

Study of Etiology, Diagnosis and Treatment of Attention Deficit Hyperactivity Disorder

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ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) is a behavioral- developmental disorder that causes impulsive reactions, learning disorders and excessive physical activities and is associated with some abnormal behaviors. Attention deficit disorder is diagnosed more often in children. However, this disorder has also been observed in adults. Hyperactivity disorder begins around the ages of 2 to 4 years and 3 to 7 percent of children in the world suffer from this disorder and the prevalence of this disorder in boys is 2 to 9 times higher than in girls. The present research is descriptive-analytical which was done in the form of a library. The tools for collecting information in this research are psychology books, research articles and reputable national and international scientific journals. According to the researches, it can be said that the most important symptoms of this disorder are the inability to concentrate, excessive mobility, and impulsive behaviors. Psychosocial, biological and genetic factors play a major role in the occurrence of this disorder. To treat this disorder, drug therapy is used in the first step, and psychotherapy approaches such as cognitive behavioral therapy, play therapy, and coaching are used in the next step. Research findings show that if this disorder is not treated, it can disrupt the important functions of a person's life, such as family function, social function, and educational function.

Keywords- hyperactivity, hyperactivity treatment, hyperactivity symptoms, disorder, therapy.

I. INTRODUCTION

In any society, the health of children and teenagers is of special importance, and paying attention to their mental health helps their mental and physical health, and this causes them to play their social role better. In this regard, the correct understanding of the different physical and mental aspects of this age group and efforts to provide spiritual and material conditions suitable for physical, emotional and intellectual growth is more obvious than it needs to be emphasized. Children's behavioral disorders are common and debilitating disorders that cause many problems for teachers, families and children and are associated with many social problems (Khodam, Madanlo, Ziyai and Kashtkar, 2019). Researchers have found that behavioral disorders are usually first noticed in the early elementary school years. Behavioral disorders have relatively the same prevalence in different societies and significantly negatively affect the academic-social performance of children and increase the likelihood of mental illnesses in adulthood. In fact, it is important to

pay attention to the types of behavioral abnormalities and divide them into different scales from different aspects (Mousavi and Ahmadi, 2013). Identifying cases that have clinical problems and examining the type, severity and distribution of mental health problems and children's disorders can be used to assess the level of mental disorders, determine the current trend, evolution and their etiological hypotheses. Among these behavioral disorders that have been investigated in this research is hyperactivity disorder (Yousfi et al., 2013). Hyperactivity disorder in children shows itself with excessive mobility and lack of attention. Hyperactive children's high energy and high mobility cause problems for the child, parents and school staff. Hyperactive children usually spend all their energy on exciting activities to the point where they no longer have the energy and time needed to do other things such as learning, doing schoolwork, etc. On the other hand, some of these children also have attention deficit. So, if they are not treated on time, they may be drawn to drop out of school and take deviant paths. For this reason, it is necessary to treat your hyperactive child

after diagnosing and identifying the symptoms of hyperactivity, in order to prevent the occurrence of its consequences in adolescence and youth (Dehghan 2019).

II. ADHD SYMPTOMS ACCORDING TO DSM-5

In 2015, the American Psychiatric Association published the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), which is a checklist that introduces diagnostic criteria for a wide range of mental illnesses, including ADHD. If a person under the age of 16 has at least 6 cases and people over 16 years of age has at least 5 cases of the following symptoms for at least 6 consecutive months, the diagnosis of hyperactivity disorder is raised. According to DSM-5, three main subgroups for attention deficit hyperactivity disorder are defined, including:

A) *Attention deficit hyperactivity disorder and inattention with predominant inattention*

The affected person generally has features of forgetfulness, disorganization and lack of concentration, but does not have hyperactivity, that this is known as attention deficit disorder. Children with this disorder are not hyperactive and do not have the high energy level found in other people with ADHD. In fact, these children are shy and in their own world. Without symptoms of hyperactivity, impulsivity and irritability, attention deficit disorder is diagnosed. Its symptoms include:

- Distraction: He is easily deviated from his task and gets distracted.
- Postponement of activities: avoiding, hating or postponing long mental tasks (such as homework) or activities that require prolonged sitting or activities that are not interesting to the person.
- Reduced of concentration: He frequently loses his concentration while performing tasks at school, home or work.
- Disorganization: forgetfulness and difficulty in organizing daily activities.
- Inattention: It seems that he doesn't listen to you when you talk to him.
- Careless: does not pay attention to details.
- Carelessness: He frequently makes mistakes due to carelessness and loses things that he needs to complete tasks.
- Confusion: does not follow clear and specific routes.
- Decreased attention: Difficulty maintaining attention and concentration in performing tasks or social activities.

Symptoms of adults with attention deficit disorder include forgetting to do routine tasks such as taking out the trash, picking up children from school or filling out forms, forgetting or losing things they use regularly such as keys, Phone numbers, and important papers. In addition, adults with ADD may also have problems with self-confidence and motivation.

B) *Hyperactivity and attention deficit disorder with dominant hyperactivity*

The person has characteristics including restlessness and sudden decisions and impulsive movements, but does not have problems with attention and concentration. This form of the disorder is more recognizable than ADD. Children with this disorder have a lot of energy and are continuously moving, which often causes problems. If a person under the age of 16 has at least 6 cases and people over 16 years of age has at least 5 cases of the following symptoms for at least 6 consecutive months, the diagnosis of hyperactivity and attention deficit disorder with dominant hyperactivity is raised. Its symptoms include:

- Excessive mobility: always being on the move and wanting to go and leave, such as running or climbing, which this state is mostly described as tirelessness in adolescents and adults.
- Not being calm: Twisting in the chair, shaking objects while sitting back, tapping the table with hands or feet.
- Not sit in one place: He frequently leaves his seat at inappropriate times such as work sessions, classes or lectures.
- Talkative: talking too much.
- Intolerance and waiting: problem waiting for the turn to arrive.
- Jumping in the middle of others' conversations: interrupting others' conversations or interfering in their activities. He tells the answer before a question is finished.
- Loudness: Inability to be quiet in play and leisure activities. In adults, hyperactivity may manifest as restlessness and other symptoms, including persistent foot tapping, play with pencil, restlessness, and difficulty sitting in one place for long periods of time. These people leave projects unfinished due to lack of interest and boredom.

C) *Mixed attention deficit and hyperactivity disorder (ADHD).*

Person has a combination of problems including inattention, hyperactivity and impulsive activities. A person suffering from this disorder has both categories of inattention and hyperactivity and irritability. By examining the background of adults with ADHD, we find out that they have had problems in school in the past, such as a history of failure and academic failure in school, a history of repeating classes due to being rejected and expelled from school. In terms of work problems, adults with ADHD have changed jobs many times and are weak in their jobs, and they are not happy with their jobs and have achieved little success at work. They also have problems in social life, such as fines for speeding, suspension of licenses and certificates, or many accidents, smoking, excessive alcohol or drug use, low income, psychological problems such as depression or anxiety. Marital problems, divorce or multiple marriages are among the problems that adults with ADHD face. If a

person shows the above symptoms and it seems that these symptoms are hindering his progress at school or at work or causing a disturbance in his relationships, he should seek medical help (American Psychiatric Association, 2014, translated by Seyed Mohammadi (2014). Also, according to the latest classification and diagnostic guide of psychiatric disorders of the American Psychiatric Association, symptoms such as inattention, frequent mistakes in doing homework, distraction, not listening to the teacher's requests, jumping in the middle of others' words, problems in doing homework and organizing homework, Lack of interest in studying and doing school assignments, losing school supplies such as books and pencils, and being easily distracted by any external stimulus are symptoms of attention deficit hyperactivity disorder (quoted by Bahrami, Yousefi). Bahrami Farazi and Bahrami (2014).

III. PREVALENCE OF HYPERACTIVITY DISORDER

Hyperactivity disorder starts around the ages of 2 to 4 years and is one of the most common childhood neurobehavioral disorders that affects a large part of the world's population (3 to 7 percent of children) (Dehghan, 2019).

The frequency of attention deficit hyperactivity disorder according to the criteria of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders in school-age children is 3-7% and according to the criteria of the tenth edition of the International Classification of Diseases, it is 1/7% (Wenzel, 2009). Based on the research conducted in different regions, this frequency is different, such as in the Bangkok study, 6.5%; Colombia reported 4.6% and Gonabad 9%, but all studies have considered the gender difference in the prevalence of attention deficit hyperactivity disorder to be significant only in combined disorder; Also, the rate of prevalence in boys is 2 to 9 times higher than in girls and the reason for referral in girls is often due to distraction and lack of attention, and in the case of boys it is more due to hyperactivity (Barzegar Bafroei and Farzad (2014). About 8 to 12 percent of children in the world are suffering from hyperactivity disorder. In the systematic review conducted by Polanzik and his colleagues (2007), the global prevalence of this disorder was declared as 5.29 percent (Bahrami, Yousef, Bahrami Farazi and Bahrami (2015). Unfortunately, there is no accurate statistics of the prevalence of this disorder in our country, Afghanistan.

IV. AFFECTIVE FACTORS ON HYPERACTIVITY DISORDER

This disorder must be present in at least two areas and the person's performance in social, academic or occupational fields has been disturbed depending on the level of development. However, psychological, socio-

biological, genetic, environmental and nutritional factors, low birth weight, family factors, smoking during mother's pregnancy, family history and mental stress during pregnancy can be considered effective factors in the occurrence of this disorder. (Dehghan, 2017).

V. HYPERACTIVITY EFFECTS ON LIFE

Researches show that attention deficit hyperactivity disorder (ADHD) interferes with the natural process and development of childhood, that fortunately, many of the primary problems related to hyperactivity, such as hyperactivity and impulsivity, are reduced during puberty, But if this disorder is not treated in childhood, the child's readiness to accept psychological and social harm in adulthood increases, which leads to secondary problems such as antisocial behavior and difficulty in social adaptation with other students, academic failure, dropping out of school, leaving school, low self-esteem, behavioral disorder, delinquency and drug addiction. On the other hand, the severity of hyperactivity and its treatment in childhood is a significant predictor of how the symptoms will continue in adulthood, which can be well treated if diagnosed in time (Yousfi et al. 2012). Although many of the primary problems associated with ADHD, such as hyperactivity and impulsivity, abate during puberty, secondary problems resulting from this antisocial behavior disorder and academic failure may persist or worsen. Also, students with this disorder are more likely to drop out of school, fall academically, and have difficulty in social adjustment than other students. On the other hand, the severity of hyperactivity and its treatment in childhood significantly predicts the continuation of symptoms in adulthood, and treatment effectively increases quality of life significantly (Lacriura and Eugene Arnold, 2007). In general, students with hyperactivity who experience continuous and repeated academic failure are more vulnerable to behavioral and social-emotional problems. It is expected that these students, after experiencing failure and feeling incompetent for several consecutive academic years, will show signs of distress along with emotional problems; Also, about 25% of children with reading disorder are hyperactive, and children with hyperactivity disorder are thought to be at higher risk of social problems (Kaplan and Sadok, 2015, translation, Reza'i 2014). Attention deficit hyperactivity disorder causes academic failure among students, especially elementary school students. According to researchers, 9 to 80 percent of children with attention deficit/hyperactivity disorder have academic problems. Also, the drop in education is one of the reasons that causes psychiatric disorders, especially depression among students. This disorder is associated with problems in various educational fields, such as poor academic performance, weak family and friendly relationships, low mental health, and drug abuse at a young age (Bahrami, Yousfi Bahrami Farazi and Bahrami 2015).

VI. TREATMENT METHODS OF HYPERACTIVITY DISORDER

A) Drug therapy

A misdiagnosis of hyperactivity or lack of concentration in child psychology can completely change the course of a child's life. Families should be equipped with the weapon of science and knowledge so that they can make the best decision for their child to the point where they can distinguish between right and wrong and even have the right or wrong diagnosis of their child's psychologist. Drug therapy is often the first line of treatment for these people, while 20 to 50 percent of adults do not respond adequately to drugs or cannot tolerate the harmful effects of drugs. In addition, research has shown that drugs only reduce main symptoms by 50%. Try to use drug-free treatment methods as much as possible after correctly and accurately diagnosing hyperactivity in your child. There is no drug without side effects, only the effect of drugs is different for different people. For example, those who have blood sugar problems can control their disease by injecting insulin, but if a person who does not have diabetes injects insulin, he will definitely go into a coma. So, mothers and fathers who have a hyperactive child should note that all drugs, especially (hyperactivity and lack of concentration) are double-edged swords, they can both improve the child's concentration and activity, and on the other hand, they can aggravate it and has a negative impression on the child (Qadai, Hamid and Mehrabi, born in 2014). Drug treatment of this disorder includes stimulants of the central nervous system. But taking medication alone can rarely meet the treatment needs of children with this disorder; In addition, drug treatment has been criticized due to the harmful effects of chemicals on the natural processes of the central nervous system, as well as not having a stable and lasting effect to improve the disorder, and therefore more emphasis is placed on cognitive behavioral treatments (Hassanabadi, Mohammadi and Ahghar, 2017).

B. Cognitive behavioral therapies

It seems that drug treatments need to be combined with psychological interventions. Drug and psychological treatments separately and combined for the treatment of hyperactivity disorder have been significantly used, at the same time, from efforts of parents, psychiatrists, psychologists and teachers have been used. The most important established method of treating attention deficit hyperactivity disorder is to create and maintain a suitable environment in cognitive-behavioral therapy and drug therapy. The ultimate goal of ADHD treatment is to empower children to overcome the difficulties they will face throughout life. This goal cannot be achieved by drug therapy or forcing children to follow the rules, but the only way to achieve it is to teach strategies on how to deal with people and tasks that are beneficial to the child's daily functioning. In the cognitive-behavioral approach, the most emphasis is on

expressing the concepts operationally and validating the treatment experimentally. For this purpose, group and single subject experimental designs are used in research conditions as well as in daily clinical work. Also, in order to be able to retest the findings, the treatment method should be defined according to operational definitions and its effect should be evaluated with the help of reliable and objective criteria. The bulk of the treatment is based on the "here and now" approach, and it is assumed that the main goal of the treatment is to help the patient in a way that she can make positive changes in her life. Therefore, more emphasis in treatment is to provide an opportunity for new adaptive learning as well as to make changes in the space outside the clinical domain (clinic or office). Problem solving is also an important and integral part of treatment, where all aspects of treatment are explained to the patient. The therapist and the patient try to establish mutual communication and develop strategies to deal with precisely defined problems (Hassanabadi, Mohammadi and Ahghar, 2017). The theoretical basis of cognitive-behavioral therapy is based on the principle that behavioral self-control is improved as a result of increasing cognitive and metacognitive skills, and a person can control his impulses and direct his behaviors by using these skills (Qadaei, Hamid and Mehrabizadeh 2015).

C) New method of therapeutic help (coaching)

In attention deficit hyperactivity disorder, attention to executive functions and damage to it is extremely important. Because executive function helps a person to identify distractions and eliminate them, keep different issues in mind, think about consequences. Therefore, in hyperactivity disorder, damage to executive functions makes a person face many problems in normal daily activities, including paying bills, getting enough sleep, taking medicine regularly, remembering to do routine household chores, etc. Attention deficit hyperactivity disorder is not a personality problem but a neurobiological disorder that does not go away easily (Ramssi (2008).

The coaching method focuses on this special biological difference in the minds of people with attention deficit hyperactivity disorder. In this method, neurobiological symptoms are considered as the basis of negative behavioral patterns in these people, and patients learn to manage the daily challenges caused by these symptoms. In fact, these people learn to forget the consequences of their actions not intentionally, but because of the disorder in their minds. When people learn this, they can use the necessary strategies to create change. Coaching is a bridge between a person's desire to start changing and a set of actions that should be done to change, and in fact, it is a bridge between ability and performance(Ramsey 2012).

A therapist who works with small principles deals with practical issues of people's daily life such as planning, organizing, prioritizing and time management. (Bithaler Kahn and Asherson 2011). Another aspect of

coaching is the comprehensiveness of this treatment method. The therapist asks people to pay attention to all aspects of life and use strategies to manage all aspects of life that require change. He helps people to take the steps one by one, considering that people with attention deficit hyperactivity disorder tend to do everything at the same time, this treatment method becomes more important. Coaching helps people to always experience the right level of "mental pressure". People with attention deficit hyperactivity disorder often need a certain level of stress in order to pursue their goals. In order for these people to feel urgent, they need to think that "my time is up, so I must finish my work now". Therefore, it is necessary to help the clients to set a written plan and time limit and follow up to adhere to this plan (via phone, email and SMS). In fact, one of the major differences between this intervention and other types of interventions is the continuous follow-up between sessions. In the end, clients learn to create a functional level of urgency for themselves (Ramsey, 2008). What techniques does Kocher use to make changes in references: Through psychological training, coaching helps people practice adaptive behaviors in their daily lives. Therapist: teaches clients that attention deficit hyperactivity disorder is a part of their daily life and does not disappear by itself, and most of the conflicts and problems they experience are caused by this disorder. It teaches clients to choose one or two things to start working on their problems. It is necessary for people with attention deficit hyperactivity disorder to develop a plan of their own to cope with the challenges. The therapist helps clients to design their own strategies. In this way, a person must not only be creative, but also needs to know his abilities and use them. Arguably the most challenging part for most clients is working on a planned plan. This work requires continuous, long and deep effort. Since the attention of adults with attention deficit hyperactivity disorder is diverted by many topics and thoughts and they abandon it before spending enough time on their main goal. Kocher helps clients to get on their original path and test the strategies they designed based on their needs. Finally, the therapist helps the client to continuously evaluate the strategies and structures she has designed and see if these strategies and structures meet her goals or not. People with attention deficit hyperactivity disorder have memory deficits, they easily forget past consequences and future goals. When they work according to a plan or structure, they gradually relax and think that I don't need this plan anymore, I have solved my problem and I am fine now, and they give up new strategies. This causes them to return to their previous bad habits, which were determined to be abandoned. Therefore, the therapist helps people to practice and strengthen the new acquired habits so that they are internalized (Privat and Yeland, 2015). As a result, it can be said that coaching helps a person to focus through five main factors, i.e. maintaining the level of arousal, regulating emotions, maintaining, motivating, providing immediate feedback and assuming the role of

executive management. As a result, it supports the individual's ability to perform self-motivated actions and behavioral change patterns (Ramsey, 2012).

The main components of the coaching treatment method are: participation and cooperation, structure and gradual progress. Through cooperation with Kucher, a person not only determines what help he wants from his Kucher, but also finds out how he can internalize it. The main goal is to gradually change Kucher's external reminder to one's inner voice, and ultimately it is this inner voice that helps the individual initiate change from within. The structure is one of the main and vital components of this treatment method, which is difficult for many people to accept. On the one hand, people feel constrained by the structure because it expects them to do things they don't like, on the other hand, the structure causes people to successfully complete their tasks, thus less than before feel threatened or surprised by the work. The structure should be created according to the person's abilities. The third important principle in this treatment method is to help the person to gain the ability to introspect, become aware of needs and find solutions to problems. In this method, instead of asking the client why she did not do a certain work, she asks what prevents her from doing this work and what other choices she may have in the future. With this method, the client realizes how he contributes to make problem for himself and when he realizes that he is working against himself, he can offer a new solution to reach his goal. On the other hand, most of the time, clients are in the process of trial and error to determine the most effective policy, and this trial and error is actually an important part of the treatment. Therefore, it should be understood from the beginning that coaching is a long journey, it develops gradually and is not always accompanied by success. This view makes the person remain committed to the treatment and not abandon the treatment due to the adversities that occur during the treatment. People in the early stages may habitually feel humiliated after any failure and think that they are a loser. But they should remember that the result of the action is separate from the person performing that action, in this case they can skip the feeling of inferiority and move towards positive actions (Artonin and Alagband, 2015).

VII. GROUP PLAY THERAPY AND HYPERACTIVITY DISORDER

Due to the low level of abstract thinking, children are not able to express their emotions and feelings, Suppression and lack of skill in expressing emotions, especially negative ones, endangers the child's mental health. Therefore, finding a way to enable the child to express his emotions in a way other than verbal expression seems absolutely necessary. The game is a tool that the child uses to express himself, and for every child regardless of race, language, and nationality, it is a suitable tool to release his emotions and express himself

(Sohrabi (2010). Play is one of the necessities of children's lives. Children express their thoughts through the game and as easily as adults express their feelings with words, they also do the same through the game. During the game, the child finds the ability to solve his problems and through it, he can cultivate self-confidence and the spirit of independence. They express their emotions such as fear, sadness, joy, and anger through play and in this way they feel safe and valuable (Jalali and Molvi, 2019). Play therapy is an essential tool for mental health professionals working with children. The play therapy approach is a communication language for children. Play therapy is described as a dynamic interpersonal relationship between the child and a therapist trained in the play therapy process, which facilitates a safe relationship for the child so that the child can fully express himself. In this way, the child can better learn self-control skills (Moheb Amiri and Behrosh, 2012). Play therapy is a suitable alternative treatment program for a wide range of psychological problems of children and adolescents who are in the age range of 3 to 16 years. This treatment program has been used by various psychologists and researchers for several decades to treat a wide range of disorders and problems and its effectiveness has been shown (Stati et al. 2017). Hyperactive children and adolescents usually do not finish a game or an activity to the end and leave it halfway, but in any case, school-aged children need a certain amount of attention and concentration to learn their lessons and do their homework. If the child cannot control his attention and concentration, he will have problems in learning and doing reading, writing, and math homework (Arya Puran and Iskandari 2015). The worst punishment for a hyperactive child is to ask him to do something that requires attention and concentration; for example. Let's solve this math problem together. In this case, the child is usually willing to do anything else, except focus on that math problem. In very severe cases, drug therapy should also be used in addition to play therapy (Ahdian, Poursharifi and Mirlo, 2017). Some play therapies include:

- The dot game (dot paintings with numbers): In this game, Tell the child to put her non-dominant palm on the paper, open her fingers and draw a line around the fingers and palm with a pencil, Then, with the dominant hand, write the numbers 1 to 15 scattered and irregular in the created shape. Ask the child to find the numbers in order from 1 to 15 and draw a line around it. This game helps to improve the child's selective attention.
- Maze game: In the Maze game, the child must reach the pictures that are drawn in winding ways, from a starting point to an ending point. In this game, use attractive and meaningful pictures (for example, the child must take the chicken to its nest). To make his work easier, the child first looks at the pictures with the help of his eyes and follows the path. In this game, in addition to increasing attention and concentration,

the child learns that if he starts something, he should try to finish it. In this game, the child's brain synapses and pathways are strengthened and the child's thinking and endurance power increases to reach the result and solution.

- Finding the differences between two similar shapes: In this game, two paintings that look completely alike, but intentionally have some differences, are placed next to each other. Ask the child to mark the differences in the pictures. By finding any differences, encourage him to continue working (Barzegar Bafroei and Farzad, 2014).

VIII. CONCLUSION

Attention deficit hyperactivity disorder (ADHD) is one of the most common psychiatric disorders in children. This disorder is not a phenomenon that has emerged only in recent years, but has a relatively long history. Although no single and specific cause for hyperactivity disorder has been discovered yet, experts agree that genetic and hereditary factors and environmental factors are both effective in the phenomenon of this disorder; This means that the genetic structure of the child and other factors before birth, during birth or after it provide the background for this disorder, but the appearance of behaviors related to hyperactivity is affected by culture and environment too. ADHD is primarily a genetic disorder. It is estimated that 80% of people diagnosed with attention deficit/hyperactivity disorder have inherited this disorder. Twin studies have been helpful in determining the role that environment plays and the role that genes play. Family studies have also added to our knowledge of genetic factors in ADHD. If you have inherited hyperactivity/attention deficit from one of your parents who had inattention, impulsivity, hyperactivity or a combination of the two, it will not affect your type of hyperactivity/attention deficit and it can manifest itself differently from your parents. One of the therapeutic interventions for this disorder is group play therapy, which is used as a method to treat children's problems. Play therapy helps children to feel their issues and problems, with the aim of knowing their psychological characteristics. And in this type of treatment, the child is given the opportunity to express and display his annoying feelings and problems through play.

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