University of Milano –Bicocca

Ph.D. thesis

The diagnosis of ADHD in Israel and in Palestine: Stereotype, Prejudice and the Influence of the school system polices

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Science of Formation and Communication

Scienze della Formazione e della Comunicazione

2015

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I. Acknowledgments

I would like to express my gratitude to many people who have helped to bring this research to fruition. The thesis would not have come to a successful completion, without the help I have received from them.

First, I am so deeply grateful for Prof. ssa Laura Formenti for her nobility, I am very grateful for her motivation, enthusiasm, and immense knowledge in the field.

Next, I would like to gratefully and sincerely thank Dr. Guido Veronese for his guidance, understanding, patience, and most importantly, he has always made himself available to clarify my doubts despite his busy schedules.

I would also express my appreciation to Prof. Francesco Paolo Colucci for his help, professionalism, valuable guidance and support throughout this research. He has been actively interested in my work and has always been available to advise me

Finally, I must express my very profound gratitude to my husband, Dr. Mahmud Said, for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without him. You have been not only my husband but also a tremendous mentor for me. I would like to thank you for encouraging my research and for allowing me to grow as a research scientist. Your advice on both research as well as on my career have been invaluable. Truly thank you.

At the end, I would like to thank all the people who contributed in some way to the accomplishment of this thesis.

II. Abstract

Attention Deficit Hyperactivity Disorder, aka ADHD is an expression minted and coined to define a neurodevelopmental disorder that is characterized by a deficient or lacking in the levels of inattention, disorganization, and /or hyperactivity-impulsivity. It has the distinction of being both the most extensively studied mental disorder among children, and the most controversial. "Hyperactivity-impulsivity entails over activity, fidgeting, inability to stay seated or still, intruding into other people's activities, and inability to wait—symptoms that are excessive for age or developmental level. In childhood, ADHD frequently overlaps with disorders that are often considered to be "externalizing disorders," such as oppositional defiant disorder and conduct disorder. ADHD often persists into adulthood, with resultant impairments of social, academic, and occupational functioning" (DSM-5, 2013)

The exact cause of this order is yet to be determined; however, numerous factors are believed to have an effect on this disorder. These factors include familiar, biological, social, and nutritional factors. Nevertheless, we believe that it all starts with the diagnosis process, if the disorder are well diagnosed on time, then an early intervention may be more effective. Therefore, in the present study we had decided to examine the diagnosis process of ADHD. The participants of the research were divided into two groups: Palestinians in the West Bank and Israeli Arabs. The current search has been carried out in two parts. The first part was the preliminary study or the qualitative part, its main objective was to extract salient themes in the diagnosis process of ADHD via thematic content analysis using a grounded theory methodology (Anderson, 2004). Participants were involved in a number of focus groups (N= 6) and key-informants (N= 20) and have been interviewed. Results showed that the three groups had shared common themes; firstly, the factors of ADHD that included social factors, familial factors, biological factors, and nutritional factors. Secondly, the diagnosis of ADHD that included the diagnosis reliability of ADHD. Thirdly the treatment of ADHD that contained medical treatment, behavioral treatment, the school's role, and the parents' role. Finally the commonality of ADHD. Whence, the second part of the study or the quantitative part came, thus, the main objective was to identify the dimensions of the diagnosis of ADHD in both Israel and Palestine; stereotype, prejudice and the influence of the school system polices. Using a cross-sectional design (N=324 participants), results showed that familial factors have a more significant effect on ADHD in the West Bank than in Israel. Second, nutritional factors have a more significant effect on ADHD in Israel than in the West Bank. Third, the current diagnosis ways for ADHD are fully reliable, both in Israel and in the West Bank. Fourth, medical treatment for ADHD is more common in Israel than in the West Bank. Fifth, schools have a more significant role in dealing with ADHD in Israel than in the West Bank. Sixth, parents have a more significant role on ADHD in Israel than in the West Bank. Finally, ADHD is more common nowadays than it was in the past both in Israel and in the West Bank.

III. Introduction

ADHD is a neurodevelopmental disorder, which stems from a combination of genetic factors that have a significant effect in the development of the disorder, and environmental factors (such as drug use or heavy maternal smoking during pregnancy). Typical clinical signs of this disorder can occur as young as three or four years old. Studies have shown that ADHD is common among 5% - 10% of all children in school age and among boys is three times more common than among girls (Visser, et. al, 2015).

Many studies over the last decade have also shown a steady increase in diagnosing children with ADHD. According to Frigerioa, Montalia and Fineb (2013) about 5.2 % of children are considered to meet the current diagnostic criteria for ADHD worldwide .ADHD in children is expressed in bad judgment concerning the proper behavior of social and /or emotional situation by the ADHD individual. Furthermore the disorder often characterized by restlessness, lack of discipline, lack of concentration, lack of will and ability to complete tasks, difficulty to obey the laws and the inability to assess the dangers to oneself or to others (Farrelly, 2001).

There are several potential explanations for this increase, a legitimate rise in the incidence of ADHD, broader awareness of the disorder, better detection of ADHD cases or improved access to health resources. Moreover, this increase in the diagnosis of ADHD is a result of sociocultural changes and it is, as any other mental issue, is considered psychological, social, and cultural. Moreover, the increase in the diagnosis of ADHD is related to the increase in the tendency towards medicalization and pathologization (Frigerioa, Montalia & Fineb, 2013b).

The lack of treatment of this disorder can cause considerable damages to the global child's functioning, so early diagnosis and proper functioning is essential for children and adolescents who suffer from it. Diagnosing ADHD is a clinical diagnosis based on behavioral criteria.

Accordsing to Frigerioa, Montalia and Fineb (2013) ADHD may have some negative consequences among children on different levels; children may develop serious psychiatric conditions according to the point of view of health professionals. Thus, according to the teachers' point of view ADHD, children may not only pose danger to themselves, but also they may pose a potential threat and source of danger for other children and the schools' social order. Furthermore, when we consider the parents' point of view which they express a worrisome concern about their children's future consequences of this disorder, especially

when they are marginalized by schools and /or the society in the present, what may lead them then to become an 'out-of-society' individuals in the future, whomsoever ,somehow, are exposed to not having a family or a job or become somewhere criminals (Frigerioa, Montalia & Fineb, 2013b)

In 2010, the Israeli Ministry of Health and Director-General Circular released concerning criteria for diagnosing ADHD among children, adolescents, and adults. According to the Director-General Circular, the diagnosing criteria of the disorder is to be used only by one of the following: an expert in children neurology and child development, a specialist in psychiatry of children and youth, a pediatrician with experience at least three years in child development, an expert in the field of ADHD or a specialist in neurology or psychiatry of adult. It is also allowed to be used by psychologist experts who have specialized and have acquired experience in treating ADHD. In addition, in the CEO circular it was specified that "These specialists can use the help of other health care professionals, social workers, didactic diagnosticians, occupational therapists, physiotherapists, or speech therapists ". Diagnosis of ADHD in Israel is done mostly according to The Diagnostic and Statistical Manual of Mental Disorders (Hasisi, 2013).

The diagnosis of ADHD is divided into two categories; the first is attention deficit disorder and the second is hyperactivity or impulsivity. Each group is presented with situations that indicate a lack of concentration and quiet. Diagnosis of an individual as ADHD can be when there are six symptoms from the first group and six from the second group. These symptoms need also to be performed continuously for more than six months so that the child will be diagnosed as having ADHD (DSM-5, 2013).

Moreover, according to the Israeli Ministry of Health, in addition to the criteria specified in DSM, specialists should examine a detailed history of the child and his families, assess other possible disorders, and conduct a detailed clinical examination, in addition to give diagnostic questionnaires for parents and teachers (Hasisi, 2013).

Ergo, by looking at the diagnosis process, a number of difficulties can be detected; one of the main difficulties is that the evaluation of the inappropriateness of behaviors among children is based on subjective judgments of the observers. Although there have been great efforts to standardize what is an inappropriate behavior, it still a controversial issue. Judging behaviors remains subjective and may be interpreted differently by different observers and in different cultures. One result is the significant variations in the prevalence rates of ADHD around the world, based on these variations in diagnostic methods, support the hypothesis of the role of

diagnostic criteria bias. Moreover, this diagnostic criteria bias can be a result of the fact that ADHD often coexists with other psychiatric, psychological, and developmental disorders that sometimes overlap with ADHD symptoms (Berger, 2011).

Over the years, many treatment methods have been developed and implemented for ADHD. However, no consistent evidence exists that one-on-one therapy with the child is the most efficient. Mainly the consistently evidence-based treatments for this disorder involve (1) behavioral interventions (and for adults, cognitive-behavioral treatments), and (2) medications, mainly those that target dopaminergic and noradrenergic neurotransmitter systems. (Hinshaw & Arnold, 2015)

IV. The importance of the study

Of our job facets as educators and teachers is that sacred facet of this mission as we are shaping and forming the future generation, hand in hand with their parents –whom are in so many times we come instead or even before- as meaningful adults whom with the pupils spend time. Moreover, as can be seen from the literary review, the early diagnosis for ADHD is usually done by a family member or a teacher. Therefore, it is our duty to be able to spot the signs which the pupils send in order to help them before it is too late. Here comes the importance of this study, it enlightens the way in front of the teachers. In this study, we investigated the issue of ADHD diagnosis from the point of view of the teachers. This study focuses on the phenomenon of ADHD in the Arab society in both Israel and the West Bank. Depending on the results of the study, many things could be learned about the different dimensions of this phenomenon in the Arab society both in Israel and in the West Bank, its factors, its diagnosis and its treatment.

V. The objectives of the study

The main purpose of the current study was to examine different diagnosis dimensions of ADHD in both Israel and Palestine; stereotypes, prejudices and the influences of the schools' system polices about. The objectives were divided and examined through two studies, as the objective of study one was to (1) To extract the different dimensions of ADHD diagnosis in Israel and the West Bank, And the objectives of study two were (2) to examine the effects of social factors on ADHD in both Israel and the West Bank. (3) To examine the effects of familiar factors on ADHD in both Israel and West Bank. (4) To examine the effect of biological factors on ADHD in both Israel and the West Bank. (5) To examine the effect of nutritional factors on ADHD in both Israel and the West Bank. (6) To examine the reliability of current diagnosis ways for ADHD in both Israel and the West Bank. (7) To examine the prevalence of medical treatment for ADHD in both Israel and the West Bank. (8) To examine the prevalence of behavioral treatment for ADHD in both Israel and the West Bank. (9) To examine the schools' role in dealing with ADHD in both Israel and the West Bank. (10) To examine the parents' role in dealing with ADHD in both Israel and the West Bank. (11) To examine the prevalence of ADHD in both Israel and the West Bank nowadays compared to the past.

The Review of the Literature
Chapter 1: Conceptualizations of ADHD

1.1 Definitions of ADHD

Attention Deficit Hyperactivity Disorder (ADHD), sometimes called Attention Deficit Disorder (ADD), involves hyperactivity, difficulty paying attention and tendency to act impulsively.

ADHD is one of the most common childhood brain disorders and can continue through adolescence and adulthood. It can make it difficult for a child with ADHD to succeed in school, get along with other children or adults, or finish tasks at home.

Brain imaging studies have revealed that, in youth with ADHD, the brain matures in a normal pattern but is delayed, on average, by about 3 years. The delay is most pronounced in brain regions involved in thinking, paying attention, and planning. More recent studies have found that the outermost layer of the brain, the cortex, showed overall delayed maturation, and the brain structure important for proper communications between the two halves of the brain showed an abnormal growth pattern. These delays and abnormalities may underlie the hallmark symptoms of ADHD and help to explain how the disorder may develop (Faraone, 2009).

"Attention deficit hyperactivity disorder (ADHD), also sometimes referred to as attention deficit disorder (ADD) or hyperkinetic disorder (HKD), is a neurobiological disorder caused by an imbalance of some of the neurotransmitters found in the brain, called norepinephrine and dopamine" (Green & Chee, 1997) .

According to DSM5 "ADHD is a neurodevelopmental disorder affecting both children and adults. It is described as a "persistent" or on-going pattern of inattention and/or hyperactivity-impulsivity that gets in the way of daily life or typical development. Individuals with ADHD may also have difficulties with maintaining attention, executive function (or the brain's ability to begin an activity, organize itself and manage tasks) and working memory" (APA, 2013).

1.2 ADHD Types

In 1980, American Psychiatric Association proposed two types of ADHD in DSM-III

  a) having an attention deficit disorder with (+H)

  b) having an attention deficit disorder without hyperactivity (-H)

Later, the DSM-III mistakenly put impulsiveness in with the inattentive symptoms creating this dichotomy on the basis of hyperactivity alone. However, finding showed that the impulsive symptoms were most closely linked to the hyperactive ones than to those of inattention. This mistake was corrected in DSM-IV (APA, 1994) and now in DSM5 (Barkley, 2014; APA, 2013)

The American Psychiatric Association in the DSM-IV (1994) defines three main types of Attention Deficit Hyperactivity Disorder. Individuals can have:

  1- Predominately inattentive ADHD

  2- Predominately hyperactive-impulsive ADHD

  3- Combined type depending on the presenting symptoms (p. 83-85)

in the more recent edition DSM-V the subtypes are referred to as "presentations" and are composed of three levels mild, moderate or severe ADHD. Additional difference is that a person can change "presentations" during their lifetime. Moreover, another change was that also teens and adults with symptoms of ADHD can now be officially diagnosed not only children. The diagnostic criteria mentions and gives examples of how the disorder appears in adults and teens. Furthermore, When diagnosing adults, clinicians now look back to middle childhood (age 12) and the teen years when making a diagnosis for the beginning of symptoms, not all the way back to childhood (age 7) (APA, 2013b).

1.3 ADHD Diagnosis

Because there is no brain-imaging scan or blood test to diagnose ADHD, it is important that a health care professional specifically being trained to diagnose and treat ADHD and evaluate the child's behavior.

Most cases of ADHD are first diagnosed in the early school years. Children who are diagnosed with ADHD have symptoms that impair their ability to function as other children at the same age. These symptoms must last at least for 6 months before a child can be diagnosed with ADHD (Faraone, 2009).

According to DSM-V, there have been changes in the diagnosis of ADHD. The diagnosis of ADHD was children who were diagnosed with the disorder. In other words, teens and adults with symptoms of the disorder were not included even though they may have been struggling for many years but did not know why. Therefore, when diagnosing adults with ADHD,

clinicians now look back to middle childhood (age 12) and the teen years when making a diagnosis for the beginning of symptoms, not all the way back to childhood (age 7) (APA, 2013a).

1.4 Symptoms of ADHD

According to DSM-4, when making the diagnosis of ADHD, children should have six or more symptoms of the disorder. However, DSM-5, in teens and adults (17 and older) the DSM-5 states they should have at least five symptoms. People with ADHD show a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development (APA, 2013b).

Inattention/inattentive ADHD Symptoms

1. Fails to give close attention to details
2. Difficulty sustaining attention in tasks
3. Does not seem to listen when spoken to directly
4. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace
5. Often has difficulty organizing tasks and activities
6. Often loses things necessary for tasks or activities
7. Is often easily distracted
8. Often forgetful in daily activities

Hyperactivity-Impulsivity/ hyperactive-impulsive ADHD

The most obvious sign of ADD/ADHD is hyperactivity, individuals with ADHD may try to do several things at once, and the impulsivity of individuals with ADD/ADHD usually characterized by problems with self-control.

A) Hyperactivity

1- Often fidgets with hands or feet or squirms in seat
2- Often leaves seat in classroom or in other situations in which remaining seated is expected
3- Often runs about or climbs excessively
4- Often has difficulty playing or engaging in leisure activities
5- Often is "on the go" or as if "driven by a motor"
6- Talks excessively *(Faraone, 2009).*

B) Impulsivity

1. Often blurts out answers before questions are completed

2. Has difficulty awaiting turn

3. Interrupts or intrudes on others *(*Faraone, 2009).

Combined inattentive & hyperactive-impulsive presentation:

A person exhibiting hyperactivity, impulsivity and inattention are considered to have the combined presentation of ADHD, which combines all of the above symptoms(Has symptoms from both of the above presentations).

1.5 Causes of ADHD

The exact cause of attention deficit hyperactivity disorder (ADHD) is not fully understood, although a combination of factors is thought to be responsible.

The biological level:

No single biological cause for ADHD has been found. Scientists are not sure what causes ADHD. But most research points to genes inherited from parents as the leading contributor to ADHD. Like many other illnesses, ADHD probably results from a combination of factors (Grandjean & Landrigan, 2014) .

There have been a significant part of research which has shown that ADHD has heredity basis. According to Levy, Hay and Bennett (2006), ADHD has been shown to be a highly heritable disorder, this caused an increase interest in genetic studies. Moreover, studies have shown that 30–35% of the full siblings of ADHD probands also met criteria for ADHD, while the base rate in the population is considerably less (Levy, Hay & Bennett, 2006).

Studies have showed that "If your child has a close relative who has been diagnosed with ADHD, this increases their chance of being diagnosed with ADHD" (Borrill, 2000, p. 10).

"Twin studies demonstrate that ADHD is a highly heritable… early studies found the risk of ADHD among parents of children with ADHD to be increased by between twofold and eightfold, with similarly elevated risk among the siblings of ADHD subjects" (Mick & Faraone, 2008, p, 275).

According to the Palestinian Central Bureau of Statistics (2006) the percentage of marriage among first degree relatives and members of the same family in the Palestinian territory are very high (Palestinian Central Bureau of Statistics, 2006) this may explain the effect of biological factors in the Palestinian context.

Not all children who have inherited a tendency towards ADHD will develop it. The following factors can make it more likely to emerge.

Genes: Inherited from our parents, genes are the "blueprints" for who we are. Results from several international studies of twins showed that ADHD often runs in families.

Environmental factors: Studies suggest a potential link between cigarette smoking and alcohol use during pregnancy and ADHD in children. In addition, preschoolers who are

exposed to high levels of lead, which can sometimes be found in plumbing fixtures or paint in old buildings, have a higher risk of developing ADHD (Mangle, et al., 2014)

Brain injuries: Children who have suffered a brain injury may show some behaviors similar to those of ADHD.

The nutritional level: According to Cortese and colleagues (2014), an increasing number of clinical and epidemiological studies suggest a possible association between ADHD and obesity/overweight. On the one hand, According to the Palestinian Family Survey (2013), a significant percentage of children in Palestine suffer from under nutrition (The Palestinian Central Bureau of Statistics, 2013). On the other hand, recent statistics have shown that the rate of overweight children in Israel have recently risen and climbed into the third place after the USA and Greece (Ben-Sefer, Ben-Natan, & Ehrenfeld, 2009) this may explain the difference in the effect of the nutritional factors on ADHD in the two areas.

Food additives: There is currently no research showing that artificial food coloring causes ADHD. However, a small number of children with ADHD may be sensitive to food dyes, artificial flavors, preservatives, or other food additives. They may experience fewer ADHD symptoms on a diet without additive, such as dye-containing foods, food coloring, artificial colors, artificial sweeteners and preservatives. (Mangle, et al., 2014).

Social context: The social context has a significant impact on ADHD. According to the study of Hinshaw and colleagues (2011), there is a cross-national variation in the prevalence of ADHD that can be attributed to the cultural and social difference. They explained the case of Israel, the sociocultural diversity of the Israeli population has a significant role in the prevalence rates of ADHD. For example, according to a recent, extensive epidemiological survey among Israeli adolescents, it was reported an overall ADHD prevalence rate of 3%. The rates among the Jewish population were 3.4% and only 1.2% among the Arab population. Similar differences were also found between Jewish and Arab populations for medication treatment of ADHD. In fact, services of mental health are more available in Jewish localities, and unmet needs for services are greater in Arab localities. Moreover, there are high level of tolerance for excessive activity in Israeli classrooms. (Hinshaw, et. al. 2011). In Israel that "had regional data marked variation across regions renders averaged statistics potentially misleading. Participants commented that the prevalence of medication treatment was often limited by ideologies based on particular theories, the population's lack of acceptance of ADHD on cultural grounds, or the impact of organizations that deny the existence of ADHD" (Hinshaw, et. al. 2011, p. 460).

1.6 Associated Problems with students with ADHD

According to U.S. Department of Health and Human Services (2012), Treatments may solve the following problems: first, learning disability: a child in preschool with a learning disability may have difficulty understanding certain sounds or words or have problems expressing himself or herself in words. A school-aged child may struggle with reading, spelling, writing, and math. Second, oppositional defiant disorder: Kids with this condition, in which a child is overly stubborn or rebellious, often argue with adults and refuse to obey rules. Third, conduct disorder: this condition includes behaviors in which the child may lie, steal, fight, or bully others. He or she may destroy property, break into homes, or carry or use weapons. These children or teens are also at a higher risk of using illegal substances. Kids with conduct disorder are at risk of getting into trouble at school or with the police. Fourth, anxiety and depression: treating ADHD may help to decrease anxiety or some forms of depression. Fifth, bipolar disorder: some children with ADHD may also have this condition in which extreme mood swings go from mania (an extremely high elevated mood) to depression in short periods of time. Sixth, Tourette syndrome: very few children have this brain disorder, but, among those who do, many also have ADHD. People with Tourette syndrome have nervous tics, which can be evident as repetitive, involuntary movements, such as eye blinks, facial twitches, or grimacing, and/or as vocalizations, such as throat clearing, snorting, sniffing, or barking out words inappropriately. These behaviors can be controlled with medication, behavioral interventions, or both. Seventh, ADHD also may coexist with a sleep disorder, bed-wetting, substance abuse, or other disorders or illnesses (U.S. Department of Health and Human Services, 2012).

1.7 Treatments of ADHD

In Israel and other countries, treatments can relieve many symptoms of ADHD, but there is currently no cure for the disorder. With treatment, most people with ADHD can be successful in school and lead productive lives. Researchers are developing more effective treatments and interventions, and using new tools such as brain imaging, to understand ADHD better and to find more effective ways to treat and prevent it (Steiner, et al., 2014).

Currently available treatments aim at reducing the symptoms of ADHD and improving functioning, they include medication, various types of psychotherapy, education, and training, or a combination of treatments.

Stimulant Medications (mainly Ritalin in Israel)

Stimulant medications, such as Ritalin, are highly effective treatments for ADHD and have been available for decades. Evidence shows that stimulants are quite safe when prescribed to healthy patients and used under medical supervision (Podoly & Bar-Haim, 2010)

Stimulant Medications- side effects

Most side effects are minor and disappear over time or if the dosage level is lowered. First, Decreased appetite: healthy meals should be provided (growth or weight gain while taking this medication may happen). Second, sleeping problems: the doctor may prescribe a lower dose of the medication or a shorter-acting form. The doctor might also suggest giving the medication earlier in the day, or stopping the afternoon or evening dose. Third, less common side effects, a few children develop sudden, repetitive movements or sounds called tics. Changing the medication dosage may make tics go away. Some children also may have a personality change, such as appearing "flat" or without emotion (Steiner, et al., 2014). According to the National Center for Mental Health in Schools at UCLA (2014), "Errors are common when diagnoses of ADHD are made. These include indicating a person has ADHD when they do not (designated as a false positive), indicating a person does not have ADHD when they do (designated as a false negative), or misclassifying the person's problem. In this respect, some argue that rising ADHD prevalence rates reflect many false positives; others argue the increases reflect a reduction in false negatives." Moreover, the diagnosis of ADHD has changed greatly through the years (The National Center for Mental Health in Schools at UCLA, 2014). Moreover, According to Frigerio, Montali and Fine (2013), the use of methylphenidate as is the subject of considerable controversy. Medications are considered simplistic solutions that may negatively influence a child's autonomy and responsibility (Frigerio, Montali & Fine, 2013a)

Psychosocial Treatments

Different types of psychotherapy are used for ADHD:

1. Social Skills Training

Social Skills Training is a widely accepted treatment modality, which commonly conducted with groups of individuals. In social skills training group, the therapist aims at specific social behaviors, provides verbal instructions and demonstrations of the target behavior, and coaches the individuals to role-play the target behaviors with one another. He also provides positive feedback and urges the group to provide positive feedback to one another for using the appropriate social behavior. The children are instructed to apply their newly acquired skills in their daily lives (CHADD, 2003).

2. Behavioral therapy

Behavioral therapy aims to help a child change his or her behavior. It might involve practical assistance, such as help organizing tasks or completing schoolwork, or working through emotionally difficult events. Behavioral therapy also teaches a child how to monitor his or her own behavior. Learning to give oneself praise or rewards for acting in a desired way, such as controlling anger or thinking before acting, is another goal of behavioral therapy. Parents and teachers also can give positive or negative feedback behaviors. In addition, clear rules, chore lists, and other structured routines can help a child control his or her behavior. Therapists may teach children social skills, such as how to wait their turn, share toys, ask for help, or respond to teasing. Learning to read facial expressions and the tone of voice in others, and how to respond appropriately can also be part of social skills training (Steiner, et al., 2014).

3. Parent Training

Parent training programs are psychosocial interventions aimed at training parents in behavioral/cognitive behavioral techniques to enable them to manage their children's challenging or ADHD-related behavior. They vary in their style and content but are generally manual-based and may involve discussion, the use of video and role play (Zwi, et al., 2009).

1.8 Summary of the chapter one

In this chapter, I explored the concept of ADHD as well as some definitions for ADHD disorder. Next, I presented the different types of ADHD as they were set by the American Psychiatric Association (2013). Then, I mentioned the criteria for diagnosis and the symptoms of the disorder. After that, I presented the different causes of the disorder and the problem associated with the disorder. Finally, I presented the common ways for the treatment of the disorder in Israel. In the following chapters, I will talk about the treatment of ADHD in Palestine.

Chapter 2: Theoretical Perspective on ADHD

2.1 Social-ecological theories and ADHD

This approach emphasizes the multitude of individual and contextual factors shaping the individual's health and development can provide a useful framework for conceptualizing the factors likely to influence the persistence of ADHD and associated outcomes. According to the socio-ecological model the macro-environment, that includes social, economic, policy factors, and distal social environments that includes neighborhood, school, community factors, are important factors influencing individuals' developmental trajectories. Additional important factors are proximal influences that may include parent–child interactions, parental mental health, and children's relationships with their teachers and peers. Previous studies have shown that for individuals with ADHD family context, child factors such as IQ, comorbid mental health problems; ADHD severity/subtype, homework management, and interventions (education programs; stimulant medication) may influence outcomes (Sciberras et al, 2013).

Uri Bronfenbrenner argues "in order to understand human development, one must consider the entire ecological system in which growth occurs. This system is composed of five socially organized subsystems that help support and guide human growth. They range from microsystem, which refers to the relationship between a developing person and the immediate environment, such as school and family, to the microsystem, which refers to institutional patterns of culture, such as the economy, customs, and bodies of knowledge. "(Bronfenbrenner, 1994, p. 37)

According to **Johnson (2008)**, the main reason that made Bronfenbrenner developed the ecological systems theory is in order to understand and define development within the context of the system of relationships that form the person's environment. At first, he suggested four layers systems, which have a complex interaction with each other, can influence, and be influenced by the individual's development. Later Bronfenbrenner added a fifth dimension that contains time. The five dimensions are: (1) **Microsystem**: it is the immediate environment with which the individual have a direct contact. The bidirectional influences between the developing individual and this layer produce and sustain development. (2) **Mesosystem:** this layer includes the relations and the processes occur between two or more setting in which the developing individual exists. For example, the relationship between school and home, workplace and home… etc. (3) **Exosystem**: This layer is the larger social system, and encompasses events, contingencies, decisions, and policies over which the developing person has no influence. (4)**Macrosystem**: This layer represents

the "social blueprint" of a given culture, subculture, or broad social context and consists of the overarching pattern of values, belief systems, lifestyles, opportunities, customs, and resources embedded therein (5) **Chronosystem**: this layer refers to time. Time has an impact on all the levels of the ecological systems (Johnson, 2008).

2.2 Neuropsychological theories and ADHD

The neuropsychological functioning of children with ADHD has been studied extensively since the early 1970s. These studies have shown that individuals with ADHD exhibit below the average or relatively weak performance on various tasks of vigilance, verbal learning (particularly encoding), working memory, and executive functions such as set shifting, planning and organization, complex problem solving, and response inhibition.

Moreover, from a psychiatric point of view, individuals with ADHD usually have comorbid antisocial, substance abuse, mood, anxiety, or learning disorders. Furthermore, previous studies have shown that neuropsychological deficits in ADHD remained robust after statistically adjusting for the presence of psychiatric comorbidities. Therefore, the existing data suggest neuropsychological abnormalities in ADHD can be demonstrated independent of psychiatric comorbidity. (Seidman et al., 2004)

"Despite alterations of nomenclature, increasing numbers of researchers have been studying cognitive impairments associated with ADHD. Many have utilized various cognitive tests originally developed by neuropsychologists to evaluate for frontal lobe impairments from stroke, schizophrenia, or traumatic brain injury." (Brown, 2006, p. 36)

Specifically, research studies indicate that children with ADHD often have problems in:

1- Executive Functions (for example, planning a project, sustaining attention to task, ignoring irrelevant information)

2- Working Memory (which is often considered an executive function)

3- Fluency or speed of information processing (children with ADHD process information more slowly than their peers)

Executive Functions refer to brain circuits that priorities, integrate, and regulate other cognitive functions. They manage the brain's cognitive functions and provide the mechanism for self-regulation. Previous studies have clearly indicated that Executive Functions weaknesses are significantly associated with ADHD. Other studies argued that executive function impairments are not the single necessary and sufficient cause of ADHD.

Barkley (2011) described ADHD as a developmental disorder of self-regulation. Moreover, he argued that ADHD is mainly impairment in the development of executive function. According to this model, this impairment is mainly in the development of ability to inhibit. The individual's ability to inhibit is the primordial executive function upon which other executive functions are developed. Barkley's model also emphasizes the essential relationship between inhibition and adequate development and functioning of all executive functions such as verbal working memory, non-verbal working memory, regulation of emotion and motivation, and reconstitution of behavior. He also indicated that ADHD impairments are most noticeable in longer term, cross-situational data of an individual's behavior over longer intervals of time. Therefore, this model suggested that assessment of ADHD impairment is best done by evaluating the individual's performance in the various domains of daily life. (Barkley& Murphy, 2011).

Brown (2006) expanded Barkley's model, he suggested six clusters of cognitive functions that determine the individuals' executive functions. These clusters are: Activation (Organizing, prioritizing and activating to work), Focus (Focusing, sustaining, and shifting attention to tasks), Effort (Regulating alertness, sustaining effort, and processing speed), Emotion (Managing frustration and regulating emotions), Memory (Utilizing working memory and accessing recall), and Action (Monitoring and self-regulating action).

According to Brown (2006) every individual with ADHD seems to have some specific domains of activity in which they have no difficulty in performing these various functions that are, for them, so impaired in virtually every other area of life. (Brown 2006) Melby-Lervåg and Hulme (2012) defines working memory as a brain system that provides temporary storage and manipulation of the information necessary for complex cognitive tasks. They said that it is one of the most influential theoretical constructs in cognitive psychology. According to Melby-Lervåg and Hulme (2012):" working memory capacity could be seen as a limit on an individual's ability to repeatedly retrieve information from permanent or secondary memory that has been lost from the focus of attention due to competing cognitive activity." Moreover, they also showed that a working memory deficit is a potential explanation for many developmental disorders including ADHD (Melby-Lervåg & Hulme, 2012, p.270).
Lisa and her colleagues (2011) defined processing speed as speed of completion of a task with reasonable accuracy. Speed Processing is related to tasks associated with numbers and symbols, searching for and responding to specific targets, and rapid naming of visual stimuli.

Individuals with ADHD usually demonstrate slower processing speed than their peers in many tasks:

1) Graphomotor speed

 2) Naming speed

3) Reaction time on continuous performance or go-no go tasks (Jacobson et al, 2011)

One of the most important theories of ADHD is Barkley's neuropsychological theory of inhibition, executive functions, and motor control represents a concrete conceptual model of self-regulation. In this theory, Barkley describes the neurological deficits associated with ADHD and not a specific etiology for the disorder. The first component of this model is behavioral inhibition that is located in the prefrontal lobe. Behavioral inhibition represents a type of impulse control and is the main area of deficiency for individuals with ADHD. It enables the execution of the executive functions that allow an individual to associate responses with their likely outcome (Katz, 2009).

 This model includes four executive functions which the last component of the theory, motor control of behavior: non-verbal working memory, internalization of speech (verbal working memory), the self-regulation of affect/motivation/arousal and reconstitution (behavioral analysis and synthesis).

Another important component of this theory is self-regulation which refers to " any response, or chain of responses, by the individual that alters the probability of their subsequent response to an event and, in so doing, functions to alter the probability of a later consequence related to the event" (Barkley, 2006, p. 304).

According to Barkley (2006) there are *six key elements* of this self-regulation. First, Self-regulation is a behavior that controls an individual's response to an event, rather than controlling the event itself. Second, Self-regulatory actions are designed to change the probability of response by the individual. Third, Self-regulatory behaviors serve to change a future outcome rather than an immediate outcome. Fourth, Effective self-control one must develop a desire for long-term outcomes as opposed to short-term ones. Fifth, Self-regulatory actions bridge the gap between the event-response-outcome process and this is more difficult when the time between the steps is delayed. Sixth, Self-regulation to occur, one must have the executive functions to sense time and relate the execution of a behavior to the future (Barkley, 2006).

Behavioral Inhibition: this concept is considered to be the core deficit of ADHD. It contains threw inter-related processes:

(1) Inhibiting the initial prepotent response to an event, which is defined as the response for which immediate positive or negative reinforcement is available or has been associated with the response in the past (Barkley, 2006).

(2) Ending an ongoing response or response pattern creating a delay in the decision to begin or continue responding. This step contains ongoing awareness and monitoring that enables most individuals to recall the outcome of past behavior and shift their response accordingly. This awareness and monitoring is reliant on working memory to recall the past instances and behavioral inhibition allows individuals to control their response

(3) Protecting this delay and the self-directed responses that occur within it from disruption by interfering events or interference control which is crucial to inhibition because the delay between stimulus and response is a particularly vulnerable time for both internal and external interference (Barkley, 1997).

According to Barkley, theory individuals with ADHD often have problems with low levels of freedom from distractibility, which further impairs their ability to inhibit the prepotent response (Barkley, 2006).

Executive Functions: these contain self-directed actions that are used by the individual for self-regulated behaviors. Moreover, executive functions contribute to the internalization of behavior to anticipate future change. Furthermore, they are inter-related and control the motor system (Barkley, 1998).

There are four main executive functions which are included in self-regulation: non-verbal working memory, internalization of speech (verbal working memory), the self-regulation of affect/motivation/arousal and reconstitution (behavioral analysis and synthesis)

1- Non-Verbal Working Memory: is defines as "the capacity to maintain internally represented information in mind or on line that will be used to control a subsequent response" (Barkley, 2006, p. 307). It is responsible for initiating processes like mental imagery, hindsight, forethought, preparation to act, time management, imitation, and vicarious learning.

2- Verbal Working Memory: it refers to the process is the internal conversation that the individual has in the presence of stimuli which is considered to be the basis for problem solving. It also contributes to the formulation of rules in a hierarchically arranged system, similar to the concept of "metacognitions" (Barkley, 2006).

3- Self-Regulation of Affect/Motivation/Arousal: they bridge the delay between stimulus and behavior. This ability provides the drive that ignites persistence in goal-directed activity, in the absence of external reinforcement. In our society emotions are not usually expected to be externally evident therefore emotional self-control is very important.

Moreover, impulsive responses are more emotionally charged than thoroughly contemplated responses. Controlling these emotional reactions is important to behavioral inhibition. This process includes motivation and arousal because they are the essence of emotions. Motivation and arousal aid in the explanation of why certain behaviors are inhibited and others are not (Barkley, 2006).

4- <u>Planning or Reconstitution</u>: these refer to the analysis, which refers to the ability to take sequences apart and synthesis which refers to the recombining of the stimulus to form a whole. (Barkley, 2006).

The Gray /Quay theory of BIS and BAS

Colder and his colleagues (2011) talked about neuropsychological model of BIS and BAS. This model consists of three interacting systems:

1- The Behavioral Activation System (BAS): BAS responds to conditioned stimuli for either reward or relief from punishment

2- The Behavioral Inhibition System (BIS) the BIS, responds to conditioned stimuli for punishment and no reward as well as novelty and innate fear stimuli.

3- The Nonspecific Arousal System (NAS). The NAS is seen as a flight/fight system that responds to unconditional pain and punishment.

The original theory behind this model was set by Gray (1982) who used his theory to describe anxiety problems, which he claimed to be a consequence of an overactive

BIS. Later, Quay (1997) has used Gray's theory as a basis for explaining the deficits associated with ADHD, which he believes are related to an underactive BIS.

Despite the fact the two disorders ADHD and anxiety are related to BIS, they cannot occur in one individual at the same time. But in reality about a quarter of children with ADHD will meet the criteria for an anxiety disorder. This finding can be explained by the fact that it is important to note that the BIS, at least as originally described by Gray, is a system that is primarily linked to punishment and reward, whereas this is not the case for inhibition as defined by Barkley. Making this distinction is significant especially in that this indicates that it is only when using executive tasks with motivational conditions, that is, containing reward or punishment, that they should be seen as measures of BIS functioning. Therefore, Quay's (1997) use of deficiencies in inhibition, as measured by the stop-signal paradigm and commission errors on go/no-go tasks, as support for an underactive BIS is questionable. Furthermore, in working inhibition taxonomy, Gray's BIS is referred to as a type of motivational inhibition, whereas the concepts included in Barkley's definition of inhibition are considered as examples of executive inhibition.

When making such as distinction between different types of inhibition as described above, the evidence of an underactive BIS in ADHD is fairly limited). It should, however, be noted that it has been suggested that different types of inhibition interact to shape behavior (Colder et. al., 2011).

2.3 Cognitive theories and ADHD

2.3.1 Cognitive Load Theory

Król-Gierat (2014) said that the cognitive load theory assume that each channel in the human information-processing system has limited capacity. According to this theory, a limited amount of cognitive processing is able to occur in the verbal and the visual channels. Learning in the multimedia context requires substantial cognitive demands that include:

1) essential processing - aimed at making sense of the presented material including selecting, organizing, and integrating words and selecting, organizing, and integrating images;

2) Incidental processing - aimed at nonessential aspects of the presented material;

3) Representational holding - aimed at holding verbal or visual representations in working memory.

This theory argues that cognitive overload happens when the total intended processing exceeds the learner's cognitive capacity. Moreover, some instructional techniques may assume a processing capacity greater than an individual's limits and thus are likely to be defective. The individual's working memory and long term memories are limited. According to Król-Gierat (2014) "Learning occurs when the learner perceives and selects relevant information, organizes it into a coherent mental representation, and builds referential connections between individual pieces of information and integrates it with prior knowledge. These processes take place in the working memory. If the new information is to be remembered, it has to pass to the long term memory" **(Król-Gierat, 2014, p. 9)**

2.3.2 The Cognitive Theory of Multimedia learning and ADHD:

Mayer (2009) Cognitive Theory of Multimedia learning relies on the cognitive load theory. This theory specifically focuses on the processing requirements of multimedia instruction. Mayer claimed that individuals process visual and auditory information through separate channels during multimedia instruction. They have a limited working memory; and learn by selecting, organizing and integrating information from the multimedia environment into their long term memories According to Mayer theory the individual's visual and audio channels are what were described as the visuospatial sketchpad and phonological loop **(Mayer, 2009).**

ADHD Learners and Multimedia

According to Lewis and Brown (2012), some learners may have increased difficulty with multimedia, especially when it is visually demanding. They argued that individuals with ADHD have a decreased ability to process visuospatial information. ADHD learners may experience a disruption in information processing, which affects their ability to accomplish instructional objectives. Lewis and Brown (2012) explained that the symptoms of impulsivity and hyperactivity seem to affect the phonological and the visuospatial subsystems within the working memory of individuals with ADHD. Because of their memory deficits, learners with ADHD may process multimedia instruction differently. They added that the same symptoms, mainly impulsivity and hyperactivity, contribute to individuals with ADHD vulnerability to distraction by extraneous stimuli. This is clearly visible in the classroom context when teachers observe their pupils' inability to stay concentrated for a longer period. Lewis and Brown explain that this situation is a result of the fact that individuals with ADHD are not able to narrow their attention to a specific spatial region or to locate targeted stimuli within high-density displays (Lewis & Brown, 2012*)*

2.3.3 The cognitive energetic model

Unlike Barkley's theory according to this model ADHD is a result of poor allocation of three energetic resources, or energetic pools and not primary to the disorder. According to this theory, ADHD has an effect on three levels:

1- cognitive mechanisms such as response output

2- control systems of executive functions

3- energetic mechanisms such activation and effort

The first two levels referred to as arousal and activation. Arousal is defined as phasic responding influenced by mainly by signal intensity and novelty, it is influenced by signal intensity and novelty. The effort level refers to the necessary energy to meet the demands of the task, and effort is believed to both excite and inhibit. The effort and activation levels are closely connected and have considerable effect on motor output, therefore these two levels are believe d to be the most important ones when explaining the deficits associated with ADHD (Berlin, 2003).

2.3.4 The cognitive-behavioral model:

According to this model, "defective reward processes due to the dysfunctional regulation of dopamine levels in the *thalamocorticalbasal* ganglia circuits were at the heart of ADHD. The dynamic developmental theory is perhaps the most comprehensive effort to date and is proposed as the most useful for understanding and interpreting behavioral and educational

applied research findings on ADHD. The theorists who developed the dynamic developmental theory suggested that there were multidimensional pathways to ADHD, and they explained the differences in observed behavior in terms of differences in consequence-based behavioral processes including contingency reinforcement and extinction." (Barry &. Kelly, 2006, p. 5)

According to this model individuals with ADHD hypo-functioning dopamine systems resulted in less time available to allow children to associate behaviors with consequences. Therefore, they were tend to exhibit impulsive, hyperactive, variable, and disinhibited behaviors. Barry and. Kelly (2006), distinguished between motor and cognitive impulsiveness. They defined motor impulsiveness as bursts of responses with short inter-response times while they claimed that cognitive impulsiveness implies that private events like thoughts and plans are dealt with for short sequences of time with rapid shifts, resulting in problems with generating and following plans, problems with organizing own behavior, forgetfulness, and inefficient use of time (Barry & Kelly, 2006) .

2.4 DSM 4-5 and ADHD

DSM-IV or The Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association, offer a common language and standard criteria for the classification of mental disorders). Willcutt (2012) presented three DSM-IV criteria for the diagnosis of ADHD:

2.4.1   Subtypes of ADHD:

According to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), there are three main subgroups of ADHD. This diagnosis is based on two dimensions of inattention symptoms and hyperactivity-impulsivity symptoms. First, The predominantly inattentive type (ADHD-I) : Individuals with this type are characterized with maladaptive levels of inattention, but not hyperactivity impulsivity. 6 or more symptoms of Inattention, 5 or less symptoms of Hyperactivity/Impulsivity. Second, The predominantly hyperactive-impulsive type (ADHD-H): Individuals with this type are characterized maladaptive levels of hyperactivity-impulsivity, but not inattention. Six or more symptoms of Hyperactivity /Impulsivity, 5 or less symptoms of Inattention. Third, The combined type (ADHD-C): Individuals with this type exhibit significant 6 or more symptoms of both inattention and hyperactivity-impulsivity.

2.4.2 ADHD symptoms:

According to the current *DSM-IV*, to receive a formal diagnosis of ADHD, an individual must exhibit six or more symptoms of inattention and/or six or more symptoms of hyperactivity-impulsivity before the age of 7 in two or more contexts. Pervasive developmental disorder or psychotic disorder a diagnosis of ADHD was precluded if the individual met the criteria for a pervasive developmental disorder or psychotic disorder. (Willcutt , 2012)

The DSM criteria break down symptoms into two groups: inattentive and hyperactive-impulsive.

DSM-IV criteria for ADHD

A. Either (1) or (2):

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

Inattention

        a. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

        b. often has difficulties 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 workplace duties (not due to oppositional behavior or failure to understand instructions)

        e. often has difficulty organizing tasks and activities

        f. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

        g. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils)

        h. is often 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

- often fidgets with hands or feet or squirms in seat
- often leaves seat in classroom or in other situations in which remaining seated is expected

o often runs about or climbs excessively in situations in which it is inappropriate (in adolescents and adults, may be limited to subjective feelings of restlessness)

o often has difficulty playing or engaging in leisure activities quietly

o is often "on the go" or often acts as if "driven by a motor"

o often talks excessively

Impulsivity

o often blurts out answers before the questions have been completed

o often has difficulty awaiting turn

o often interrupts or intrudes on others (e.g., butts into conversations or games)

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

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

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur excessively during the course of a Pervasive Developmental Disorder,

Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder) (APA, 1994, pp. 83-85).

DMS V:

The *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (*DSM-5*) is the 2013 update to the American Psychiatric Association's (APA, 2013) classification and diagnostic guidelines. In the United States, the DSM serves as a universal authority for psychiatric diagnosis.

There are five major changes in the new DSM-5

1- a number of examples have been included to elaborate the types of behavior that people with ADHD may exhibit across the lifespan.

2- The age before which symptoms must be manifested has been increased from 7 to 12 years.

3- The number of symptoms required for those over 17 years has been reduced from six to five.

4- The previous exclusion criterion for ADHD and autism has been removed.

5- Greater emphasis has been placed on the identification of symptoms across several settings (Bill 2010).

2.5 Critical studies

2.5.1 Comorbidity

The concept of comorbidity refers to the co-occurrence of several different disorders in one individual. Another concept which is related to the concept of comorbidity is the issue of specificity, that is, to what extent predictors are unique to a particular disorder. If the deficit in, for instances, executive inhibition is not specific to ADHD, it cannot be a necessary and sufficient cause of the disorder.

Conduct Disorder and Oppositional Defiant Disorder

Together with ADHD, conduct disorder (CD) and oppositional defiant disorder (ODD) are among the most common psychiatric disorders of childhood (American Psychiatric Association, 1994). Included in the diagnostic criteria for conduct disorders are problems of aggression (e.g., bullying, threatening, and intimidating others, being physically cruel), destruction of property, deceitfulness, thefts, and serious violation of rules (American Psychiatric Association, 1994). Oppositional defiant disorder includes some of the features observed in conduct disorder (e.g., disobedience and aggression), although not in their persistent and more serious forms. In fact, oppositional defiant disorder is often seen as a developmental precursor of conduct disorder, and when a child meets the criteria for both disorders, the diagnosis of conduct disorder takes precedence and oppositional defiant disorder is not diagnosed. In a review of the comorbid conditions of ADHD, moreover, about half of the children with ADHD also meet the criteria for either conduct disorder or oppositional defiant disorder. Children with conduct disorder or oppositional defiant disorder more often come from families with social problems compared to children with ADHD, and they more often have learning disabilities. Regarding performance measures, deficits in executive inhibition have been found also among children with conduct disorder, indicating that this deficit might not be specific to ADHD. However, as most previous studies have failed to control for the large overlap between conduct disorder and ADHD, the apparent relation between executive inhibition and conduct disorder could be a result of high levels of ADHD symptoms among children with conduct disorder. Even though children diagnosed with conduct disorder do not meet the criteria for comorbid ADHD, they may still have considerably higher levels of ADHD symptoms compared to normal controls. It has therefore been argued that it is important to treat data dimensionally, instead of just categorically, and in that way control for comorbid symptoms at a sub-clinical level.

Social Anxiety

Social anxiety refers to behaviors such as worrying about not doing the right thing or showing things that the child has made him- or herself. In that Gray's theory of BIS and BAS

(The Behavioral Activation System) has linked an underactive BIS (The Behavioral Inhibition System) to ADHD, since an overactive BIS would result in anxiety problems, there has been an increased interest in both executive inhibition and inhibition to the unfamiliar and their possible relations to ADHD and anxiety problems.

Oosterlaan (2001) claimed that despite the fact that some empirical support has been found for higher inhibitory control among individuals high in anxiety, there are also many previous searches that couldn't find significant group differences. But, even among the studies that have included reward and punishment, many couldn't find significant group differences between individuals high in anxiety and normal controls. Rather consistent relations have, however, been found between inhibition to the unfamiliar and social anxiety (Oosterlaan, 2001).

2.5.2 Should ADHD be regarded as a category or as a dimension?

Additional debate in the scientific literature concerns the question of whether ADHD should be seen as representing a category or a dimension of behavior. Regarding it as a category, an individual either has the disorder or does not. "The DSM system uses this categorical approach by requiring that certain thresholds be met before a diagnosis can be made. The view of regarding psychopathologies as representing dimensions of behavior claims that ADHD constitutes the extreme end of a dimension, or dimensions, of behavior that falls along a continuum including normal children. This approach does not necessarily see ADHD as a disease, but views these children as being high in symptoms of hyperactivity or inattention" (Berlin, 2003).

Previous genetic studies have shown that that ADHD represents a dimensional trait rather than a pathological category in that heritability estimates are about as high regardless of whether a continuum or categorical approach is used to characterize ADHD. A different way to study this question includes exploring changes in the degree of association between symptom severity and some variable characteristic of the disorder. A linear relation, where the degree of association is similar across severity levels, is taken as support for a dimensional approach, since deviations from linearity support a categorical approach (Sonuga-Barke, Dalen, Daley, & Remington, 2002).

2.5.3 The possibility of preschool prediction

Barkley (1989) has estimated that about half of children who receive a diagnosis of ADHD manifest behavior problems by the time they are 3 years old. However, preschool predictors of ADHD is considered to be a tricky business, mainly due to the normative nature of

hyperactive behavior in preschool. Regarding other predictors besides activity level, most previous studies have not studied ADHD specifically, but rather general disruptive behaviors (i.e., hyperactivity as well as conduct problems) (Barkley, 1989).

Moreover, Barkley (1997b) argued that because executive inhibition is seen as the primary deficit in ADHD, longitudinal relations between preschool inhibition and later hyperactivity should be expected. Regarding the other executive functions included in the model, it is important to note that the various executive functions are likely to emerge at different points in development. Therefore, the primary characteristic of preschool children with ADHD is likely to be poor response inhibition, whereas these children might not differ from controls on measures of the other executive functions, as these have yet to mature even among normally developing children. Thus, school-aged children with ADHD are likely to reveal a far more complicated view of deficits with regard to executive functioning compared to preschool children with the same disorder (Barkley, 1997b).

2.5.4 Gender differences

According to American Psychiatric Association (1994) in the past the sample sizes in clinical ADHD studies often are small, and the boy-girl ratio in clinical samples often ranges between 4:1 to 9:1, girls have either been excluded from previous studies, or the number of girls has been too small to conduct separate analyses for each sex. Previous studies can therefore not tell us much about ADHD in girls.

It only has been during the last decade that researchers have investigated gender differences among individuals with Attention-deficit Hyperactivity Disorder (ADHD).

ADHD is much more common among males than females. It is estimated that boys are two to three times more likely to have ADHD than girls. They are up to nine times more likely than girls to be referred for evaluation and treatment are.

The difference in referral rates between ADHD boys and girls is likely due to ADHD boys having more behavior problems than ADHD girls do.

Studies have found that ADHD girls tend to have more internalizing behaviors such as anxiety, social withdrawal, and depression. Most girls diagnosed with ADHD, tend to cluster in the inattentive subtype. Because they are not a behavior problem, their difficulties are often overlooked. Boys diagnosed with ADHD are usually clinic-referred because of oppositional, aggressive, and conduct behaviors. They tend to be very disruptive in the classroom, drawing the attention of their teachers.

Some researchers have found that ADHD girls referred for treatment have more attentional difficulties than ADHD boys, though they are less hyperactive. Findings regarding

intellectual functioning have been inconsistent. A few researchers have found that girls diagnosed with ADHD tend to score lower on IQ tests. However, these studies have been highly criticized because of where the children were recruited.

Compared to non-ADHD children, one study has found that ADHD is associated with earlier sexual activity in girls and later sexual activity in boys.

Within the ADHD, predominately inattentive subtype, girls tend to experience more peer rejection than boys. Mothers tend to be more critical of their ADHD daughters than ADHD sons (Gershon, 2002).

2.5.5 Relations between ADHD, executive functioning and intelligence

Additional important issue regarding ADHD was whether executive functions are really discernable from general cognitive ability (i.e., intelligence or IQ). There have been different findings regarding this issue

(a) Factor analyses have identified separate dimensions of executive functions and that of intelligence

(b) Patients suffering injuries to the frontal lobes often show little or no alteration in IQ scores, although their executive functions are usually seriously affected. It should, however, be noted that these results apply primarily to crystallized intelligence, whereas measures of fluid intelligence are more similar to executive functioning as defined above.

Notwithstanding the fact that executive functioning might be discernable from intelligence, this does not mean that the former has no relation or effect upon the latter. In fact, several studies have found that measures of various executive functions as well as ratings of hyperactivity are related to intelligence

This raises the question of whether it is advisable to statistically control for intelligence when examining executive functioning deficits among children with ADHD. Based on the findings presented above, it has been argued that controlling for IQ will probably eliminate some of the differences between ADHD children and controls that are a result of the variable of interest, ADHD (Barkley, 1997). Consequently, researchers might be best off reporting their data both with and without controlling for intelligence, letting the reading make his or her own interpretation of the results.

2.5.6 The discriminant ability of tests of executive functioning

"Although significant group differences between ADHD children and controls have been observed for various measures of executive inhibition as well as for measures of other executive functions, it is important to note that group differences alone are insufficient

indices of the discriminant ability of those measures. Researchers comparing ADHD children with controls are comparing the means between groups. This is, however, not what clinicians are doing when setting a diagnosis – they are classifying individuals. Instead of group differences, discriminant ability is best examined using measures of sensitivity and specificity. Sensitivity refers to the probability of an abnormal test score given that a person has the diagnosis in question, whereas specificity is defined as the probability of a normal test score given that the person does not have the diagnosis (Berlin, 2003).

The relatively few previous studies that have complemented their analysis with analysis directed towards examining the discriminant ability of tests of executive functioning have generally found that these tests are better at excluding normal children from the ADHD category than at confirming ADHD in children diagnosed with the disorder. In terms of conditional probabilities, the specificity has been relativity high in these studies, whereas the sensitivity has been low. From the perspective of understanding the deficits of ADHD, these results are disappointing in that they indicate that there is a relatively large number of diagnosed children who do not have executive function impairments. None of these studies, however, used measures from

Barkley's full model and might therefore have missed children for whom the deficit primarily pertained to a specific function.

Interestingly, previous studies have shown that it is often tests measuring executive inhibition or working memory that have been best at discriminating between groups." (Berlin, 2003).

2.6 Stereotype & prejudices

According to Canu and his colleagues (2008) previous studies have showed that individuals with ADHD can experience rejection in both peers and family contexts. Moreover, findings also showed that hyperactive-impulsive (HI) and inattentive (IA) behaviors predict peer relations problems. Moreover there are some cognitive tendencies that are associated with ADHD and that can interfere with social learning from rejection experiences: deficient empathic and emotional regulatory abilities, poor social problem- solving ability and a positive illusory bias. Other findings suggested that social maladjustment does not necessarily remit with age. Moreover, the impulsivity, inattention, and antisocialism often associated with ADHD in adulthood generate aversion in many peers through a common mechanism: "Actual behaviors of ADHD targets are observed or otherwise experienced by others, who then draw away. An alternate, cognitive route to rejection that has not been adequately explored is stigma directed at the ADHD label itself." (Canu et al., 2008, p., 3)

Canu and his colleagues (2008) suggested that a number of studies were conducted on the consequences of stigma on individuals with mental illnesses and which were noticed also among individuals with ADHD and which included:

1- reluctance to seek treatment
2- reduced adherence to medication
3- a decreased sense of empowerment
4- social isolation, even if these

Canu and his colleagues (2008) have argued that the common mechanism behind all of these consequences is that perceived stigmas lower the self-esteem and lead to decreased in social opportunities. They added that the previous studies on the characteristics associated with a great degree of stigma have shown that in general there are three features and those features apply also to individuals with ADHD. These features are: first, they are highly visible and difficult to conceal to be stigmatized. Individuals with ADHD often detected quickly in social interaction, suggesting that it is difficult to conceal and therefore likely to be associated with outward discrimination. Second, They are perceived as controllable which means that perceivers have less sympathy, and feel more justified in their prejudices, toward stigma that are perceived as "controllable". This aspect of stigma-related prejudice is particularly applicable to individuals with ADHD; it is a popular belief that ADHD reflects "bad parenting" and could be easily controlled via some old-fashioned discipline. Third, they are misunderstood by the public. Disorders that are misunderstood are more likely to be stigmatized. In the specific case of ADHD, it was recently noted that public perceptions of ADHD are tainted by inaccuracy.

For conclusion, individuals with ADHD meet all the criteria for disorders that are likely to be stigmatized. Moreover, there is compelling evidence that priming a category label
is sufficient to activate negative stereotypes, Moreover, attaching the mere label of ADHD to a target individual would lead to negative appraisals of the individual across a number of domains as compared to targets with other sorts of weaknesses (Canu et al., 2008).

2.7. Summary of chapter two

In this chapter I presented the different perspectives of the main theories regarding to ADHD. I started with the Social-ecological theories which recognizes the interwoven relationship that exists between the individual and their environment. Then I talked about the neuropsychological theories, according to these theories there are a relation between neurobiology and ADHD, I presented some of the main theories in this field: Barkley's Theory of ADHD and The Gray /Quay theory of BIS and BAS. Next the cognitive theories,

which in general claim that individuals with ADHD exhibit significant cognitive weaknesses in areas that are essential to daily functioning both at school and at home. I presented a number of these theories, Cognitive Load Theory, the Cognitive Theory of Multimedia learning, the cognitive energetic model, the cognitive-behavioral model. Then I moved to DSM 4-5 and ADHD that is The Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association, offers a common language and standard criteria for the classification of ADHD. Finally, I presented some critical issues regarding ADHD.

Chapter 3: School system in Israel and Palestine

3.1. Israel and Palestine: A historical background

After WWII, there was an increase in the hostility between Palestinians and Zionists over the fate of Palestine. Before the establishment of the state of Israel, the three regions Israel, Gaza, and the West Bank were one country called Palestine. The land was divided between two main population groups: Israeli Jews and Palestinian Arabs. The Arabs were divided into three ethical groups Muslims, Christian, and Druze. The number of Jews moving to Palestine sharply increased. Some went as part of a belief in establishing a Jewish homeland and others went to escape anti-Semitic persecution. The hostility also increased between the Zionist militias and the British army. Britain demanded that the recently established United Nations determine the future of Palestine. The UN General Assembly passed Resolution 181 in 1947 which would partition Palestine into two states, one Jewish and the other Arab, with the area of Jerusalem and Bethlehem as an international zone. While, the Zionist leadership publicly accepted the UN partition plan, the Palestinian Arabs and the surrounding Arab states rejected the UN plan.

In 1948, which Israelis refer to as the 'Year of Independence' and Palestinians refer to as 'al nakba', meaning 'the disaster' or 'the catastrophe'

The Zionist military forces were smaller in number but much more organized and trained compared to Arab military forces. On May 15, 1948, the British evacuated Palestine, and Zionist leaders proclaimed the state of Israel (Ghanem, 2001).

[1]Map of 1947 UN partition plan.

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[1] *Source: the website of The Council for Arab-British Understanding,*
http://www.caabu.org/sites/default/files/resources/History%20of%20Israel%20Palestine.pdf

When the war ended in 1949, Palestine was divided into three parts. The State of Israel encompassed over 77 percent of the territory, of the remainder of Palestine, the larger part—the West Bank—became part of Jordan and Egypt took over the administration of a small area on the Mediterranean coast, the Gaza Strip. More than 750,000 Palestinians fled for their lives, leaving behind their homes and belongings and becoming refugees.

The massive migration of the Jews started in1880s,

Another issue that aroused as a result of the establishment of the state of Israel is the "Palestinian Refugees", 70% of Palestinians are refugees. There are over 4 million Palestinian refugees registered with the United Nations Relief Works Agency (UNRWA. Most of them live in 59 official camps in the region. Palestinians assert that they have a right to return to their homes. This right, known as the "Right of Return", but Israel deny this right (Ghanem, 2001).

[2]*The map of the area in 1948*

The 6-day war in 1967:

As a response for the threat of the President of Egypt Nasser, Israel declared a war. As a result of this war which lasted for six days Israel captured the West Bank from Jordan, the Gaza Strip and the Sinai Peninsula from Egypt, and the Golan Heights from Syria (Ghanem, 2001).

The 1973 War

The October 1973 Arab-Israeli War, known as the Yom Kippur War in Israel and the Ramadan War in Arab countries, the war began when the Arab countries started a joint surprise attack on Israel in the Israeli-occupied territories on Yom Kippur (the Day of Atonement), the holiest day in Judaism, Egyptian and Syrian forces crossed ceasefire lines to enter the Sinai Peninsula and Golan Heights respectively. At the beginning, facing such an attack, the Israeli forces were swiftly overwhelmed. But after few days the Israeli forces

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[2] *Source: the website of The Council for Arab-British Understanding, foot notes*
http://www.caabu.org/sites/default/files/resources/History%20of%20Israel%20Palestine.pdf

launched a counter-attacked in the Sinai. They pushed back the Egyptian military and crossed the Suez Canal south of Ismailia. They also   pushed the Syrian forces in Golan Heights and re-captured lost land. A cease-fire was organized by the United Nations, Egypt and Israel signed an interim agreement which declared their willingness to settle their differences by peaceful means rather than by military (Ghanem, 2001).

1982 Lebanon War / First Lebanon War

Palestinian forces in southern Lebanon attacked northern Israel. Therefore, Israel attacked back and 1982 Lebanon War or the First Lebanon War started. Israeli forces entered the Lebanon territories and advanced as far as Beirut and managed to expel the Palestinian leadership from Lebanon to Tunisia. Due to an international pressure, in June 1985 Israel withdrew from most of Lebanon (Lambeth, 2011).

1987- 1993- The First Intifada:

After 20 years of Israeli occupation of the West Bank and Gaza Strip, the Palestinian population initiated a mass uprising against the Israeli occupation. It was called "The Intifada" which means "shaking off" in Arabic. It was a national movement, which involved thousands of Palestinians including men, teenagers, women, and even children. It involved various forms of civil disobedience, including massive demonstrations, general strikes, refusal to pay taxes, boycotts of Israeli products, political graffiti and the establishment of underground schools (since regular schools were closed by the military as reprisals for the uprising). It also included stone throwing. This conflict continued until the Oslo Accords were signed in 1993 (Wingate, 2004).

1993- Oslo peace accords

Until 1993, Israel refused to agree for the establishment of a Palestinian state.

This issue was solved in the Oslo Declaration of Principles. Palestinian Liberation Organization was set up in the early 1960s, but this was the first time that Israel agreed to negotiate with them.

The main outcome of this agreement is forming 'self-governing' powers in the parts of the Occupied Territories from which the Israeli army withdrew. Moreover, accords signed in 1993, Gaza was turned over to the newly created Palestinian Authority, to form one wing of the Palestinian state, along with the West Bank and a potential land corridor between them. But two different parties rules these two regions—the militant Hamas controlled Gaza and Fatah ruled the West Bank. Many Israeli settlers remained in Gaza (Ghanem, 2001).

2000- Camp David Summit

In July 2000 the American President, Bill Clinton invited both the Israeli Prime Minister Ehud Barak and Palestinian President Yasser Arafat to Camp David. But the two parties didn't get to final solution (Ghanem, 2001).

2000-2005- The Al-Aqsa intifada

As a result of a provocative visit of the Israeli prime minster leader Ariel Sharon visited the Jewish Temple Mount, a site revered by Jews that is also one of the most important holy places to the Muslims a mosque called "**Al-Aqsa"**. /it was a violent period for the two sides, on one hand many Israeli citizens died in suicide attacks. On the other and Israel's military returned to major population centers in the territories and carried out operations against terrorist targets. Palestinian civilians were also victims of the (Cordesman & Burke, 2002).

2002- Israel Begins Constructing West Bank Security Barrier

The construction of a security barrier around the West Bank that actually cuts into the West Bank. To prevent any infiltrator to enter Israel. The barrier encircles Palestinian towns and villages, separating communities and families from each other, farmers from their land, workers from their workplaces, students and teachers from education, and the sick from healthcare (Bell, 2005).

2005 -The withdrew all Israeli settlers from Gaza

The Israeli prime minister Ariel Sharon, decided to withdraw all Israeli settlers from Gaza. This was the first territory completely in Palestinian hands (Clyde, 2005).

2006- Hamas won the elections in Palestine

Hamas won the elections in January 2006 ousting the Fatah government. Consequently, in 2007 more than 100 people were killed in the fighting between Fatah and Hamas. Hamas gunmen routed the Fatah forces, and seized control of Gaza outright.

2006 Hezbollah Israel Lebanon War / Second Lebanon War

In 2006 an Islamic organization called Hezbollah which is based in Lebanon crossed the Lebanon- Israel border and attacked an Israeli army unit, killing eight soldiers and kidnapping two more who were later murdered. Moreover, it began launching rockets into Israeli cities and towns. In response, Israel initiated air attack on Hezbollah military targets, particularly rocket launchers, and mounted a ground offensive.

This was the 2006 Lebanon War or the Second Lebanon War. Because of the war, Lebanese transportation infrastructure and cities were strategically damaged. Hostilities officially ended with UN Cease Fire Resolution 1701 passed on August 11, 2006 (Lambeth, 2011).

2007- Annapolis Conference

For the first time the two-state solution was publicly referred to as the mutually agreed-upon framework for a solution to the Israeli-Palestinian conflict on November 27, 2007 in Annapolis Conference which was organized by US Secretary of State Condoleezza Rice between Israel and the Palestinian Authority's Fatah leaders (Migdalovitz, 2007).

2011 Prisoner Exchange for Gilad Shalit's release

An Israeli soldier Gilad Shalit was kidnapped by Hamas in 2006, they held Shalit captive for five years. Until 2011 when Israel made a deal with Hamas to release 1,027 Palestinian prisoners held in Israel in exchange for Shalit (Gelvin, J. 2014).

2012 Gaza-Israel Conflict Operation Pillar of Defense

As a result of the huge number of rockets, mortars and Grad missiles were fired from the Gaza Strip into Israel, Israel deployed the Iron Dome missile defense system. But in November 2012, the rocket launching continued, therefore Israel responded with Operation Pillar of Defense, an eight-day Israeli Defense Force operation in Gaza, aimed at halting missile attacks from Gaza into Israel, attacking rocket launch pads, weapon depots, and Hamas military and government facilities. Consequently, many Palestinian citizens were killed (Gelvin, J. 2014).

2014 Kidnapping and Murder of Three Israeli Teens and Murder of One Palestinian Teen

Hamas, kidnapped and killed three Israeli teenagers Eyal Yifrach, Gilad Shaar, and Naftali Fraenkel. Two days later, a Palestinian teenager Mohammed Abu Khdeir was abducted from East Jerusalem and murdered by extremist Israelis in an apparent revenge killing (Gelvin, J. 2014).

2014 Gaza-Israel Conflict and Operation Protective Edge

As a result of the violent killing s the tensions increased and there were more rockets launched from Gaza into Israel and approximately 80 Israeli air strikes on Gaza. In addition, the Israel forces arrested 51 Hamas operatives who had been released in exchange for Gilad

Shalit in 2011. The Israeli Defense force launched Operation Protective Edge, aimed at stopping missile and mortar attacks on Israel, halting the smuggling of weapons into Gaza, and destroying a sophisticated network of offensive terror tunnels leading from Gaza into Israel. Both Palestinians and Israelis were displaced during the conflict. On August 26, there was a ceasefire brokered by Egypt (Gelvin, 2014).

According to WHO (2010) "the human security is threatened both directly by the Israel military's use of arms, destruction of infrastructure, separation of families and disruption of social networks through the Separation Barrier, internal conflicts as well as indirectly by economic restrictions leading especially in the Gaza Strip to widespread poverty. Palestinians cannot protect themselves from these threats and long-term human development depends on a solution to the conflict that would improve Palestinians' human security and thus reduce threats to physical, mental and social health" (WHO, 2010). This shows the huge gap between the two places on the different levels.

3.2. The Development of the Israeli and the Palestinian Educational systems

3.2.1 The Development of the Israeli Educational systems

Until 1948:

Before the establishment of the state there was no central education system for the whole Jewish population. Every political movement had its own education system. The drastic increase in the number of residents during the first decade of the state of Israel, which was about three time, was associated by a huge number of students enrolled in the educational institutions. This situation created a conflict between the various parties and movements in the direction of educating the future generation (Smilansky, 1973).

Between 1948- 1950:

This was the period of massive immigration waves to Israel. At the beginning of 1948, many immigrant children lived in camps and needed education. First they tried to send them to schools near the camps but as a result of the huge stream of immigration appropriate educational framework had to be found. Therefore, the department for "Language and Cultural Absorption Immigrants" in "the National Committee to the Israeli Knesset" built classrooms for immigrant children in the camps.

In 1949, the first Compulsory Education Act passed by the Knesset. It had three main items: Government obligation to provide educational services for children aged 12-5, Local

authorities' duty to participate in these services satisfaction, and Duty of parents to send their children to - make sure that school

The structure of the educational system after the law was: one year in the kindergarten, eight year of elementary school and four years of high school. In the high school they had to pay tuition fees.

This law had two main consequences: Decrease in the dropout rates which had started from the elementary school and Immigrant adaptation of education norms which were acceptable in Israel.

However, the implementation new education act encountered many problems, first the explosion in the number of students from 91133 in the year 1949 to 184797 in 1950. Second, the lack of qualified teachers. Third, huge financial burden. Fourth, lack of buildings and equipment. Fourth, many parents sent their children to work due to the economic situation. Fifth, girls were considered a problem because girls traditionally they did not study, because they had to help their mothers in household.

The greatest problem faced the different streams existed especially in the camps general, employees, Eastern and Association of Israel. Parents had the opportunity to choose which steam to follow. When a unified education was established, the religious stream received against the school involved (boys and girls), and demanded more Torah teaching. They turned to Knesset members the United Religious Front, asking for help. State Education Law unified the various sectors of the education system in Israel took place into two streams: State Education and state religious education (Smilansky, 1973).

During the 1950's

During this period the State Education Law (1953), which unified the different education frameworks into one system. The State Education Law was established according to this law the State is responsible to establish a framework of State education, and to determine a set of uniform objectives.

The main objectives of the state education are: (1) Introducing a State education and a State-religious education system; (2) Determining regular curriculums, supplemental curriculums, additional curriculums and experimental curriculums; determining the required arrangements and conditions for official recognition of unofficial educational institutions; (3) Regularizing the supervision of State educational institutions and appointing inspectors, principals and teachers; introducing the core curriculum; (4) Adjusting the provisions of the law to fit the

compulsory education needs of non-Jewish students; (5) Determining student enrollment and transfer arrangements; and preventing any form of party and political propaganda within educational institutions (the official site of the Ministry of education: http://cms.education.gov.il/NR/rdonlyres/80371F5E-6AFC-445A-81A5-2DB9EAFC6184/130303/sectionA.pdf)

The structure of the educational system stayed the same as before. This law produced a formal equality, all the students were demanded to learn in the state schools according to a national curriculum and unified assessment criteria.

The law indeed held formal equality, but there were no conditions in the camps to implement the law; there was no local government help, educational staff who worked there were not always skilled, the division into registration caused the separation of old and new, there were almost no high schools, the curriculum is not adapted to the needs and cultural background of immigrants (Smilansky, 1973).

During the 60's

The formal equality did not gain the expected educational outcomes. Therefore, a new methodology of "nurturing" was adopted which was based on ethnic affiliation, socioeconomic situation and the living area (Smilansky, 1973).

In 1968, a need for integration raised on the educational agenda, therefore a reform was conducted in the educational system in Israel. The main goals of the reform were: (1) to increase the level of teaching and the pupil's educational achievements in all educational levels. (2) to decrease the gaps between Israeli students in educational levels and their chances to integrate in society and in advanced economy.(3) to interact between students from different echelons as well as children to parents from different countries within shared educational frameworks.(4) on the structural level the junior high school was establishes as a transitional stage from elementary to high school (Smilansky, 1973).

During the 70's

The ultimate goal of the 1968 reform was to improve achievement of each student and to reduce the gaps between the students from the different social and economic religious backgrounds.
There were major changes according to the reform: (1) to extend the free compulsory education in two years (until the tenth grade). (2) to change the structure of the education system: Primary education (six years), Intermediate education (three years) and Secondary

education or high school (three years). Moreover, the transition from elementary school to middle school will be without selection process. (3) Create integration in middle schools by connecting various registration areas. (4) Establishment of comprehensive schools in towns in disadvantaged neighborhoods, comprehensive schools included academic track and professional tracks. Many students were referred to the professional tracks, which disabled them to choose higher education later. (5) Homerooms in junior high were heterogeneous, but were into groups of study "homogeneous" by level of study in three subjects: Hebrew, Mathematics, and English. Adjusting the level of the student was designed to promote the students. Groupings did not achieve the goals.

Unfortunately, examining the outcomes of the reform showed that the reform failed to be implemented throughout the educational system (Svirsky, 1990).

During the 80's

Following significant cuts in education during these years, parents started to pay more for educational services which gives them, in their opinion, the right to make decisions regarding their children's education. Concepts such as decentralization, autonomy, choice and pluralism supersede concepts such as: reducing gaps, equal opportunities and integration (Svirsky, 1990).

During the 90's

Since the early nineties, the Ministry of Education's policy was conducted in two ways: first, an attempt to increase the education budget, restore lost hours, and extend the school day. But the success on this facet was limited due to insufficient budgets. The second is trying to deal with various private entities (parent organizations, private organizations, businesses and philanthropic foundations) which become during the nineties an integral part of the education system.

In 1990, Israeli Knesset approves the long school day law which aimed at returning the extra teaching hours and hours of enrichment for all schools. In 1998, the "extra hours of study and enrichment" law was established. The expanded education legislation during the 90's was partially implemented as a result of under-funding and various delays initiated by Treasury.

•Self-management (1992) - to make a difference in the perception of the responsibilities of schools in 1992 a committee was appointed to examine ways of the transition the schools to self-management education system (Pasternak, 2003).

During 2000's

In light of dissatisfaction with reading achievements in the country, in October 2000 and the Committee was established to examine the teaching of reading. In July 2002, the committee submitted its recommendations to the Ministry of Education. The main recommendation of the committee was that all the methods for teaching reading in the country should contain the following components: decoding skills, reading punctuation, accuracy in identifying and reading words, training, and practice fluency, encouraging writing, fostering the language and an objective assessment (Pasternak, 2003).

"Differential standard" (2003) equality in education reform:

It was aimed to reducing the gaps in primary education and closing the educational and social gap while utilizing true abilities of each and every child. This can be done by a fair distribution of resources that will allow each child in Israel to reach the optimal level of achievement in relation to the socio-economic gap where they are and allow them to develop in their own way (Pasternak, 2003).

New Horizon (2008)

Reform "New Horizon" is budgeted and systemic reform. There is an expression of a variety of forms of organization learning (classroom, individualized instruction - teachers and students and a small group with a teacher) to achieve the goals of education and teaching. It also recognizes the complexity of the reform of the teaching profession and the need for professional development in it.

The structure of the Israeli educational system:

There are four main levels of schools: pre-primary education (ages 2-5),primary education (grades 1-8), lower secondary or intermediate education (grades7-9) and upper secondary education (grades 9-12)

The State Education Sector

90% of the education system in Israel is covered by the State Education Sector. The state and the local authorities own jointly the schools and kindergartens. While the Ministry of Education supervises and finances the functioning of the schools and kindergarten and is responsible for the curriculum, textbook and teacher recruitment.

This sector includes three networks: (1) The general state run (or secular) network: Schools are under the tight control of the Ministry of Education which defines the curriculum, is in

charge of the recruitment and training of the teachers, and approves the textbooks to be used. (2) The religious state run network: The schools in this network are established at the request of parents in any locality, provided that a minimum number of students are enrolled.(3) The (state) Arab network. The Arab schools are established in localities where the majority of the population speaks Arabic

The Independent Education Sector

This sector covers the non-state education's institutions which are recognized by the stated and are privately owned and mostly religious. The state and the Ministry of Education subsidize the institutions in this sector, but they keep their independence with regard to curriculum and teacher recruitment.

Ministry of education of Israel state web site; "hamakor"-the national authority for survey and esteem of education; new horizon –Ofek Hadash.

www.education.gov.il/Ofekhadash

3.2.2 The Israeli educational system current situation

Since the pre-state period, there have been disparities between Jewish and Arab populations in Israel. The consequences of the differences between the leadership and budgeting polices of the two population led to disparities since the British Mandate period and continued to the early years of Israel establishment. These gaps have narrowed continually during the years of Israel existence.

An additional source of the disparities between the Arab and the Jews is the gap that of the strength of the local authorities. The local authorities in the Arab sector have limited capabilities compared to the Jewish authorities. Therefore, it is difficult to collect local rate and to establish complementary educational services.

There was a turning point in the Israeli governmental policy toward the Arab sector. A five year plans were initiated in order to eliminate the deep disparities between the two populations. These plans aimed to invest in the education of the Arab sector. Since then there was a gradual trend toward reducing the gaps, but the gaps between planning and implementation still exist. Furthermore, until 1987 the educational leadership in the Arab sector was administered by Jewish position holders. This led to the development of a senior Arab educational leadership, and to a lack in addressing the educational needs of the sector. The administrative control of the Ministry of Education and its struggle of pedagogical authority in nearly all areas of the education system had limited the development of a

professional leadership capable of adapting pedagogical programs to Arab-sector needs. Recently, there was a turning point in the situation of the Arab sector, the emergence of an intelligentsia (inspectors, school principals, professional online forums; graduate students in education) that has left its mark at every point of the educational map which appeared in many points: philanthropic initiatives to raise funds for education institutes, the establishment of organizations to improve school performance, initiatives on the part of numerous local authorities to increase the percentage of pupils eligible for the matriculation certificate, and an impressive rise in the percentage of Israeli Arabs studying in institutions of higher education.

Unfortunately, there is a significant discrimination against the Arab sector. An example of this discrimination is the policy of "national priority regions in education", according to which, they divided the state of Israel into four priority regions. Priority Region A, gets more support from the government regarding the costs of matriculation exams, teacher benefits, additional teaching hours, subsidies for pre-school programs, tuition for higher education, priority in development plans such as the hot lunch program, extending the school day, and more. It included 500 Jewish and only 4 Arab localities.

Another example for the discrimination against the Arab sector in cutbacks in the education budget have forced families to pay more and more supplementary school expenses.

The Arab population is also highly diverse in term of religious (Muslims, Christians and Druze) and ethnic background. Yet this population shares a similar history, language and culture. In general, the Arab population in Israel suffers from high rate of poverty and unemployment concept to the Jewish population. Moreover, much lower expenditure of public funds for social and educational services compared to the Jewish majority (Abu-Asbah, 2007).

The educational inequality that exists between Jewish and Arab populations in Israel dates back to the pre-state period. One reason for this gap is the differences in strength of leadership and budgeting policies. Another reason for the Jewish-Arab educational gaps is the strength of the local authorities. The local authorities in the Arab sector have limited economic capabilities which make it difficult to collect local rate and to establish complementary educational services.

These schools in the Arab sector serve Muslims, Christians, Bedouin, and Druze. The instruction language is Arabic, although Hebrew is taught as a subject. The ratio student teacher is higher in the Arab sector than in the Jewish sector. The curriculum, except for

language, is almost the same as that of Jewish schools. Due to the fact that the language of instruction is Arabic, it is difficult for the Arab graduates to succeed in higher education; the reason is that the language of instruction is Hebrew. (Al - Haj, 1996)

Family involvement:

Israel we can see that families in Israel have more support and available services, "Israel has a relatively strong mental health delivery system and well-developed child and psychiatric and neurological services. Nevertheless, there is much room for improvement in the diagnosis and treatment of ADHD." (Farbstein, et al., 2014, p. 573)

In addition, beginning in the mid-1990s, the Israeli Ministry of Education set a policy of homeschool collaboration, since then there have been a number of structural reforms, and plans call for recognizing the parents as significant factors in the children's formal education, emphasizing the system's commitment to communicate openly with parents on a regular basic and to work in a coordinated and structured way to achieve and to define mutual educational goals. (Dor, 2013, p. 7)

3.2.3 Special Education in Israel

Special education services target children from diverse categories of disabilities such as: children with mental retardation, behavioral-emotional problems, learning disabilities, sensory disabilities, chronic diseases, organic deficiencies, and physical handicaps (Gordon, & Nesher, 1996). This enormous population of children were segregated into special education institutes and detached from their peers and moved out of their normal environment (Zachs, 1979). The basis for this segregation was the delivery of special education services in specialized institutes for each of the disability category. But, new humanistic-educational philosophies demanded the basic human rights for these children. These children have the right for *normalization* that is defines: the use of normal and culture-based means (valuable techniques, equipment, and methods) in order to help individuals with special needs to have such quality of life (income, health services, and social integration) as efficient as their age equivalent normal individuals. In addition, the society should make any effort available to support their behavior, experiences, status, and self-respect (Moshel, 1993). Normalization was interpreted by Reiter (Reiter, 1999), as the right for living in a pluralistic democratic society, in which each individual can choose his\her own life style in despite of his\her own disability.

Initially, the idea of normalization was developed in the Scandinavian countries (Reiter, 1999), but later, it was developed in the USA. First, it was supported by legislations

(Education for All Handicapped Children Act, 1975; PL 94-142). this Act aimed to achieve equal right and equal opportunities for children with special needs, and to support their inclusion in mainstream schools and other institutes that are the least restrictive, in which they will be qualified for normal life (Reiter, 1999; Sailor et al., 1989). In 1990, the previous Act was replaced by new one: "Individuals with Disabilities Education Act" (Koenning et al., 1995). However, this Act does not mandate that all students with disabilities, regardless of the nature and severity of their limitations be placed in the general classroom (Kirk & Gallagher & Anastasiow, 2000).

The literature on inclusion indicates that majority of the teachers support inclusion and believe that inclusion benefits students with disabilities and does not harm the non-disabled students. Further, the presence of students with disabilities has no negative impact on the instructional process (Scruggs & Mastropieri, 1996).

The Israeli Special Education Act (1988), declared that each category of children should be given adapted educational and therapeutic services. The basic level of services for children in special education classes includes a special-education-teacher, an educational assistant, and transition-service to the school. Only two service categories are implemented for children in mainstream inclusive classes: inclusive services and enhancement services. The first includes a special education teacher, remedial instruction teacher, individual instruction hours, paramedical therapies, art therapy, psychological and educational services. The second includes all children with special needs in mainstream as well as in special education schools are eligible for additional paramedical services according to individual needs, and an accompanying assistant according to individual outcomes, educational services for sick children at-home, and empowering suitable initiatives for children with special needs. These services are given according to individual evaluation outcomes, age, and severity of the diagnosis.

As a part of the supportive services, each child with special needs is eligible for educational counseling and psycho-emotional support implemented by a qualified professional at school. Such support is provided according to formal reports documenting the urgent need for at-risk interventions. Another example, children with learning disabilities are eligible for various testing adaptations and pedagogical support such as assistance in writing, extending test time, using a calculator and having oral tests instead of written assignments. These adaptations are given individually according to a psychological assessment and intelligence tests and according to comprehensive assessment of specific learning-skills and thinking strategies (The Israeli Special Education Act, 1988).

The typology of children with special needs: definitions, classifications, etc.

Children with special needs are defined by the Israeli Act of special education as "an individual, aged 3-21, years that due to impairment in his\her cognitive, psycho-social or communicative development or in his\her physical or sensory abilities, is unable to function adaptively and efficiently". Although this definition emphasizes the odd and the impaired in the children's functional abilities, one should keep-in-mind that these are simply children living in a natural, normative environment as their peers. Nevertheless, these individuals have special needs for functioning and adapting daily-life behaviors in a significantly greater manner compared to their peers and to the general variance expected in the normative population (the Israeli Act of Special Education, 1988)

There are two main approaches for defining children with special needs: the categorical definition, which is based on medical diagnosis and the etiology for each disability or disorder, and the functional definition, based on the results of several professional evaluations of the strengths and the weaknesses in daily-life. According to the functional definition, the evaluation results may change throughout life span due to improvement in skill acquisition and real-life-experiences. Moreover, the functional evaluation results should focus on individual variance within the group of children with special needs and highlight individual strengths in order to take advantage of it for supporting and improving the weaknesses (Marom et al., 2006)

The very same definition also includes an expansion dealing with the important issue of children who should not be included in this category of children with special need. In other words, the problem of over-diagnosis and under-estimation of children those are culturally deprived and culturally different from the majority of children in a specific country. The results of the medical screening and testing determines the educational frame in which the child will be referred to, according to the main or major diagnosis, whereas the professional functional evaluation determines the sort and the amount of the educational services and the rehabilitation support that is eligible for the specific child (General Manager Instruction, 2011)

 Diagnostic systems and procedures for children with special needs are determined according to the developmental impairment or the cognitive disorder as defined in the DSM-IV (2000). According to the General Director's instructions, in Oct. 2011, borderline intelligence should be diagnosed by a qualified psychologist, whereas children with suspicion of mental retardation of any level should be diagnosed by professional committee members of mental retardation services in Israel. Children with behavioral and emotional disorders should be diagnosed by a qualified psychologist or a psychiatrist specialized in children and

adolescents. In addition, children with suspicion in ADHD should be diagnosed by an educational psychologist and a pediatric neurologist or by a child-and-adolescent psychiatrist, with a practice experience in child-development center. Moreover, Children with PDD /Autism should be diagnosed by a developmental/clinical psychologist and a pediatrician\neurologist or specialized in child and adolescent psychiatry. As expected, Children with suspicion in psychiatric disorders should be diagnosed by a child and adolescent psychiatrist. Children with cerebral palsy or other physical disabilities should be diagnosed by a pediatric neurologist or a pediatrician with 3-years-experience in child development centers. In the domain of sensory disorders, children with hearing impairments and\or communication disorders should be diagnosed by a speech therapist specialized in auditory disorders, whereas children with visual impairments should by diagnosed by an optician and then evaluated by the committee members of the national service for the blind in Israel. Moreover, children with developmental speech and language delay should be diagnosed by an educational or clinical psychologist and a pediatrician or neurologist and a qualified and experienced speech therapist. Children with specific learning disability (LD) should be evaluated and tested by a qualified psychologist in order to assess their IQ level and then they should be assessed by a qualified learning disabilities' professional evaluator. All reports and tests should be handed-over to the class educators and school principal in order to prepare the individual educational intervention according to the specific recommendations (Smith, 2001; General Director's Instructions, 2011).   Classification may provide a structure to how supports and services are organized and how students are assigned to those resources. In the other side, the process of classifying students can impact negatively, unintended consequences, among them, the loss of educational opportunity, alienation from peers, stigma resulting in a diminished sense of competence and self-esteem, and lowered teacher and parental expectations of the child (Keogh & MacMillan, 1996).

Each category of diagnosis has various factors negatively influencing the functional abilities of the children, such as emotional and behavioral disorders, social problems, attention and concentration disorders, dependence in daily-living activities and learning disabilities. These functional limitations are generally addressed by individual psycho-social support, improving self-esteem, implementing individualized educational intervention for enhancing independence in daily-living and promoting formal leaning (Smith, 2001).

3.2.4 The Development of the Palestinian educational system

The responsibility for the Palestinian educational system in 1967 was the Jordanian Ministry of Education under the Education Act 1964. The law regulated many aspects of system activities as acceptance of students to private schools and public to nine years of compulsory education - the first six years were called the first phase and the last three years were called to the intermediate phase. The textbooks have been distributed to all students in public schools during the phase, once a year for free; whereas pupils had to buy textbooks in private schools (Abu-Saad & Champagne, 2006).

The schools were scattered throughout the towns and villages of the kingdom, and they were under the supervision of the Education Departments, which w placed at the center of the Commission or region where there was a technical and administrative full staff. The country bore the brunt of Education via the Ministry of Education, who oversaw technically and administratively to all the school, providing education to 69% of students in the kingdom(Abu-Saad & Champagne, 2006)..

In Gaza Strip, responsibility for education from 1948 until June 1967 war was in the hands of the Egyptian administration, and it was conducted according to the Egyptian curriculum. Education was free (Abu-Saad & Champagne, 2006).

Palestinian experience in education during the Israeli occupation (1967-1994)

After the June 1967 war, Israel occupied the West Bank, Gaza and East Jerusalem by, efforts were made to restore the activities of daily life of the Palestinians (schools were in summer vacation during the war). In the same year the teachers and students returned to school, although many teachers went on strike, and some of them never came back to teach for patriotism and national reasons.

After the war began a new era, in which the education system passed to Israeli military rule and the system was exposed to all kinds of arbitrary regulations, which have a bearing on students, teachers, and educational institutions. These actions included handling curricula; school system also began to suffer a significant shortage of teachers, schools, and equipment and facilities such as libraries and laboratories.

With regard to education in Jerusalem, Israeli Ministry of Education transferred all public elementary schools under the authority of the Israeli education administration, and public high schools - to the authority the Jerusalem Municipality.

Israeli authorities closed the Ministry of Education in Jerusalem and instead opened two offices, one in Bethlehem, and one in Ramallah. Israeli curriculum enforced on the schools, in addition to the Jordanian curriculum, which remained in use.

1969, following the Israeli declaration of Israel's annexation of Jerusalem, the Israeli Knesset passed a law supervision of private schools. Nevertheless, the refusal of private educational institutions to be conducted under this Act led to its suspension, and these institutions continued to teach according to the Jordanian curriculum. In addition, Israel canceled the validity of Jordanian laws that were in use in Jerusalem, including the Jordanian Education Act no. 16, 1964.

As part of the measures taken against educational institutions, the Israeli occupation authorities took over several schools and turned them into military positions, orders were given to reducing the number of schools located near the main streets, and the relocation of high schools and replacing them with primary schools.

West Bank military governor in July 1980 issued a military order number 854 allowed him to interfere directly in the educational process in universities and other higher education institutions, by controlling the granting of licenses, on the curriculum, the meetings and direct subordination of private educational institutions of the military government authorities.

In 1987, with the beginning of the Palestinian uprising in the occupied territories against the Israeli occupation, Israeli authorities have taken a few steps like closing schools and educational institutions and detention of hundreds of students. These actions had negative impacts on the educational process. First, the inability of educational institutions to complete the curriculum, and because of this, the public examinations in school did not conducted on time. Secondly, the weakness of the learning capabilities of Palestinian students, because of the atmosphere in Palestinian society which was characterized by violence and the absence of discipline.

The situation began to change in 1992, when the Palestinians began negotiations with Israel on a two-state solution. As a result of the Oslo Accords were signed in 1993 between the PLO and Israel (The Palestinian Center for Policy and Survey Research, 2003).

Palestinian experience in education since 1994 to this day:
In August 1994 the Palestinian Ministry of Education took over direct and full responsibility on the education in the Palestinian Authority. This was the first time in history that the education system of the Palestinian population is run by the Palestinian institution.

Transferring the responsibility was smooth and very successful. After the first three days of transferring the responsibility, the school year 1994/5 began.

The budget of the public sector schools were funded by the government of the Palestinian National Authority, and represents 17.5% of the total budget of the Authority. Primary responsibility for the education system was in the hands of the Ministry of Education, which controlled public schools that began from the first grade to the tenth grade. Eleventh grade and twelfth students and seniors to pay tuition under the fundraising for schools, and they also have to buy at full price their textbooks.

Public schools provide education NGOs to 69% of all students in the Palestinian Authority. The Ministry of Education also oversees private schools, kindergartens and cultural centers, representing 6% of the student population. The ministry also supervises UNRWA schools, serving 25% of the student population, on matters relating to the curriculum and general education. The situation in Jerusalem is different, the schools work under the Waqf department. However, officially, these schools still have contacts with the Palestinian Ministry of Education. There are also schools run by the Jerusalem Municipality.

As stated, the West Bank attended the Jordanian curriculum and the Gaza Strip by Egypt's curriculum. After getting Palestinian Ministry of Education responsibility for the Palestinian education system, an urgent need arose to bridge this gap and create a Palestinian curriculum, which can create a unification of Palestinian identity and distinct Palestinian culture. New curriculum for grades 1 and 6 was launched in 2001/2000; classes 2 and 7 in 2002/2001, and plans additional grades were added each year until the full implementation of the new curriculum (The Palestinian Center for Policy and Survey Research, 2003).

3.2.5 The structure of the Palestinian educational system:

The Palestinian general education system is divided into sub-sectors: First, Pre-school education: This sector provides services for children from 4-6. These services are provided by local and international institutions, with the local private sector services increasing rapidly. The Ministry of Education monitor thus sector indirectly. Second, Primary Education (PE): This sector contains basic education from first to tenth grade. Education in this sector is compulsory. This sector is divided into two levels: The lower basic stage- Grades first to fourth and the upper basic stage (empowerment) - Grades fifth to tenth. Third, Secondary Education (SE): This sector contains the academic and vocational education for grades eleventh to twelfth. Vocational education contains four streams: commerce, agriculture, industry and tourism. Academic education contains the science and humanities stream. Fourth, Non-formal Education (NFE): The Ministry of Education grants licenses for non-

formal education centers according to specific conditions. The Ministry of Education provides two non-formal education programs: (1) *Parallel education program* provided to dropouts who had completed 5-6 years of basic education, (2) *Literacy program and adult education*, provided for those over the age of 15 who are not proficient in reading and writing.

There are three main providers for the Palestinian education system: First the Government: The Ministry of Education the major provider for most schools in West Bank and Gaza. But the schools in Jerusalem is still under the Israeli authority. However, in the East of Jerusalem, there are two types of public schools providers: (1) Public schools supervised by the Islamic Waqf and administered by the Palestinian Ministry of Education. (2) public schools supervised by the Israeli Ministry of Education. Second, UNRWA: The UN agency with the longest running assistance program is responsible for schools for Palestinian refugees. Apart from Palestine, it also operates in Lebanon, Jordan, and Syria. Third, Private Sector: The growing education service provider is supervised and funded by charities, religious groups, private enterprises and individuals. (Ministry of Education and Higher Education, 2014)

3.3 Summary of chapter three

In this chapter I presented an outline for the main events in the history of the Israeli-Palistinain issue. Then I outlined the development phases of the education in plistine system followed by a description of the structure of the Education system in israel. Then I moved to the education system in Palistine its development stages and structure.

Chapter 4: ADHD in Israel and Palestine: an overview

4.1. ADHD diagnosis in Israel

Rights of children with ADHD by the National Health Act in Israel (Huss & Klein, 2010).

Diagnosis: National Health Act entitles the child until the age of 18 years full diagnosis of ADHD according to the criteria set by the Ministry of Health.

Treatment: According to the National Health Act funds to provide medication to anyone who has been diagnosed before the age of 18 years suffering from ADHD

In recent years, HMOs establish a professional multi centers treat children with attention deficit disorders and concentration, although the number of these centers is still small and they still do not meet all needs. There are also several associations dedicated topic ADHD treatment, including various support groups that provide some of the services that accompany voluntary or low paid. Unfortunately, a large part of the comprehensive management stills available for purchase only from private sources (Huss & Klein, 2010).

Diagnosing ADHD:

It's a clinical diagnosis based on behavioural criterion and findings. In 2010 the Israeli Ministry of Education published management circular on "Diagnostic criteria for ADHD". It indicates that the diagnostic disorder will only be conducted by one of the following: expert in child neurology and development, specialist in psychiatry of children and youth, a pediatrician with experience of at least 6 years in child development, an expert pediatrician who has practiced and gained experience in ADHD, a specialist in neurology or psychiatry of the adult, psychologists and experts who are specialized and have acquired experience in treating ADHD and These experts diagnose can use other health professionals, social workers, diagnosticians didactic, occupational therapists, physiotherapists, or speech therapists(management circular number 41/3101)

Method of diagnosis ADHD in Israel is usually performed by the American psychiatric diagnoses book that diagnoses and classifies a wide range of mental disorders by various symptoms (Diagnostic and Statistical Manual of Mental Disorder – DSM). It is divided into two categories: Attention deficit disorder and Hyperactivity or impulsivity

In each group presented, a number of situations indicate the lack of concentration and quiet. ADHD diagnosis is determined if six elements of each group exist.

Treatment of ADHD:

In Israel there are two methods for treatment, either Psychological and behavioural treatment: Psychological treatment focuses on promoting academic learning and social skills, and improving social interaction with teachers and friends and decreasing physical and verbal aggression, in addition to providing tools for parents to deal with the child who suffers from this disorder. On the other hand, Medication: Pharmacological treatment of ADHD in Israel is mostly done by using two drugs: Ritalin and Concerta, these drugs exist in several doses and differ in their effect and side effects. According to the study of Bart, Podoly and Bar-Haim (2010) the use of medicine for treating ADHD is widely used and is considered a first line treatment for children with this disorder in Israel.

Ministry of Education defines the student has ADHD, a student with normal cognitive capacity for learning, who due to his/her innate neurological disorder, harms his functioning as a student in the school system. But there is a condition that his/her intelligence level is in the normal range. However, ADHD has a negative impact on the student's academic functioning, and sometimes the disorder is expressed in learning disabilities. (Hasisi, 2013)

4.2. ADHD diagnosis in Palestine:

Special Education in Palestine:

Special education in Palestine is an emerging system undergoing wide-ranging and fundamental changes. Although the region in general is yet to establish strong educational programs that meet the needs of marginalized children and those with special educational needs, there is a growing recognition of the need for change. Depending on the disability, children with special educational needs may be enrolled in local classrooms or accommodated at specialized schools. However, there remains a great majority of children that have yet to be served appropriately.

Between 1997 and 1999, the Palestinian Ministry implemented a trial program "Inclusive Education" for children in years 1-4 in order to prepare board of directors to meet the need the students with disabilities in schools. However, a limited amount of effort has been invested in expanding the program and reaching out to disabled students, in embodying an inclusive "education for all". "Education for All" and include students with special needs. The Palestinian Child Law of 2005 emphasizes the government's commitment to provide education and training in special classes, schools or centers that are linked to the regular education system; are accessible and in proximity to the child's residence; provide

appropriate types and levels of education; and have staff that is educationally qualified to educate children according to their needs (UNRWA, 2010).

A significant challenge in providing sufficient support for the disabled is that a limited amount of higher educational institutions offers courses or certificates in special education; meanwhile, none of which offer or award a specific degree for teaching children with special needs.

Moreover, diagnostic tools are virtually nonexistent, identification of children with special needs is difficult, which may explain why the identification of learning disabilities appears only infrequently in the Palestinian Authority; official data may not reflect the actual prevalence of mild disability categories.

Additional challenge is, the clan structure, common in traditional, rural Palestinian society, is considered an obstacle to the provision of special education services. Such services are often designed for the individual child, whereas traditional communities often regard any separation of the child from the extended clan as a negative outcome. This clash between the individualistic nature of special education service provision and the clan emphasis on the collective, coupled with stigmatizing conceptualizations of disability, may explain the estimated large proportions of children not receiving special education services. Furthermore, as in other traditional societies, the presence of a child with special education needs is often regarded as reflecting negatively on the child's family and on the chances for marriage of other siblings. Families often fear that their community will reject them, and they may neglect or even reject the child with special education needs.

As the Palestinians modernize and become more aware of disabilities, they are changing their perceptions of disability and of the need and right of all children to receive education services Of course, economic limitations are always an important factor in special education services. In the absence of a comprehensive policy on the provision of special services and the means to fund those services, private Palestinian institutions have had to offer mostly extant services. One of the main obstacles to the provision of special education services is the lack of sufficient professional personnel. However, the Universalia review (UNRWA, 2010) found that, in practice, potentially less than 10% of children with special needs are receiving appropriate support. There are limited information and research in the field of special education in the Palestinian setting.

Learning disabilities

39.9% of persons with Learning disability require psychological support, 37.0% require specialized education program, 35.8% require occupational therapy, 31.1% require speech therapy and 28.5% are in need for physiotherapy.

Previous study of Palestinian children in third and fourth class in West Bank and Gaza Strip showed that 28.2% of children reported learning disability in Arabic Language, 19.2% reported learning difficulties in English language, and 22.3% reported learning disability in Mathematics. There were no statistically significant differences in Arabic and English language scores between the two sites of the study. However, learning difficulties and disabilities in Mathematics scores were more in children from Gaza Strip (Khayyat, Abdelaziz & Abdulla, 2013).

In the study of Khayyat, Abdelaziz and Abdulla (2013) rates of learning disabilities were even higher than those in African countries.

They explain the high rate of learning disability due to: (1) Class sizes and conditions are also matters of concern in Palestinian Territories. A typical class in Palestinian schools could contain as much as 45 or even more pupils, usually made up of a mixture of abilities, negative attitudes towards school, low levels motivation, scarcity of qualified teachers. These situations make it difficult for children with disabilities to receive the extra help they need.

(2) Many teachers in the school system have not received relevant training on how to identify children with learning problems and hence are unable to provide remedial assistance to such children even under the best of conditions.

ADHD in Palestine:

According to Thabet and his colleagues (2010) "There have been no reported studies on ADHD in Palestine and therefore we sought to establish rates and the distribution of ADHD symptoms and other associated comorbid mental health problems in Palestinian school-age children, as reported by parents and teachers. This will provide an evidence-base for appropriate planning of preventative interventions and treatment programs."

According to a study conducted by Harazni (2012) on students with ADHD in Palestine, the following results can be very useful for my search: First, Mothers of ADHD children face difficulties in making the child sit and study; it was clear in this study that the mother is the only one responsible to ensure the child studies, so for this reason, the child's study is a heavy burden for the mother. Second, there is a lack of coordination between mothers and children's schools, and the mothers experienced that their children are neglected and ignored by teachers and the teachers are unsympathetic in their attitudes. Third, the mothers feel very bad because the school does not provide their children with a good education and their

children are even punished and beaten sometimes by teachers. Fourth, mothers stated that they do not trust the school because they feel that the teachers at school do not give any regard to the child's special needs. The teachers are ignorant, unprofessional, and unsympathetic. Fifth, the mothers mentioned that there are no specialized centers to care for the children and there is a deficiency of experts in the field of ADHD teachers. Sixth, teachers claimed that the lack of information was not only about the child's health but also about ADHD as a disorder. Most of the teachers do not know what ADHD is; some of them had not heard about this problem before, and the others have disguised the fact that most of the children have hyperactivity. Seventh, Teachers have a lack of information about the child's condition. Their information is mainly built by their own observations when they notice that the child has abnormal behaviors. Eighth, teachers have a lack of information on the treatment of the child. Ninth, Most of the teachers have no idea if the child is using medication or not and what medication or what its effects could be. Tenth, there is a lack in resources including either time, trained staff that can help or even material to facilitate childcare is another issue for teachers. The teachers experienced that there is no time given for students with ADHD and the time of the class is not enough so it is impossible to give ADHD children extra time to do what they have to do. Eleventh, there are no adequate facilities in schools to help teachers improve the academic achievement of the child. The lack of necessary materials in schools causes teachers to face many difficulties in childcare. Twelfth, there is a Lack of support from school principal, counselor, Ministry of Education, and parents were the major accusations of teachers. Thirteenth, the teachers said that the head of the school does not help much in the child's follow-up, when they send the child to him/her; he/she usually sends the child back and asks the teachers to deal with the problem. Fourteenth, the counselor cannot handle the child's behavior, and just finds ways for the child to pass time. This inability to help is based on the lack of training for social workers and teachers as well. Fifteenth, the Ministry of Education (M.O.E) does not provide any type of training for teachers to support them to address the ADHD children in school. Sixteenth, teachers experienced that the parents of the children do not make visits to the school to assess the conditions of their children, not even when the director asks them to come. Most of the time they complain that the teachers do not provide care for the child as it should be. Finally, It was clear from the results of the study that there is lack of knowledge and understanding about ADHD (Harazni, 2012).

4.3 ADHD Stereotype and prejudices

Until about three years ago, ADHD was considered to be an integral part of special needs therefore my examination of the existing data on people attitudes towards ADHD in Israel and Palestine reveals that the information is limited. Therefore, I will present the issue as part of people's attitudes towards special needs in general.

4.3.1 ADHD - Stereotype and prejudices: researches in Israel

Many studies have shown that although much progress has been made in Israel to increase the tolerance for person with disabilities including ADHD, there are still negative attitudes towards almost in every society (Scheinin, 1990)

According to Flsks (1993), the attitudes of Israeli society towards people with disabilities are mainly negative and hostile. According to her, this is reflected in detachment and avoiding connecting with them, reluctance to treat them, understand them and employ them.

Scheinin (1990) mentioned numerous studies indicating that the reasons for the negative attitudes towards people with disability are due to alienation and lack of similarity between the human and the exceptional.

People with disabilities including ADHD, like other minority group, are in a lower social status, and are evaluated by social stereotypes. Researchers reported high correlations between attitudes and prejudices against the disabled and minority groups (Flsks, 1993)

Jordan (1971) defined the variables that influence attitudes toward people with special needs, and classified them into four main groups: (a) demographic variables (b) the degree of contact / exposure with the people with special needs (c) the knowledge about the disability (d) Social and psychological variables

1. **Demographic variables**

Three demographic variables were found that influence attitudes towards people with special needs: gender, ethnicity, and religion.

Gender: It was found that adolescent girls hold more positive attitudes towards exceptional populations in general and people with special needs in particular, than boys.

Ethnicity: differences were found between Jewish and Arab society. Jewish society had more positive positions.

In Jewish society there were no differences in attitude towards the person with special needs, but some differences were found in relation to the affective component of attitude toward physical disability, as Ashkenazi Jews had more positive emotional attitudes than the Jews of Iraqi or Yemeni origin.

Religiosity: Nissim (1990) found that religiosity influences Israeli adolescent attitudes: among religious boys were more negative attitudes towards people with special needs than among secular and religious girls had more positive attitudes than secular girls.

No consistent and clear effect was found of other demographic variables, such as age (Nissim, 1990), status (socioeconomic and educational level) (Holzer, et al. 2000)

2. Contact with people with special needs:

According to sociocultural theory, the separation and distance between a person with special needs and people without special needs (Florian & Kehat, 1988) out of social norms, beliefs and values lead to negative views.

Findings show that in cases where there are planned and structured meetings, there are systematically changing in position toward the positive. It was also found that informal contact with the people with special needs, such as neighborly relations also raised the level of positive attitude towards them (Nissim, 1990)

3. Knowledge about the disabilities

The degree of knowledge (or rather, lack of knowledge) that people had, has a great impact on their attitudes towards people with special needs. Studies indicate distinct differences were found between different professions Para-medical (physical therapists, nurses) were found to have more positive attitudes toward the disabled and those with other professions and industrial services (Holzer, et al. 2000). It seems that these differences are due to the degree of knowledge that those therapists have about people with special needs. In addition the high degree of contact, with people with special needs.

4. Social and psychological variables

According to Nissim (1990) healthy person concerned about his relationship with the person with special need can be interpreted by others as if he has difficulties to adjust on his own, so internalizing values and beliefs of others weaken the boundaries of one's self and cause him to reject the person with special needs.

There is personality variables associated with holding negative attitudes towards people with special needs: anxiety, self-concept, body image, and social desirability. It seems that psychologically looking at others as inferior contribute for self-raising. This is a convenient way, which people use to improve their situation. The fact that they find others inferior to them and they can be attributed negative characteristics to others, make them feel better (Nissim 1990).

The situation in the Arab Sector:

Despite the fact that the percentage of people special needs is higher in the Arab than in the Jewish sector, for years people with special needs in the Arab sector in Israel were neglected by the policy makers. They have been included in frameworks and programs offered by various organizations.

According to recent study conducted on the society perception of people with special needs, Arab society does not integrate people with disabilities, and maintain prejudices and stereotypes about them. The participants in the study had complaints about the way Arab society treats people with special needs, including the status of these individuals and that of their families. This discrimination was reflected in many points such as limitations in marriage prospects, isolation, degradation, humiliation, fear, suspicion, insufficient sensitivity to their needs and alienation. Moreover, the results of the study have shown that the situation is much worst in in Bedouin localities in the Negev, where they disregard for people with special needs is the most difficult within the Arab sector as a whole. Furthermore, women with special needs suffer even more than men do.

Another interesting finding was that people with special need are not being integrated appropriately in the education system. Moreover, there are not enough continuing education programs for people with special needs, such as a program leading to a completion certificate or matriculation certificate for those who were unable to study when they were younger, even higher education for is also problematic for them.(Sandler-Loeff & Shahak, 2006)

4.3.2 ADHD and Stereotype: researches in Palestine:

The political situation in Palestine has negative affect on people with special needs.

The Palestinian society's perception and perspective towards people with special needs were negative. They were seen as individuals in need for care and help and they must be institutions to offer them humanitarian services. This stereotyped perspective towards those with special needs began to reduce gradually.

One reason for this change in people's negative perspective was the Palestinian – Israeli conflict, what because of many young people became with special needs as a result of the Israeli aggression. The society looked at these individuals as national strugglers and accepts providing care for them as a national responsibility.

According to Marrar and his colleagues (2011) "Studies conducted in Palestine and neighboring countries indicate overall negative attitudes towards people with disabilities. These attitudes generally influence PWDs' self-esteem, irrespective of the degree they obtain or their impairment; they inhibit their social integration and empowerment." (Marrar et al., 2011 p. 18)

"The 2011 Disability Survey conducted in Palestine also showed that more than one fifth of individuals with disabilities were forced to leave school due to environmental and material constraints. In this context, girls with disabilities are likely to face particular disadvantages, due to cultural norms and traditions that limit their movements and keep them restricted to the private sphere of the family and the home" (Abu Alghaib, 2012)

Avoid engagement because of others' attitudes

8.7% of disabled persons 18 years and over in the Palestinian Territory usually avoid performing any activities because of others' attitudes towards them; 9.5% in the West Bank and 7.7% in Gaza Strip (Palestinian Central Bureau of Statistics and Ministry of Social Affairs ,2011, p.14).

4.4 Summary of chapter four

In this chapter, I presented the ADHD in Israel and Palestine I presented how each country deals with this disorder regarding the diagnosis and the treatment. Then I talked about stereotypes towards this disorder in the Israeli and the Palestinian societies.

Chapter 5: The Research

5.1 Study 1: Social representation of ADHD in Israel and Palestine

The first phase of the study: "**Pilot study**" **using a qualitative methodology.**

The first phase of the study was composed of focus groups and key informants. According to Morgan (1996), focus groups are research and data collection methodology, in which the source of the data is the group interaction (Morgan, 1996). Moreover, each focus group requires someone to interview the participants as well as provide guidance; this person is called the facilitator or the moderator, who has a significant role in guiding the group discussion, but not participates in them. In other words, the mediator does not share their views and opinions about the topic being discussed in the discussion (Berg, 1998; Litoselliti, 2003; Morgan, 1996).

Focus groups methodology has many advantages, first it allows the issues to be discussed in more depth, and more data was collected in a given amount of time. In addition, Focus groups are seen less threatening than individual interviews (Lederman, 1990).

Regarding to the size of the focus groups there are different opinions, while Rabiee (2004) said that it should be between six and ten, Osborne and Collins (2001) said that it should be between four and twelve (Osborne & Collins ,2001).

5.1.1 The aims and scopes of study 1:

The aim of this study was to examine the different dimensions of the diagnosis of ADHD in Israel and in Palestine: Stereotype, Prejudice and the Influence of the school system polices. In this phase I wanted to determine the different themes connected to the subject of the study. The hypothesis of the current study is that the themes related to ADHD diagnosis are common for the two geographic areas (WB and IL).

5.1.2 Methods:

I have chosen the qualitative methodology for this study in which I have used both focus groups and key informant interviews methods.

Qualitative research is concerned with meaning and individual experiences rather than identification of cause-effect relationships (Willig, 2001)

Qualitative methods are concerned with engaging in exploration, description, and interpretation of personal and social experiences. Therefore, a range of data collection and analysis techniques can be adopted which allow the researcher to take a holistic approach to the research material and engage with meaning and context (Hayes, 1998).

While the focus group method is a type of in-depth interview accomplished in a group, in which the focus or object of analysis is the interaction inside the group, and where the participants influence each other through their answers to the ideas and contributions during the discussion (Krueger, 1994).

The key informant interviews are another type of qualitative in-depth interviews with people who know what is going on in the community, and where the purpose this type of interviews is to collect information from people like community leaders, professionals, or residents, who have firsthand knowledge about the community. These community experts, with their particular knowledge and understanding, can provide insight on the nature of problems and give recommendations for solutions (ACAPS, 2011).

5.1.3 Instruments and procedures:

In-Depth Qualitative Interview to key informants and Focus group

I have chosen the in-depth qualitative interview as my study tool. The main characteristics of this interview are open-ended, neutral, sensitive, clear to the interviewee, flexible and exploratory in nature. During the interview the researcher adjusts later questions depending on how the interviewee answers earlier questions, to clarify the responses, to follow promising new lines of enquiry, or to probe for more detail. The in-depth interview is unstructured and conversational, and the questions asked are generally open-ended and designed to elicit detailed, concrete stories about the subject's experience (Soklaridis, 2009).

The main aim of the interview was to help me as a researcher to understand the experiences of the participants and to examine the different dimensions connected to the ADHD diagnosis in both Israel and the West Bank that will be examined in the next phase of the study.

 In the interview, I have explored a number of issues mainly connected to the participants' professional experience with ADHD pupils. The first issue was the participants' previous experiences with ADHD students that also included the factors for ADHD. Depending on their answers, I moved to the second issue the diagnosis process of ADHD, which included the diagnostic stages, people involved in the diagnosis process, problems, and difficulties. The third issue was the treatment of ADHD, which included the different methods of treatment, the school context, and the role of school in dealing with ADHD pupils. Then we moved to the issue that was the family context which included mainly the parents' role in dealing with their ADHD child. Finally, we held a comparison between ADHD in the past and nowadays.

5.1.4 Trust-Worthiness (Reliability and Validity):

It is important to establish validity and reliability in any research. In the qualitative method research, reliability refers to the procedural trustworthiness of the study. Reporting the results of the interview should convey what another person who was observing or conducting the interview, would have seen or heard (Stiles, 1993). I have reported what the participants had said during the interview with full reliability and objectiveness. In order to keep reliability during the interviews, the researcher should focus on questions that the participants can answer from their own experiences. We can strengthen the reliability of the research by reflecting the researcher's understanding back to participants during the interview (Stiles, 1993). In my research, I have followed these procedures.

Regarding the validity of the study, it refers to the validity of the findings which can be valid if they resonate with the experience of others who have experienced the same phenomenon that the research is investing. (Osborne, 1994). Moreover, the validity of the study refers to the question whether the interpretation is internally consistent, useful, robust, generalizable, or fruitful (Stiles, 1993). When talking about validity the focus is on understanding by people, including the readers of the study, rather than on facts or producing a single true account of the research information (Osborn & Smith, 1998). In the current study, these issues were taken into consideration. Moreover, several participants were interviewed in this study and their perspectives were probed in depth in order to negotiate meaning to avoid misinterpretation.

5.1.5 Ethics issues:

There is number of ethical issues that the researcher should keep in mind, issues of secrecy, anonymity, and confidentiality. In order to insure maintaining ethics, I first explained the purpose of the study to the participants and made it clear that I will guard for my informant's anonymity and a depersonalization of their accounts. I also explained to them that their participation is completely voluntary and they are free to terminate the interview at any time.

5.1.6 Data Analysis:

I used the Thematic Content Analysis to present the qualitative data collected via the focus groups. The Thematic Content Analysis portrays the thematic content of the interviews transcripts through identifying common themes in the text. In this method, the researcher groups and distills from the texts a list of common themes in order to give expression to the communality of voices across participants (Anderson, 2004).

I have chosen this method because it has many advantages, first its flexibility, there is no one ideal way for conducting this method, and there are many different ways that can be adapted according to the researcher's needs. Second, this method is easy and quick to be learned and conducted. Third, it is a useful method for working within participatory research paradigm with participants as collaborators. Fourth, it can be used to summarize key features of a large body of data. Moreover, this method can generate unanticipated insights and allows for social as well as psychological interpretations of data (Braun and Clarke, 2006).

5.1.7 Participants:

6 Focus groups were selected, three from Israel consisting of 12 men and 19 women. Another three groups from the West Bank consisting of 17 men and 13 women. 3 participants had a professional diploma, 49 had a Bachelor's degree, 5 had a Master's degree and 3 had Ph.D. degree. 48 participants reported that they had worked with ADHD kids and 14 reported that they had not worked with ADHD kids.

Table 5.1. Demographic characteristics of the participants (focus groups)

Characteristic	Israel	West Bank	All participants
	N	*N*	*N*
Gender			
Men	12	17	29
Women	18	13	31
Education			
Diploma	0	3	3
B.A	25	24	49
M.A	3	2	5
PH.D	2	1	3
worked with ADHD kids			
Yes	26	22	48
No	6	8	14

The sample also contained 20 key informants such as psychologists, counselors, principals, lawyers, politicians, journalists and religious scholars, 10 were from Israel and 10 from the

West Bank. 11 had a Bachelor's degree, 6 had a Master's degree and 3 had Ph.D. degree. 2 were psychologists, 3 were social assistants, 3 were counselors, 2 were principals, 2 were lawyers, 2 were politicians, 2 were journalists, 2 were in religious sanity and 2 were in health and medicine.

Table 5.2. Demographic characteristics of the participants (key informants)

Characteristic	Israel	West Bank	All participants
	N	*N*	*N*
Gender			
Men	4	7	11
Women	6	3	9
Education			
Diploma	0	0	0
B.A	4	7	11
M.A	4	2	6
PH.D	2	1	3
worked with ADHD kids			
Yes	9	7	16
No	1	3	4
Profession			
Psychology	1	1	2
Social assistance	2	1	3
Counsel	1	2	3
Managerial	1	1	2
Lawyer	1	1	2
Politician	1	1	2
Journalist	1	1	2
Religious sanity	1	1	2
health and medicine	1	1	2

5.1.7 Results:

Thematic content analysis of the interviews with the participants revealed 10 distinct themes concerning ADHD. These themes were the factors of the ADHD, which include social factors, familial factors, biological factors, and nutritional factors. The diagnosis ADHD that contains the diagnosis reliability of ADHD. The treatment of ADHD that contains medical treatment, behavioral treatment, the school's role, and the parents' role. The commonality of ADHD.

Table 5.3: Themes mentioned by teachers in WB and Israel

Theme	Frequency		PERC TOT TXT	
	West Bank	**Israel**	**West Bank**	**Israel**
The factors of the ADHD				
social factors	**31**	25	4.83	3.61
familial factors	**32**	21	3.82	2.33
biological factors	21	**35**	2.71	3.67
nutritional factors	20	**33**	2.67	3.78
The diagnosis ADHD				
the diagnosis reliability of ADHD	35	36	4.73	4.82
The treatment of ADHD				
medical treatment	23	**33**	2.88	4.53
behavioral treatment	**27**	19	3.48	2.24
The school's role	36	35	4.93	4.91
The parents' role.	30	**36**	3.89	4.89
The commonality of ADHD	38	36	4.97	4.92

Teachers from the West Bank:

Thematic content analysis of the interviews with the participants from the West Bank revealed the 10 themes mentioned above (see table 5.3 above).

Of the themes mentioned above, the themes with the highest rate references were, first social factors (4.83 % of text). This is seen in quotes like" it's not only my personal beliefs, I have read many studies that had shown that the social context that the pupil live in has a significant effect on his development…… ADHD is connected to the social environment that the individual lives in" (Manar, female, 35, high school teacher)

Second, the familial factors, which seems to be also of great importance to the participants (3.78 % of the text), as one of them said: "ADHD runs in families, if we look at the family history we can see that it is inherited from someone in the family." A third theme with a very

high rate of references was behavioral treatment (2.24% of the text). An example of the importance of this theme can be seen in the following quote" " I believe that behavioral intervention is a great way to provide an opportunity for the ADHD child to benefit from teaching-learning experiences provided by teachers, parents and others, in order to acquire desirable norms and behavior codes…" (Yosif, male, 35 years, psychologist).

Teachers from the Israel:

Thematic content analysis of the interviews with the participants from the Israel revealed the 10 themes mentioned above (see table 5.3 above).

Of the themes mentioned above, the themes with the highest rate references were, first biological factors (3.67 % of text). This is seen in quotes like" ADHD is a disorder with an underlying biological cause….. many biological factors such as brain functions have a significant impact on ADHD" (Nadia, female, 45, counselors)

Second, nutritional factors, which seems to be also of great importance to the participants (3.82 % of the text), as one of them said: ""Previous scientific studies have shown that some food colorings and flavorings may play a role in triggering hyperactive behavior…. " (Shadi, male, 39, Neurologist)." A third theme with a very high rate of references was medical treatment (4.53% of the text). An example of the importance of this theme can be seen in the following quote" many pupils take Stimulant medications in order to control symptoms so that the child can concentrate during the lesson." (Dunia, female, 49 years, principal). Finally, the last theme to emerge with a high rate of references is the parents' role. (4.89 % of text). The importance of the parents' role can be seen in the following quote "the way the pupil behave relies on the parental methods, parents should teach their children morals and normal behavior since an early age…" (Ziad, male, 60, imam)

Common themes:

 According to the results there were three themes that were almost equally referred to by teacher from the two geographical areas. First, the diagnosis reliability of ADHD which were of a high reference among teacher from both West Bank (4.73% of the text) and Israel (4.82% of the text). This is seen in expressions like "… up to this point I don't know how to decide whether a child is an ADHD or not. " (Khalid, male, 57, school teacher, West Bank), or " the diagnosis process of ADHD is unreliable because it's very subjective, there are many energetic pupils that had been referred to as ADHD." (Sarah, female, 52, an early childhood teacher, Israel)

Another theme that had been equally referred to by the two groups were the school's role (4.93% of the text by West Bank teachers and 4.91% of the text by Israeli teachers).

"…schools can help ADHD pupils by adapting special ways of teaching these pupils, these methods should be adapted by all of the teachers." (Mahmood, 28, social worker, West Bank), or "Pupils sped most of their time at school, therefore it's the schools responsibility to solve the pupils' behavioral problems…" (Abeer, female, 26, journalist, Israel)

Finally, the theme of the commonality of ADHD, which was also highly referred to by both West bank teachers (4.92 % of the text) and Israeli teachers (4.97% of the text). An example of the importance of this theme can be seen in the following quotes: "the number of ADHD pupils have increased during the years, I can't remember that we had to deal with such phenomenon in the past." (Qassim, male, 60, school psychologist, West Bank), or "in the past we didn't even hear about this disorder, while today it's very common. " (Mohammad, male, 55, head of the community center, Israel).

5.1.9 Discussion:

The main objective of this study was to find the common themes and dimensions connected to ADHD diagnosis. The hypothesis of the current study was the dimensions related to ADHD diagnosis are common for all of the two geographic areas (WB and IL). As seen by the thematic content analysis, the teachers and the key informants of the two geographic areas mentioned the same dimensions of connected to ADHD in the interviews. After the analysis of the interview, the following dimensions were found: the factors of the ADHD, which include social factors, familial factors, biological factors, and nutritional factors. The diagnosis ADHD that contains the diagnosis reliability of ADHD. The treatment of ADHD which contains medical treatment, behavioral treatment, the school's role and the parents' role. The commonality of ADHD.

While all of the 10 themes were found in the two populations, the seven differed one from another in the prominence of each theme, and three were almost equally referred to. The prominent themes for the West Bank group were social factors, familial factors and behavioral treatment. Starting with the social level, as I have mentioned in my literary review, many studies have shown that much progress has been made in Israel to increase the tolerance for person with disabilities including ADHD (Scheinin, 1990). But according to the study which was conducted by Harazni (2012), we can see that the social acceptance for ADHD children is more limited in West Bank than in Israel and the nature of social solidarity in West Bank societies enlarge the effect of the social contexts on ADHD (Harazni, 2012).The familiar factors are of a great importance, on the familiar level, according to the studies which I have presented in my literary review, we can see that families in West Bank usually face more difficulties in dealing with ADHD children, families do not even trust the

educational system for dealing with their children. (Harazni, 2012; Marrar et al., 2011; Abu Alghaib, 2012). However, if we look at the situation in Israel we can see that families in Israel have more support and available services, "Israel has a relatively strong mental health delivery system and well-developed child and psychiatric and neurological services. Nevertheless, there is much room for improvement in the diagnosis and treatment of ADHD." (Farbstein, et al., 2014, p. 573).

The prominent themes for the Arab-Israeli group were biological factors, nutritional factors, medical treatment, and the parents' role.

There has been a significant part of research that has shown that ADHD has heredity basis. Studies have showed that "If your child has a close relative who has been diagnosed with ADHD, this increases their chance of being diagnosed with ADHD. (Borrill, 2000, p. 10)

According to the study of Bart, Podoly and Bar-Haim (2010) the use of medicine for treating ADHD is widely used and is considered a first line treatment for children with this disorder in Israel. In addition, due to the fact that the economic situation in West Bank is difficult and they rely on donations for their medical supplies (WHO, 2013). I can draw a conclusion that Palestinians are forced to use alternative methods for the treatment of ADHD that are more available and less expensive. Consequently, Palestinians tend to rely on behavioral treatment for ADHD.

Regarding the nutritional factors, according to Cortese and his collegues (2014) an increasing number of clinical and epidemiological studies suggest a possible association between ADHD and obesity/overweight (Cortese, et. al, 2014). Resent statistics have shown that the rate of overweight children in Israel have recently raised and climbed into the third place after the USA and Greece for percentages (Ben-Sefer, Ben-Natan, & Ehrenfeld, 2009). This can explain the high reference for nutritional factors in the Israeli participants.

While each of the three groups had unique reference for some themes in the list of the most prominent themes, three themes were common for the two groups. These were the diagnosis reliability of ADHD, the school's role and the commonality of ADHD. It is not surprising that the diagnosis reliability of ADHD theme was a major theme for all groups, since many errors and confusion has been claimed regarding the diagnosis of ADHD, which was also called pseudo ADHD, which means manifestation of a set of behaviors that mimic ADHD, but are actually the result of environmental influences such as fast food, fast-paced media and video games, and a pervasive societal attitude toward immediate gratification. (The National Center for Mental Health in Schools at UCLA, 2014 ; Harazni, 2012; Hallowel & Ratey, 1994).

Regarding the school role, it was also referred of great importance in a number of previous studies, since the school comes in the second place after home in which the pupil learn and a quire different skill both educational and social. (Sciberras et al, 2013; Steiner, et al., 2014; Dor, 2013). Finally, previous studies have shown that there have been an increase in the prevalence of ADHD worldwide (Cortese, et. al, 2014, Sciberras et al, 2013, Farbstein, et al., 2014).

This study was a pilot study according to which I have drawn the hypotheses of the second phase of my study.

5.1.10 Limitations:

The main limitation of the study is the nature of its qualitative method. These limitations include restricted boundaries to external and internal validity. The external validity of this study is limited due to the inability to generalize the findings of this study to other groups, populations, or individuals because the results represent only the words and experiences of the study's participants. However, the qualitative method never aims to state objective truths within a phenomenon, or to generalize the results (Hoyt & Bhati, 2007). Additional limitation of this study is potential interviewer and research team bias. Despite the strong measures, which were taken to avoid vagueness the data collection, and analysis, it is likely that some aspect of the personalities of the researchers interacted with the research process. One aspect to consider is the interview protocol, perhaps the interviewer's biases prevented the participants from responding to the best questions on the research topic. All of these limitations are aspects for consideration and caution in future research.

5.2 Study 2: Is Medicine the only answer? A quantitative analysis of stereotypes and prejudices on ADHD in Israel and Palestine.

5.2.1 Aims and scopes:

The goals of the current study was to examine

1- The effect of social factors on ADHD both in Israel and in the West Bank.
2- The effect of familiar factors on ADHD both in Israel and in the West Bank.
3- The effect of biological factors on ADHD both in Israel and in the West Bank.
4- The effect of nutritional factors on ADHD both in Israel and in the West Bank.
5- The reliability of current diagnosis ways for ADHD both in Israel and in the West Bank.
6- The prevalence of medical treatment for ADHD both in Israel and in the West Bank.
7- The prevalence of behavioral treatment for ADHD both in Israel and in the West Bank.
8- The school role in dealing ADHD both in Israel and in the West Bank.
9- The parents' role in dealing ADHD both in Israel and in the West Bank.
10- The prevalence of ADHD both in Israel and in the West Bank nowadays compared to the past.

5.2.2 The hypotheses:

H1 The social factors have a more significant effect on ADHD in the West Bank than in Israel

H2 Familial factors have a more significant effect on ADHD in the West Bank than in Israel

H3 biological factors have a more significant effect on ADHD in Israel than in the West Bank

H4 nutritional factors have more significant effect on ADHD in Israel than in the West Bank

H5 the current diagnosis ways for ADHD are not fully reliable, both in Israel and in the West Bank

H6 medical treatment for ADHD is more common in Israel than in the West Bank

H7 behavioral treatment for ADHD is more common in the West Bank than in Israel,

H8 schools have a significant role in dealing with ADHD both in Israel and in the West Bank

H9 parents have a more significant role on ADHD in Israel than in the West Bank

H10 ADHD is more common nowadays than it was in the past, in both Israel and the West Bank

5.2.3 Methods:

The variables of study

The Study included 10 main variables, which can be divided into first, the factors of the ADHD, which include social factors, familial factors, biological factors, and nutritional factors. Second, the diagnosis ADHD that contains: the diagnosis reliability of ADHD. Third, the treatment of ADHD that contains: medical treatment, behavioral treatment, the school's role, and the parents' role. Finally, The commonality of ADHD.

5.2.4 The Procedures:

Participants were approached by the researcher or by one of his colleagues. The purpose of the study was explained to them. They were also informed that participation was voluntary; that there was no compensation for participating in the study; that there were no known risks associated with participating in the study; that they could withdraw from the study at any time; and that all data collected will be held in the strictest confidence. Additionally, it was disclosed that no identifying information was requested and that informed consent was implied by their participation in the study.

5.2.5 Instruments:

The tool of the study was "Teachers' thoughts towards ADHD (Attention Deficit Hyperactivity Disorder)" (see appendix) which is a closed questionnaire; it is composed of two parts. The first part is composed of 59 features, which the participates were supposed to rate according to different scales. The second part of the questionnaire contains the general information of the respondents addressing the personal characteristics used in the conceptual framework and their previous experience with ADHD like gender, education, marital status, teaching experience, and previous experience with ADHD children.

Some minor changes were done in the Italian version when translated into Arabic in order to make it more convenient for the targeted population. First, the ID number was removed because it is a threatening detail for the participants; we wanted to make sure that they feel safe when filling the questionnaire. Second, we have changed the formation of some questions in order to make them clearer to the participants. Finally, we had to delete some questions from the Italian version because they mentioned a booklet about ADHD which was distributed in Italy and not in Israel or the West Bank.

5.2.6 Participants:

324 participants took part in the study, of them 149 were from Israel and 175 were from the West Bank. Their seniority ranged between 0 and 38 years, with an average of 13.3 years. More of their demographic characteristics are shown in table 5.4

Table 5.4. Demographic characteristics of the participants

Characteristic	Israel		West Bank		All participants	
	N	*N%*	*N*	*N%*	*N*	*N%*
Gender						
Men	58	38.9%	100	57.1%	158	48.8%
Women	91	61.1%	75	42.9%	166	51.2%
Marital Status						
Bachelor	21	14.1%	37	21.1%	58	17.9%
Married	126	84.6%	136	77.7%	262	80.9%
Divorced	2	1.3%	0	0.0%	2	0.6%
Widowed	0	0.0%	2	1.3%	2	0.6%
Taught kids with ADHD						
Yes	128	85.9%	69	39.9%	197	61.2%
No	21	14.1%	104	60.1%	125	38.8%

As can be seen in table 5.4., about 51% of overall participants were women, and while about 61% of Israeli participants were women, only 42.9% of the participants from the West Bank were women. About 81% of participants were married and about 18% were bachelors, were among Israeli participants about 85% were married and about 14% were bachelors, while among West Bank participants about 78% were married and about 21% were bachelors. Finally, overall, about 61% of participants have taught kids with ADHD. However, among Israeli's, about 86% have taught kids with ADHD and among West Bank participants only about 40% have taught kids with ADHD. Results are also shown in Diagrams 5.1-5.3
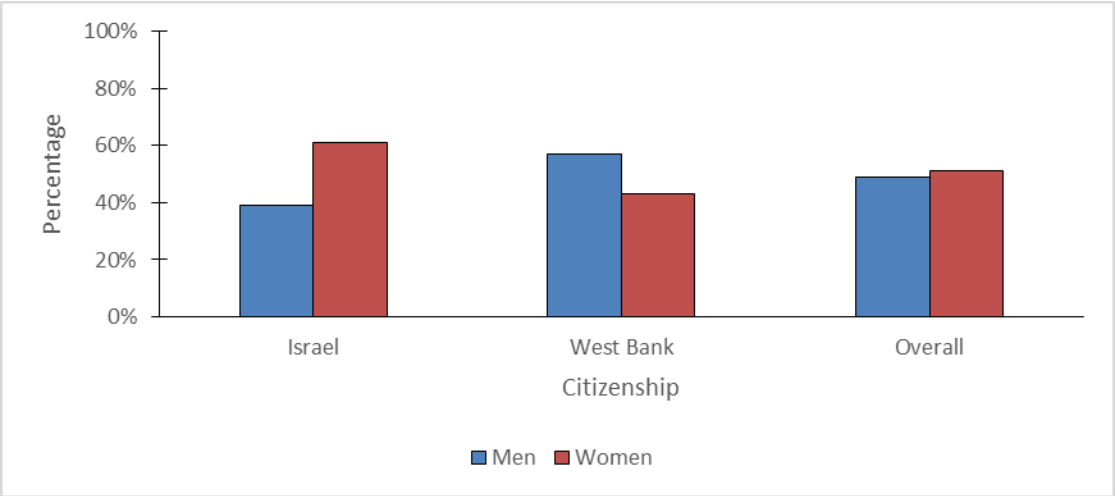
Diagram 5.1. Gender by citizenship

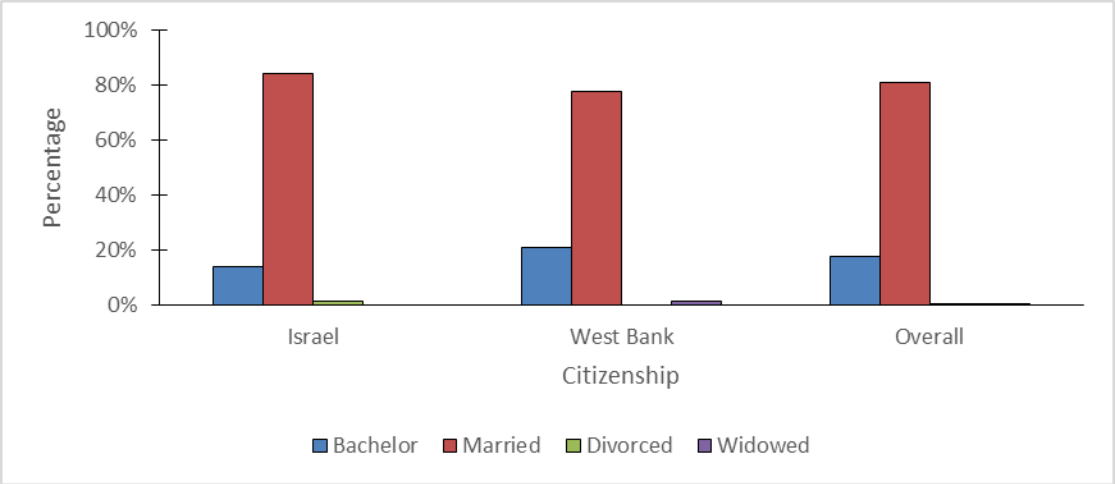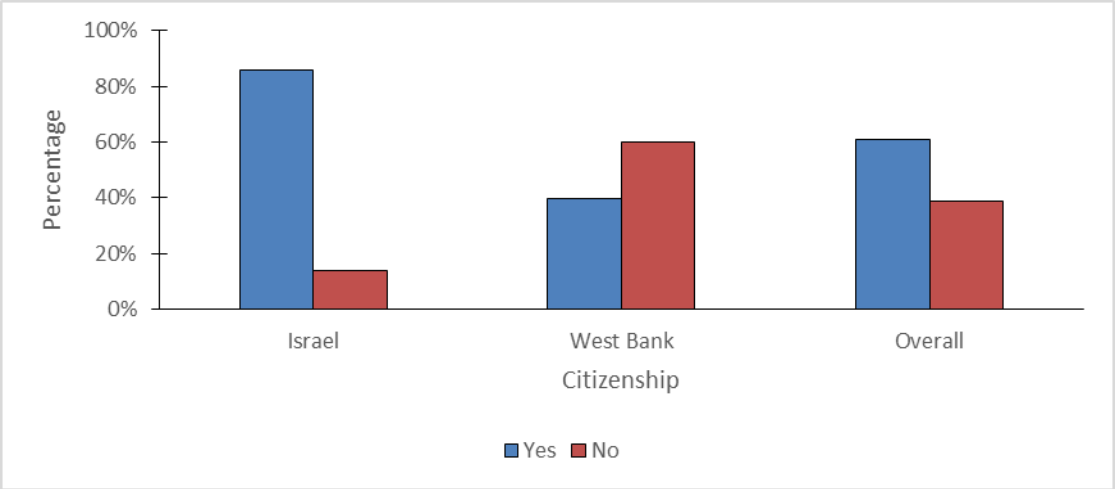**Diagram 5.2. Marital Status by citizenship**

Diagram 5.3. Experience with kids with ADHD by citizenship

5.2.7 Reliability and validity:

While reliability is defined as the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials or in the other words a measure/test is considered reliable if it would give us the same result over and over again. In my research I used closed questionnaire therefore I'm sure that a repeated study will yield the same results.

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. My questionnaire measures exactly the variables of the study. The construct validity that I used in my study is "criterion validity". It was aimed to demonstrate the ability of measuring how well one variable or a set of variables predicts an outcome based on information from other variables.

5.2.8 Data analysis:

In order to analyze the data, several mean were used. First, a Mann-Whitney test was selected, which is a non-parametric statistical technique. This test is used to analyze differences between the medians of two data sets. The Mann-Whitney Test is the nonparametric test employed with ordinal data in a hypothesis testing involving a design with two independent samples indicates the groups are different. It is based on the following assumptions: each sample has been randomly selected from the population it represents, the two samples are independent of one another, and the original variable observed is a continuous random variable (Milenovic, 2011). Second t tests were used to evaluate the difference in means between two groups and assumes that the variables are normally distributed within each group and that the variation of scores in the two groups is not reliably different (Wienbach & Grinnell, 2007). Finally, two Wilcoxon signed rank tests which is a statistical hypothesis test that is used when comparing two related samples, matched samples, or repeated measurements on a single sample (Jerkku, 2014) .

5.2.9 Results:

<u>Hypothesis #1</u>

In order to test hypothesis #1, which states that the social factors have a more significant effect on ADHD in the West Bank than in Israel, a Mann-Whitney test was conducted. Results are shown in table 5.5.

Table 5.5. Results of the Mann-Whitney test to examine the difference in the social factors between the West Bank and Israel

Citizenship	*N*	*Mean Rank*	*Sum of Ranks*	*Median*	*U*	*Z*
Israel	149	156.67	23344.50	1		
West Bank	175	167.46	29305.50	1	12169.50	-1.19
Total	324					

As can be seen in table 5.5, no significant difference was found in the social factors between teachers from Israel and the West Bank [*Z*=-1.19, *p*>0.05]. Hypothesis #1 has not been confirmed.

<u>Hypothesis #2</u>

In order to test hypothesis #2, which states that familial factors have a more significant effect on ADHD in the West Bank than in Israel, a Mann-Whitney test was conducted. Results are shown in table 5.6.

Table 5.6. Results of Mann-Whitney test to examine the difference in the familial factors between the West Bank and Israel

Citizenship	*N*	*Mean Rank*	*Sum of Ranks*	*Median*	*U*	*Z*
Israel	146	142.09	20745.50	2		
West Bank	172	174.28	29975.50	2	10014.50	-3.34[*]
Total	324					

[**]*p*<0.01

As can be seen in table 5.6, as was expected, the familial factors in the West Bank (*Mean Rank*=174.28) were higher than in Israel (*Mean Rank*=142.09), significantly [*Z*=-3.34, *p*<0.01]. Hypothesis #2 has been confirmed. Results are also shown in diagram 5.4.

Diagram 5.4. Means[3] of acceptance levels of familial factors by citizenship

Hypothesis #3

In order to test hypothesis #3, which states that biological factors have a more significant effect on ADHD in Israel than in the West Bank, a Mann-Whitney test was conducted. Results are shown in table 5.7.
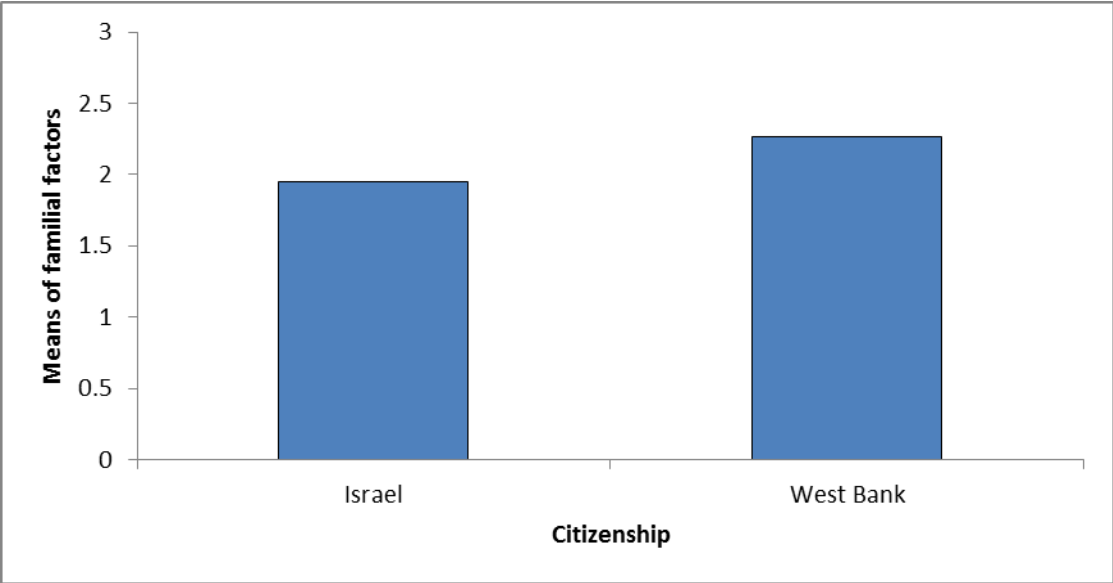
Table 5.7. Results of Mann-Whitney test to examine the difference in the biological factors between the West Bank and Israel

Citizenship	N	Mean Rank	Sum of Ranks	Median	U	Z
Israel	149	164.12	24453.50	2		
West Bank	175	161.12	28196.50	2	12796.50	-0.31
Total	324					

As can be seen in table 5.7, no significant difference was found in the biological factors between teachers from Israel and from the West Bank [Z=-0.31, p>0.05]. Hypothesis #3 has not been confirmed.

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[3] Although Mann-Whitney test was used, it was decided to depict the differences between groups using means and not medians, because the medians of the two groups were equal.

In order to test hypothesis #4, which states that nutritional factors have more significant effect on ADHD in Israel than in the West Bank, a Mann-Whitney test was conducted. Results are shown in table 5.8.

Table 5.8 Results of Mann-Whitney test to examine the difference in the nutritional factors between the West Bank and Israel

Citizenship	N	Mean Rank	Sum of Ranks	Median	U	Z
Israel	149	172.03	25633.00	1		
West Bank	175	154.38	27017.00	1	11617.00	-1.90[*]
Total	324					

[*]$p<0.05$

As can be seen in table 5, as expected, the nutritional factors in Israel (*Mean Rank*=172.03) were higher than in the West Bank (*Mean Rank*=154.38), significantly [Z=-1.90, $p<0.05$]. Hypothesis #4 has been confirmed. Results are also shown in diagram 5.5.

Diagram 5.5 Means[4] of acceptance levels of nutritional factors by citizenship

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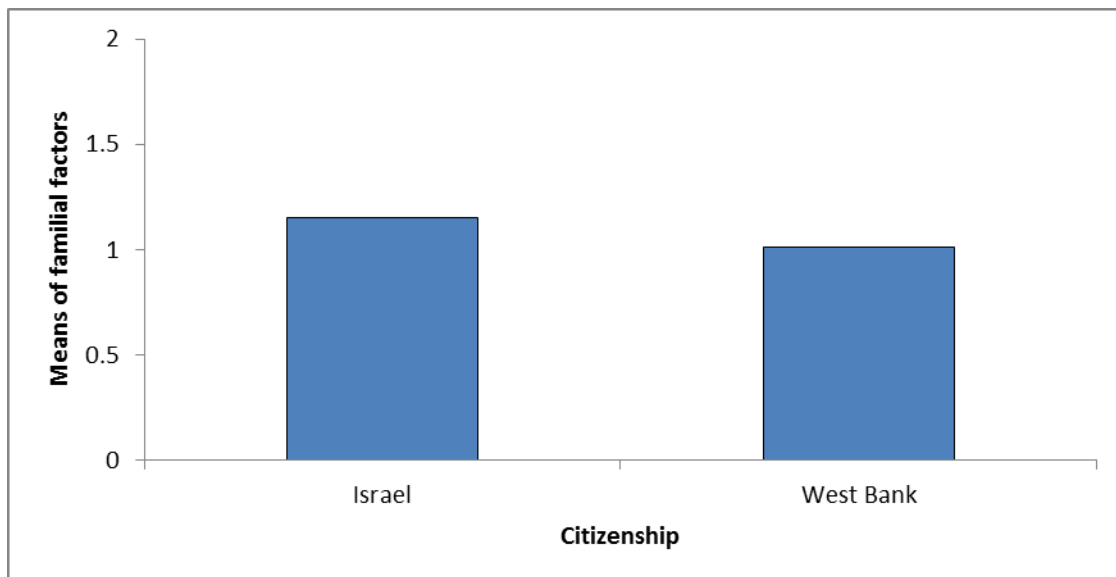
[4] See note 1

<u>Hypothesis #5</u>

In order to test hypothesis #5, which states that the current diagnosis ways for ADHD are not fully reliable, both in Israel and in the West Bank, two one sample t tests were conducted – one for Israel and one for the West Bank. In order to do so, the average of the diagnosis reliability variable was compared to the value '3'. A result significantly lower than 3 was expected. Results are shown in table 5.9.

Table 5.9 Results of two one-sample t tests to examine the diagnosis reliability in Israel and in the West Bank

	M	*SD*	*df*	*t*
Israel	3.01	0.53	148	-0.15
West Bank	3.50	0.48	174	13.71[***]

[***]*p*<0.001

As can be seen in table 6, in contrast to the hypothesis, the average of the diagnosis reliability, both in Israel (*M*=3.01) and in the West Bank (*M*=3.50) was higher than 3. Hypothesis #5 was not confirmed.

<u>Hypothesis #6</u>

In order to test hypothesis #6, which states that medical treatment for ADHD is more common in Israel than in the West Bank, a t test for independent groups was conducted. Results are shown in table 5.10.

Table 5.10 Results of a t test for independent samples to examine the difference in medical treatment between Israel and the West Bank

	Israel		West Bank		*df*	*t*
	M	*SD*	*M*	*SD*		
Medical Treatment	3.57	0.40	3.26	0.53	273.41[5]	-5.83[***]

[***]*p*<0.001

As can be seen in table 5.10, the average of the medical treatment in Israel (M=3.57, SD=0.40) was higher than in the West Bank (*M*=3.26, *SD*=0.53), significantly [*t*(273.41)=-5.83, *p*<0.001]. Hypothesis #6 was confirmed. Results are also shown in diagram 5.6.

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[5] Due to the violation of the equality of variances assumption, the degrees of freedom were reduced

Diagram 5. 6 Means and standard deviations of medical treatment by citizenship

Hypothesis #7

In order to test hypothesis #7, which states that behavioral treatment for ADHD is more common in the West Bank than in Israel, a t test for independent groups was conducted. Results are shown in table 5.11.

Table 5. 11 Results of the t test for independent samples to examine the difference in behavioral treatment between Israel and the West Bank
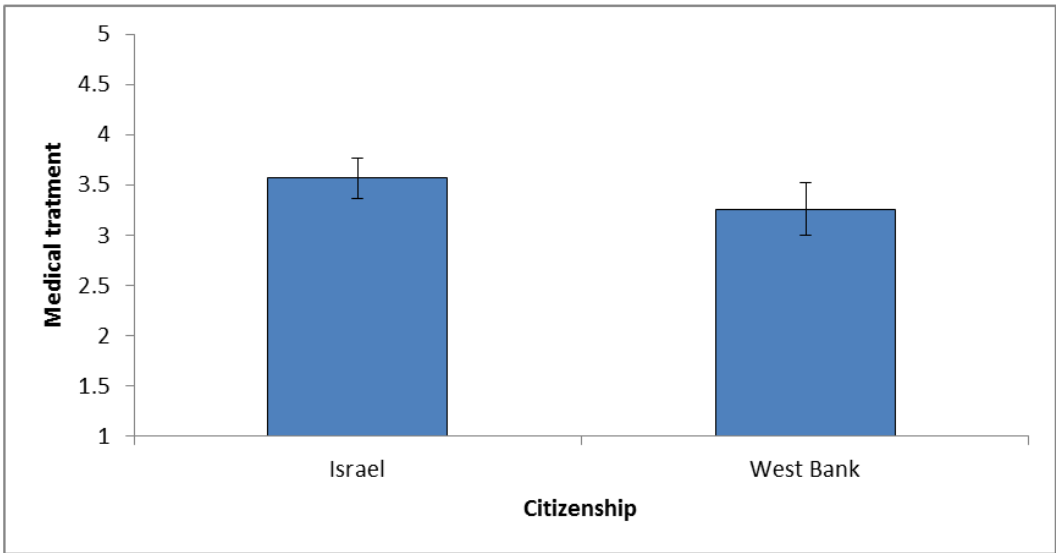
	Israel		West Bank		df	t
	M	*SD*	*M*	*SD*		
behavioral Treatment	2.74	0.45	2.47	0.48	322	5.33[***]

[***]$p<0.001$

As can be seen in table 5.11, in contrast to the hypothesis, the average of the behavioral treatment in Israel (*M*=2.74, *SD*=0.45) was higher than in the West Bank (*M*=2.47, *SD*=0.48), significantly [*t*(322)=5.33, *p*<0.001]. Hypothesis #7 was not confirmed. Results are also shown in diagram 5.7.

Diagram 5.7 Means and standard deviations of medical treatment by citizenship
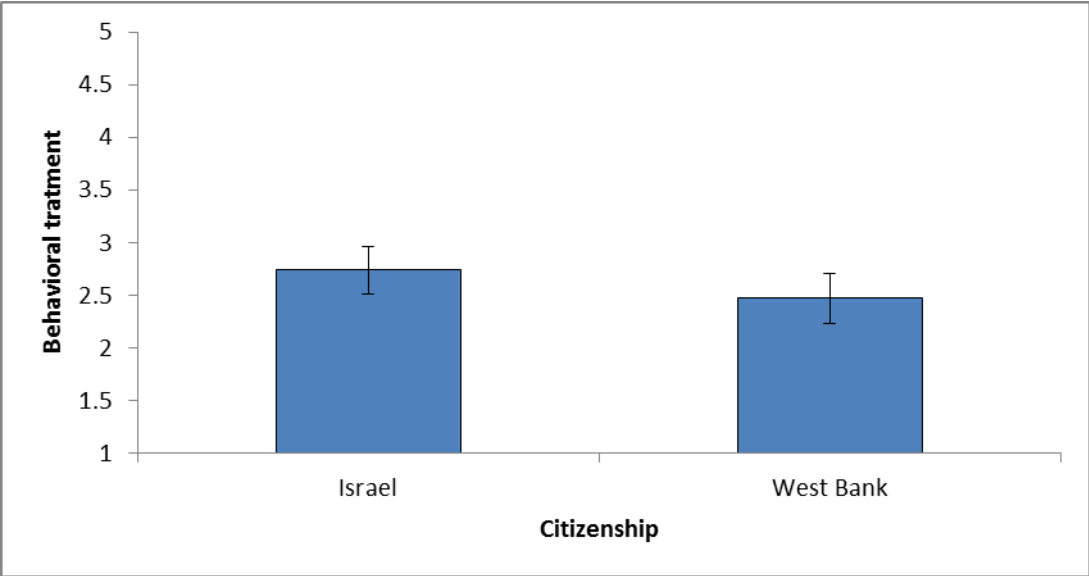
Hypothesis #8

In order to test hypothesis #8, which states that schools have a significant role in dealing with ADHD both in Israel and in the West Bank, two one-sample t tests were conducted – one for Israel and one for the West Bank. In order to do so, the average of the School's role variable was compared to the value '3'. A result significantly higher than 3 was expected. Results are shown in table 5.12.

Table 5.12 Results of two one-sample t tests to examine the school's role in Israel and in the West Bank

	M	*SD*	*df*	*t*
Israel	4.08	0.58	148	1.58
West Bank	2.80	0.52	174	-5.19*

***p<0.001

As can be seen in table 5.12, the school's role in Israel (*M*=4.08, *SD*=0.58) was significantly higher than 3 [*t* (148) =1.58, *p*>0.05]. But, in contrast to the hypothesis, the average of the school's role in the West Bank (*M*=2.80) was lower than 3. Hypothesis #8 was partly confirmed.

In order to test hypothesis #9 that states that parents have a more significant role on ADHD in Israel than in the West Bank, a t test for independent groups was conducted. Results are shown in table 5.13.

Table 5. 13 Results of the t test for independent samples to examine the difference in parent's role between Israel and the West Bank

| | Israel | | West Bank | | df | t |
	M	*SD*	*M*	*SD*		
Parent's role	3.06	0.70	2.59	0.70	322	6.00[***]

[***]*p<0.001*

As can be seen in table 5.13, as expected, the parent's role in Israel (*M*=3.06, *SD*=0.70) was higher than in the West Bank (*M*=2.59, *SD*=0.70), significantly [$t(322)=6.00$, *p<0.001*]. Hypothesis 9 was confirmed. Results are also shown in diagram 5.8.

Diagram 5.8 Means and standard deviations of parent's role by citizenship
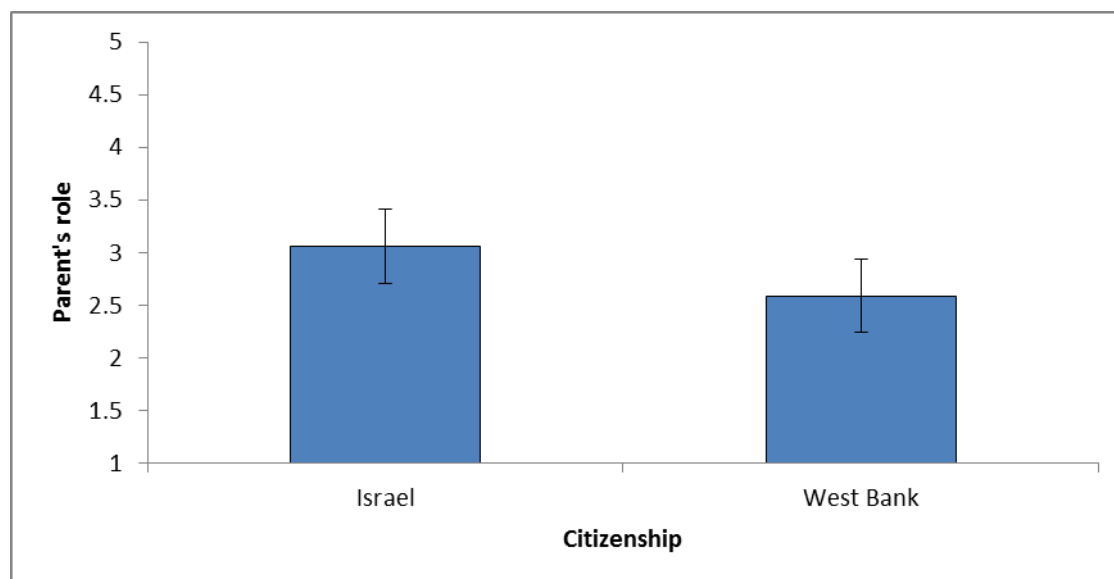
Hypothesis #10

In order to test hypothesis #10 which states that ADHD is more common nowadays than it was in the past, in both Israel and the West Bank, two Wilcoxon signed rank tests were conducted – one for Israel and one for the West Bank. In each test, the median of the ADHD commonality variable was compared to the value '3'. Results are shown in table 5.14-5.15.

Table 5.14 Results of Wilcoxon signed rank test to examine the commonality of ADHD in Israel

	N	Mean Rank	Sum of Ranks	Z
Negative Ranks	116	68.40	7934.50	
Positive Ranks	13	34.65	450.50	
Ties	20			-8.90[***]
Total	149			

[***]$p<0.001$

Table 5.15 Results of Wilcoxon signed rank test to examine the commonality of ADHD in the West Bank

	N	Mean Rank	Sum of Ranks	Z
Negative Ranks	90	63.22	5689.50	
Positive Ranks	53	86.92	4606.50	
Ties	32			-1.10
Total	175			

As can be seen in table 5.14, the Median of the ADHD commonality in Israel was higher than 3. Also, as can be seen in table 5.15, the Median of the ADHD commonality in the West Bank was higher than 3. Hypothesis 10 was confirmed.

5.2.10 Discussion:

The aim of the second part of the research was to examine the diagnosis of ADHD in Israel and in Palestine: Stereotype, Prejudice and the Influence of the school system polices. This part was based on the quantitative method, a questionnaire was used to examine the different dimensions which were extracted by the focus groups and the key informants' interviews in the first part of the study (the qualitative part).

The first hypothesis claimed that the social factors have a more significant effect on ADHD in the West Bank than in Israel. According to the data analysis, no significant difference were seen between the two areas. Therefore, the hypothesis was not confirmed. This can be explained by the sociocultural diversity of the population of Israel that appears to play a major role on ADHD. According to a study conducted by Hinshaw and his colleagues (2011),

there is a significant difference between the Jewish and the Arab population in Israel regarding both the awareness to the phenomenon of ADHD and the availability of therapeutic services. Moreover, this can be explained by the high tolerance for excessive activity in Israeli classrooms. (Hinshaw, et al, 2011). Moreover, the teachers in the areas share the same culture and customs, they are both Arab and many of them share the same religion, Islam, consequently both have almost the same social structure (Beinin & Hajjar, 2014).

The second hypothesis which claimed that familial factors have a more significant effect on ADHD in the West Bank than in Israel, this hypothesis was confirmed. According to the data analysis the effect of the familial factors in the West Bank were higher than in Israel. This result can be explained by the nature of the family structure in the West Bank, it is obvious that the traditional family structure was maintained by the Arab society in Palestinian, which is characterized by high prevalence of marriage between first degree relatives (Palestinian Central Bureau of Statistics, 2006). Furthermore, the Arab society in Israel have undergone a modernization process due to their living with a western community such as the Jews. One result of this process is the disintegration of family relations (Haj-Yahia, 1994).

The third hypothesis claimed that biological factors have a more significant effect on ADHD in Israel than in the West Bank. According to the data analysis, no significant difference was found in the biological factors between teachers from Israel and from the West Bank. Therefore, this hypothesis has not been confirmed.

The fourth hypothesis which claimed that that nutritional factors have more significant effect on ADHD in Israel than in the West Bank was confirmed. According to the data analysis the effect of the nutritional factors in Israel were significantly higher than in the West Bank. This result can be explained by looking at the general nutrition of Israeli children. Israeli children's nutrition is full with food colorings, preservatives, artificial flavorings and fragrance materials, which were proven to have an effect of the ADHD among children. Moreover, in recent years the relationship between ADHD and excessive eating, could lead to extreme obesity (Raziel, Sakran & Goitein ,2014). Furthermore, the rate of overweight children in Israel have recently raised and climbed into the third place after the USA and Greece for percentages (Ben-Sefer, Ben-Natan, & Ehrenfeld, 2009)

The fifth hypothesis stated that the current diagnosis ways for ADHD are not fully reliable, both in Israel and in the West Bank. This hypothesis was no supported because according to the data analysis the average of the diagnosis reliability, both in Israel and in the West Bank was higher than 3.

The sixth hypothesis which claimed that medical treatment for ADHD is more common in Israel than in the West Bank, was confirmed. According to the data analysis, the average of the medical treatment in Israel was higher than in the West Bank. As I have mentioned before in the thesis the main way of treatment for ADHD in Israel is using Ritalin, despite the cultural diversity of the Israeli population, this can be explained according to the results of previous studies such as Safer and Krager (1995) and Fogelman and Kahan (2001) which both showed a lack of correlation between socioeconomic status and methylphenidate use. (Safer & Krager , 1988 ; Fogelman & Kahan, 2001)

The seventh hypothesis stated that behavioral treatment for ADHD is more common in the West Bank than in Israel. This hypothesis was not confirmed, because according to the data analysis the average of the behavioral treatment in Israel was higher than in the West Bank.

The eighth hypothesis that claimed that schools have a significant role in dealing with ADHD both in Israel and in the West Bank was partly confirmed. According to the data-analysis Schools has a significant role in dealing with ADHD, while in the West Bank they do not. In addition, the ninth hypothesis claimed that parents have a more significant role on ADHD in Israel than in the West Bank; data analysis showed that parent's role in Israel was higher than in the West Bank. Therefore, Hypothesis 9 was confirmed.

The two hypotheses eighth and ninth can be explained by the fact that schools come in the second after place in which pupils spend most of their time, according to the Social-ecological theories the macro-environment that includes social, economic, policy factors, and distal social environments that include neighborhood, school, community factors, are important factors influencing individuals' developmental trajectories. Additional important factors are proximal influences that may include parent–child interactions, parental mental health, and children's relationships with their teachers and peers. Previous studies have shown that for individuals with ADHD family context, child factors such as IQ, comorbid mental health problems; ADHD severity/subtype, homework management, and interventions (education programs; stimulant medication) may influence outcomes (Sciberras et al, 2013).

Moreover, Treatments can relieve many symptoms of ADHD, but there is currently no cure for the disorder. With treatment, most people with ADHD can be successful in school and lead productive lives. Researchers are developing more effective treatments and interventions, and using new tools such as brain imaging, to understand ADHD better and to find more effective ways to treat and prevent it (Steiner, et al., 2014).

In addition, beginning in the mid-1990s, the Israeli Ministry of Education set a policy of homeschool collaboration, since then there have been a number of structural reforms, and plans call for recognizing the parents as significant factors in the children's formal education, emphasizing the system's commitment to communicate openly with parents on a regular basic and to work in a coordinated and structured way to achieve and to define mutual educational goals. (Dor, 2013, p. 7)

The tenth hypothesis that claimed that ADHD is more common nowadays than it was in the past. According to data analysis, this hypothesis was not confirmed. This hypothesis contradict with the findings of many previous studies (Cortese, et. al, 2014, Sciberras, et al 2013, Farbstein, et al., 2014).

5.2.11 Limitations:

All methods of research have limitations associated with them. The limitations inherent in any self-reporting tool are the major assumption that all participants would answer the questions truthfully. Therefore, there are some limitation associated with this issue respondent bias, reliance of author perceptions, and over-estimation of the use of research findings.

Moreover, as with every self-completion questionnaire there are a number of limitations expected with this tool; first, self-completion questionnaire typically has a low response rate, especially if the participation in the study is voluntarily, in that case the commitment to answering the questions in a serious way cannot be fully guaranteed. Second, it is difficult to get in-depth information; the answers are according to scale and numeric. Third, ambiguities can arise in the questionnaire both for the respondent while filling out the questionnaire and the researcher during the analysis of the data. Fourth, due to the nature of the questionnaire respondents do not necessarily report their beliefs, attitudes, opinions etc. accurately. Finally, there is likely to be a social desirability response bias, as respondents may answer the questions in the way that shows them in a good light.

VI. General Discussion

Attention-Deficit Hyperactivity Disorder, a.k.a. ADHD is the disorder with the superior position among children. This neurodevelopmental disorder is characterized by either inattention or impulsivity -hyperactivity symptoms or by both. These symptoms are usually detected during the childhood but can also persist into adulthood. The recent significant increase in the prevalence of ADHD raised a growing public health concern, because the negative consequences that this disorder may have not only on the academic achievement, but also on the social functioning. "ADHD is considered to be developed from an interaction between genetic and environmental factors -include prenatal and neonatal exposure to manganese -with numerous developmental neuro-toxicants is significantly increasing the risk of ADHD diagnoses. (Malin, & Till, 2015, p. 1)

The importance of the proper diagnosis at the right time rises from the nature of this disorder, ADHD is neither a viral disease, which the body can overcome by its own, nor an infectious disease that can be treated with antibiotic and last for few days. ADHD causes "problems and difficulties will remain forever, and orients the view of a possible future. The construction or the meaning of the child as a structurally deficient implies that s/he is constantly being at risk for inadequate development and represents a permanent risk to the contexts s/he inhabits because of his /her pathological inability to communicate with others" (Frigerioa, Montalia & Fineb, 2013b, p. 257).

"The quantitative results obtained from the self-report measures may usefully be discussed both in their own light and in the light of the qualitative information provided by the content analysis of written accounts and narratives" (Veronese, et al., 2012; p. 228).

Theme	Part 1 qualitative information	Part 2 quantitative results	
The factors of the ADHD			
social factors	in West Bank more than in Israel	No significant difference	H1 wan not supported
familial factors	in West Bank more than in Israel	in West Bank more than in Israel	H2 was supported

biological factors	In Israel more than in the West Bank	No significant difference	H3 was not supported
nutritional factors	In Israel more than in the West Bank	In Israel more than in the West Bank	H4 was supported
The diagnosis ADHD the diagnosis reliability of ADHD	No significant difference negative	No significant difference positive	H5 was not supported
The treatment of ADHD			
medical treatment	In Israel more than in the West Bank	In Israel more than in the West Bank	H6 was supported
behavioral treatment	in West Bank more than in Israel	In Israel more than in the West Bank	H7 was not supported
The school's role	No significant difference	In Israel more than in the West Bank	H8 was partly supported
The parents' role	In Israel more than in the West Bank	In Israel more than in the West Bank	H9 was supported
The commonality of ADHD	No significant difference	No significant difference	H10 was supported

If we look at the two studies findings, we can see that they correspond in many issues, firstly, the two studies have shown that the familiar factors have more effect in West Bank than in Israel, this can be explained inter alia, by the findings of the study conducted by Guido Veronese and his colleagues (2015), in their study, they emphasize the importance of the family in the wellbeing of children. Moreover, because of the difficult life under occupation that the Palestinian children grow up in, family has a high value as a risk or protective factor in the development of psychopathology in children. Furthermore, in the Palestinian life circumstances, families "promotes resilience in the child when they cope successfully with worries and objectively uncertain life conditions, and supports the child in dealing with trauma and deprivation" (Veronese, Said, & Castiglioni, 2010; p. 3)

Secondly, the two parts also correspond regarding the nutritional factors, which were found to have more effect in Israel than in the West Bank. This can be explained according to the study of Curtis and Patel (2008) which showed that sugar and food additives could trigger worsened ADHD symptoms (Curtis & Patel, 2008). The Israelis' children eating habits is full

with food additives and sugar, and from my own experience as an educator I can see how they consume an excessive amount of unhealthy foods full of food additives such as energy drinks. An example of this finding can be also seen in the interviews:

"One phenomenon that we can't control is the consuming of unhealthy food, children nowadays have very bad eating habits… for example during the lunch-break you can see how young children drink energy drinks and eat junk food…. Seeing a child with fruit or vegetable is a rare view…" (Aneesa, female, 55 years, an elementary teacher, Israel)

Third, the two parts of the study correspond also regarding the medical treatment; they both showed that medical treatment to ADHD is more common in Israel than in the West Bank. Today "Ritalin" is the most common drug for treating children and adults with attention deficit disorder with or without symptoms of hyperactivity. Moreover, there is subsidization for "Ritalin" by HMOs (Hasisi, 2013).

The following is a representative quote from the narratives:

"The situation is getting worse, they are distributing Ritalin like candy, and every child with a behavioral problem is given the drug as the first option." (Saleem, male, 48 years, lawyer, Israel).

Fourth, regarding the role of the school in dealing with ADHD the two parts of the study had partly corresponded. Regarding the school role in Israel in the two parts, schools have a significant role, according to the Israeli Ministry of education; there must be full cooperation between the school staff, the parents, and Ministry of Education to deal with ADHD pupils and to help them adjust to the main steam. Moreover, the Ministry providence guidance and different services for the schools to help them cope with ADHD pupils and help them and their families (Israeli Ministry of Education, 2009). The following is a representative quote from the narratives: "We as school staff have to find the perfect way to deal with each pupil as a unique case and help him or her to cope with his or her difficulties…" (Soha, 51 years, school principal, Israel).

Nevertheless, in the West Bank the finding of the second part of the study have shown that schools do not have a significant role in dealing with ADHD. This result can be explained by the difficult situation in the West Bank. As a result of the Israeli- Palestinian conflict, it is difficult to have regularly education, parent usually keep their children at home fearing for their safety and even if the school days are held, the atmosphere is loaded with stress and readiness to evacuate the school building at any given moment (Brixi, Lust, & Woolcock, 2015). In other words, schools in the West Bank have life and death issues and that make it difficult for them to fill any other roles.

Fifth, regarding the parents' role in dealing with ADHD, the two studies have corresponds. Parents' role is more effective in Israel than in the West Bank in dealing with ADHD. This can be explained by the policy of the Israeli Ministry of Education, which states clearly that there must be full integration of the parents in schools and schools must keep parents informed with everything related to their children. Moreover, the Ministry of Education providence services for guidance and help for parents of children with special needs including ADHD (Israeli Ministry of Education, 2009). An example of this notion can be seen in the following quote from the interviews "we are as home teachers, must keep constant contact with the pupils' parents in order to work together to help the ADHD pupil." (Majed, male, 57, home teacher, Israel).

Sixth, the two parts of the study corresponded regarding to the commonality of ADHD. According to results of the two parts, ADHD prevalence has increased in recent years. The result corresponds to the statistical data in Israel which states that the rate of ADHD children has increased, an example, in 2013 the rate of children who took "Ritalin" was about 7% of children compared to 2.1% in 2011(Hasisi, 2013). In Addition, according to study aimed to examine the prevalence of ADHD in Palestine that was conducted by Thabet and his colleagues (2010), the rate of ADHD has recently increased (Thaber, et al., 2010).

The following are representative quote from the narratives:

"ADHD is now on the fashion, it means that every child today is at risk of being diagnosed to be an ADHD… "(Bilal, male, 45, high school teacher, West Bank)

" believe me, when I started my job 25 years ago we didn't even hear about ADHD children, but now, you hear it everywhere, it's like a speeding epidemic" (Rana, female, 48 years, elementary school teacher, Israel).

The two parts of the study have contradicted in some issues. Firstly regarding the effect of the social factor. The first study had shown that it has a more effect in the West Bank than in Israel, while the second part showed that there is no significant difference. Secondly, regarding the effects of the biological factors which according to the first part of the study had a more effect in Israel than in the west bank, but according to the second part, no significant difference was dedicated between the two areas. Thirdly, regarding the behavioral treatment, while the first part of the study showed that it was more common in the West Bank than in Israel, the second part showed the opposite, behavioral treatment was more common in Israel than in the West Bank.

Finally, regarding the diagnosis reliability of ADHD, the findings of the two parts of the study were very interesting. The first part showed that the diagnosis is not fully reliable, but the second part of the study has showed that the respondents agreed in both geographic areas

that the diagnosis of ADHD is reliable. This finding can be explained in the contribution of the diagnosis for everyone who comes in touch with ADHD children, because the diagnosis of ADHD and the treatment provided a label, a descriptive and explanatory framework to help them understand the ADHD as an individual unacceptable behavior. It also absolved their longstanding concerns and their search for an answer regarding these individuals. Moreover, the diagnosis also lifted the blame for the pupil's behavior from the teachers and from pupils. Teachers feel relief, the behavior of such pupils does not mean that they are bad teachers and at the same time they feel sympathy toward these pupils, their behavior is out of their control. The ADHD diagnosis give them a means of explanation, and introduces a new, more appropriate reference group for social comparison.

Moreover, As a result of the scientific and public controversy regarding ADHD, parents usually suffer from uncertainty, social rejection and a sense of guilt. Therefore, the ADHD diagnosis can help them because it always implies some responsibility in terms of parental biology or parental educational practices. Furthermore, it provides parents a powerful discursive resource for normalizing these experiences and preventing a sense of blame. (Frigerio & Montali, 2015).

VII. General Limitations

The main limitation of this study is the issue of generalization. The study focused on two specific populations with a very unique circumstances. The population of the study included Arab participants living in two related yet separated geographic area. All of the participants were Arab sharing the same language, history, culture, customs and for part of them even religion. Moreover, the Israeli-Palestinian conflict makes this area very unique. Therefore, the generalizability of the results of this study is difficult for different cultures or countries or even to the Jewish sector in Israel. Furthermore, the participants and the researcher shared a cultural context; therefore, the results may not be applicable to persons from a different culture.

VIII. Summary

The first phase of the study, i.e. the "Preliminary Study" or "The qualitative part", in this study; a sample of focus groups and key informants from Israel and the West Bank were chosen. The tool of the study was unstructured /open- ended interviews through which we were able to decide the main themes connected to the diagnosis of ADHD in Israel and the West Bank. The hypothesis of the first part of the study is that the themes related to ADHD diagnosis are common for the two geographic areas (WB and IL).

Whence, we found that there are common themes and dimensions that participants from the different areas have mentioned. These themes were social factors, familial factors, biological factors and nutritional factors, and the diagnosis of ADHD, which contained the diagnosis reliability of ADHD, the treatment of ADHD that contained medical treatment, behavioral treatment, the school's role, the parents' role, and finally, the commonality of ADHD. Depending on the finding of the first part of the study, we formed the hypotheses for the second part of the study, the quantitative part. We used the quantitative method and the tool was a questionnaire.

The hypotheses were: (1) the social factors have a more significant effect on ADHD in the West Bank than in Israel. (2) The familial factors have a more significant effect on ADHD in the West Bank than in Israel. (3) The biological factors have a more significant effect on ADHD in Israel than in the West Bank. (4) The nutritional factors have a more significant effect on ADHD in Israel than in the West Bank. (5) The current diagnosis ways for ADHD are not fully reliable, both in Israel and in the West Bank. (6) The medical treatment for ADHD is more common in Israel than in the West Bank. (7) The behavioral treatment for ADHD is more common in the West Bank than in Israel. (8) The schools have a significant role in dealing with ADHD both in Israel and in the West Bank. (9)The parents have a more significant role on ADHD in Israel than in the West Bank. (10) The ADHD is more common nowadays than it was in the past, in both Israel and the West Bank.

According to the results and the data analysis, the first hypothesis was not supported; no significant difference was found in the social factors between teachers from Israel and the West Bank. The second hypothesis was supported; the familial factors in the West Bank were higher than in Israel. The third hypothesis was not supported; no significant difference was found in the biological factors between teachers from Israel and from the West Bank. The fourth hypothesis was supported; the nutritional factors in Israel were higher than in the West Bank. The fifth hypothesis was not supported; participant reported the diagnosis of ADHD as reliable from both geographic areas. The sixth hypothesis was supported; the average of the

medical treatment in Israel was higher than in the West Bank. The seventh hypothesis was not supported; in contrast to the hypothesis, the average of the behavioral treatment in Israel was higher than in the West Bank. The eighth hypothesis was partly supported; the school's role in Israel was significantly higher than 3 -in contrast to the hypothesis, the average of the school's role in the West Bank was lower than 3. The ninth hypothesis was supported; as expected, the parent's role in Israel was higher than in the West Bank. Finally, the tenth hypothesis was supported; participants from both areas reported that the prevalence of ADHD is higher nowadays than in any time in the past.

IX. Conclusions

In this research, we aimed to study the diagnosis of ADHD in Israel and in the West Bank; Stereotype, Prejudice and the Influence of the school system polices. There are number of conclusions that can be drawn from this study: First, the effect of social factors on ADHD is not necessarily related to a specific country, rather than to the cultural background. As we have seen in the thesis, the Arab in Israel and in the West Bank share the same culture, therefore they have the same social condes according to which a certain behavior is considered to be appropriate or not.

Second, Familiar factors have more effect in more cohesive societies where the familiar relations are stronger. This can be explained through the nature of the traditional Arab family structure, where parents especially the father has a supreme position. Unlike the Israeli Arab families, which have undergone several changes because of living with a western community like the Jews, the Arabs in the West Bank have maintained stronger family bonds.

Third, the effects of biological factors on ADHD have decreased. This can be explained by the increase in the awareness of the relative marriage dangers on the inherited diseases, the new generation is aware of the fact that marriage between close relatives can jeopardize the health of their offspring, therefore this phenomenon has decreased in the Arab world in general (Rashad, Osman, & Roudi-Fahimi2005).

Fourth, there is a significant effect of the nutritional factors, medical treatment, behavioral treatment, schools role, parents' role on ADHD in more western way of life countries. This can be explained due to the differences between the standards of living. The western countries have more available services to deal with ADHD students. Furthermore, dealing with these students is part of these countries' polices; schools have curriculums and programs especially for these pupils. Parents are more aware of their duty to help their children overcome their difficulties in western countries; one reason might be their higher educational level.

Finally, regarding the diagnosis of ADHD that depends mainly on the subjective report of teachers or parents which no matter how objective they try to be, the issue of personal judgment and interpretation still under question. Yet it is perceived as a reliable way of diagnosis because it helps both teachers and parents understand what is going on with the ADHD child and how to deal with him /her.

X. Recommendations of the study

According to the finding of this research, we recommend that adjustments should be done to the diagnosis criteria of ADHD in order to be adapted to the special nature of the Arab society in both Israel and the West Bank. Because of what we had considered, the judgment of what is an appropriate behavior is subjective and differs from one place to another. Moreover, the misjudgment of ADHD with other disorders is another problem that should be taken into consideration.

In addition, we believe that every new teacher or parent must take a course or go to a lecture about the ADHD disorder in order to be prepared. Therefore, the local authorities should hold courses, lectures, or workshops regarding this disorder for the general public.

XI. General Implications

According to the findings of the study, there are several suggestions implications. First, great care must be taken to make explanations of the ADHD diagnosis as clear and understandable as possible. Second, the nature, mechanisms, and effects of medication should be carefully explained in a simple and clear way. Third, all professionals who have contact with children who has ADHD should be aware of all the potential difficulties which may rise when dealing with them. Fourth, every effort should be made to empathize and understand the families' and teachers' best efforts to cope with ADHD behavior. Fifth, a framework for integrating medical and psychological treatments for ADHD should be provided to help pupils adjust to the mainstream. Moreover, using more psychological approaches such as parent training should be well integrated in the school curriculum.

XII. Suggestions for further researches

This study focused only on a specific population living under certain circumstances, therefore further studies should be conducted on larger population and in different countries. Furthermore, the diagnosis criteria is very general, there is no specification regarding differences of gender, religion, socio-economic statue. We think that further studies should be done in order to consider these differences when conducting diagnosis of ADHD.

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Appendixes

Teachers' thoughts towards ADHD (Attention Deficit Hyperactivity Disorder)

Date	
School/	
ID number	

Dear participants,

The study you are about to take part in examine the attitudes and beliefs of teachers and professionals about Attention Deficit Hyperactivity Disorder (ADHD).

We ask you to answer the questions in the following pages absolutely freely, depending only on your personal experience and beliefs.

The thoughts you hold are important to us, because they allow us to better understand, what your thoughts about this disorder are and its effect on your daily educational job. Therefore, please answer to all of the questions.

The information that we will get from you will be used only for the purpose of the research.

The data will be analyzed and collected and nothing that may harm you will be used. We respect you privacy and all the laws.

For any questions, you can contact the direct responsible person:

The researcher:

There are some thoughts and opinions about the ADHD disorder. Please, tick if it is true or false. In case you absolutely don't agree tick the most appropriate column.

	Yes	NO
1- ADHD can cause inappropriate behaviors from the parents (like bad treatment, and other things)		
2- ADHD can be caused by eating sugar and food preservers.		
3- Children with ADHD were born with biological readiness.		
4- It is possible to diagnose children with ADHD without hyperactivity (i.e. only by inattention)		
5- Children with ADHD always need a quiet and sterile environment in order for them to concentrate in their assignments.		
6- Children with ADHD behave badly because they don't want to act according to the regulations or finish their assignments.		
7- Non-discipline, objection and refusing to please others are not the main reasons for inattention among children with ADHD.		
8- ADHD is a medical disorder which can be only treated by drugs.		
9- Children with ADHD can be better if they commit more.		
10- Children with ADHD can usually overcome this disorder and become normal.		
11- ADHD can be hereditary.		
12- ADHD is a rare disorder among children.		
13- In the case if giving drugs, there is no need for educational intervention.		
14- If a child gets a good grade one day and a bad grade on another, this means that he isn't an ADHD.		
15- Diet is not beneficial for the treatment of most ADHD cases.		
16- If the child was able to play video games for many hours, he might not be an ADHD.		
17- ADHD children are at risk to become deviant.		
18- ADHD children usually behave well when they are involved in an interaction between two individuals more than in a group.		
19- ADHD is usually a result of an incapable family life.		

Here also some thoughts and opinions about the disorder. Tick if you agree or disagree with each of them.

		1 completely agree	2 agree	3 neither agree nor disagree	4 don't agree	5 strongly disagree
1-	In our day there are more ADHD (always more)					
2-	Today there are less ADHD diagnosis.					
3-	Treatment with drugs should be the last solution.					
4-	ADHD children need usually only for discipline.					
5-	Schools don't give enough supporting services for ADHD children.					
6-	ADHD children don't usually help themselves enough.					
7-	Teachers are ready to help ADHD children.					
8-	ADHD is usually diagnosed by unprofessional individuals					
9-	ADHD has a biological basis.					
10-	Most of ADHD are clever like other children					
11-	ADHD are more attached than other children.					
12-	It's enough to recognize children with ADHD through the way their parents deal with them and there is no need to see them.					
13-	The first way of treatment is via drugs.					
14-	Parents of children with ADHD simply don't know how to control their children.					
15-	Most children with ADHD overcome their disorder after the age of 20					
16-	It is embarrassing for the family to have an ADHD child.					
17-	ADHD is a result of spoiling the children.					
18-	The schools' rule is to discipline ADHD children when parents fail to do it.					
19-	ADHD are just children who feel bored.					
20-	ADHD children are more creative than other children.					
21-	ADHD is not a real disease.					
22-	Diagnosis scales for ADHD are vague therefor, many normal children are being diagnosed as ADHD.					
23-	Treatment with drugs teaches children that the solution for life					

		1	2	3	4	5
	problems with a pill.					
24-	ADHD is a hackneyed scientific definition					
25-	Personal scales of ADHD identify sickness symptoms from mood varieties.					
26-	ADHD leads to sickness behavioral category with different causes.					

Tick if you agree or disagree with each of the following sentences.

		1	2	3	4	5
		completely agree	agree	neither agree nor disagree	don't agree	strongly disagree
27-	ADHD drugs have severe side effects which may put children at risk of death or suicide and drug abuse.					
28-	Tests and drug treatments for ADHD aim to control the future generations.					
29-	The diagnosis of ADHD depends on subjective scales build by a group of psychologists.					
30-	Drug treatment for ADHD children hinders their development.					
31-	The ADHD tag emphasizes behaviors as something sick but these behaviors are normal for active children.					
32-	ADHD diagnosis may be misleading regarding children who are more intelligent or creative tan the average.					
33-	ADHD doesn't have any hereditary basis.					
34-	ADHD is a result of marketing strategy which aim to benefit from selling drugs.					
35-	ADHD stimulus cover the problem without dealing with the causes.					
36-	ADHD may be caused by over eating of sugars.					
37-	ADHD supports the disability of education.					
38-	ADHD tests lack for scientific credibility.					
39-	Our reliability on ADHD diagnosis will be only giving drugs in a useless way.					
40-	ADHD has scientific basis.					

This last section of questions refers to general information and your direct and indirect experiences with ADHD, please answer each question. Please circle the closest or most exact number.

Gender: ☐ man ☐ woman

Education: ☐ diploma ☐ university ☐ MA/ DR specialist

Marital status: ☐ single ☐ married ☐ divorced ☐ widow/ widower

How many years have you been working? _____

Have you worked with ADHD children? ☐ Yes ☐ No

What are the characteristics that come to you mind when you hear the word ADHD?

1- _____

2- _____

3- _____

Have you gotten information about ADHD during the last year?

☐ No

☐ Yes, if yes, how? Mark the right answer.

    ☐ Books

    ☐ Articles or scientific magazines

    ☐ Articles from newspapers

    ☐ TV or radio

    ☐ Training

    ☐ Workshops

    ☐ Another source _____

Have you spoken with others about ADHD?

☐ No

☐ Colleagues

☐ Doctors

☐ Psychologists

☐ Pupils' parents

☐ Training

☐ Workshops

☐ Others _____

How do you evaluate your knowledge about ADHD?

Very few	Few	Enough	Good	Excellent
1	2	3	4	5

Do you want to increase your knowledge about ADHD?

Not at all	A little	Enough	Quiet much	Very much
1	2	3	4	5

Thank you for your cooperation

Thank you for what is best for our society.