤثر ذلك على سير العملية التعليمية.

مع الاحترام

أ.سامي مروّه
مدير التربية والتعليم

التعليم العام
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التاريخ: 2012/1/28
الرقم: ك ص ع/1036/2012

حضرة الدكتور أمية خماش المحترم
مدير الخدمات الصحية/ وكالة الغوث

الموضوع: مساعدة الطالبة شرين عابدين

تحية طيبة وبعد،،

تقوم الطالبة شرين عابدين/ ماجستير صحة نفسية مجتمعية/ جامعة القدس، بإعداد رسالة الماجستير بعنوان:
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وتقبلوا مع فائق الاحترام،،

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عميدة كلية الصحة العامة

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