

Psychological Care Of Attention Disorder In The Light Of Neuropsychological Studies

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Abstract:

This study aims to address the issue of attention and learning disorders and explain it in the light of neuropsychological studies, by defining the concept of this disorder, its causes, and types, as well as the disclosure of diagnostic criteria and the most important medical, psychological and educational treatments.

Keywords: Attention Deficit Disorder - Diagnosis - Treatment - Neuropsychological studies.

1. Introduction

Attention is one of the most important mental processes that contribute to the development of knowledge of an individual through which he can choose sensory stimuli that help him to acquire skills and form behavioral habits to achieve adaptation to the surrounding environment.

Psychologists, mental medicine, and neuropsychologists from Font school have given importance to attention as the central characteristic

of mental life and its mission is to clarify the contents of consciousness and transform the sense into perception, and this is through the introspection of emotional experience, but the behavioral school refused to take interest in consciousness and saw it as a focus and selection that can be observed.

The level of attention in individuals varies depending on the integrity of the senses and neurotransmitters and the center of attention in the central nervous system in the brain, and therefore we find that there are some individuals with a high level of attention and others have a low level of it.

Attention disorder is one of the most common disorders among children, as a report from the American Mental Health Agency stated that half of the children referred to treatment with it were suffering from this disorder, and the results of recent epidemiological studies in psychiatry showed that this disorder affects almost up to (10%). of the children of the world, and its prevalence rate among school-age children ranges between (4% - 6%)

Attention disorder is one of the disturbances that prevail in recent times, where some children suffer from this disorder and it appears in their inability to focus on different stimuli for a long time, so they find a difficulty to follow instructions and end the work they do, and they have a weakness in the ability to think which makes them mistake a lot and this is what affects their academic achievement, and their conversation in dialogue is often incoherent.

Broderick has interpreted the perceptual attention that information from all the senses enters a refinery that goes through the neck of a bottle or a narrow channel that controls the delivery of a limited number of

nerve impulses to the brain, while the rest of the alerts can remain in the store of near-term recall (Abdel Halim Ezzat Rajeh 1985)

Definition of attention disorder:

It is a weakness in the learning ability, a minimal brain disorder (MBD), a minimal brain dysfunction, or a minimal brain injury.

According to the third Diagnostic Statistical Manual of Mental Disorders (DSMIII) issued by the American Psychiatric Association (1980) (APA), a disorder has a set of behavioral symptoms that distinguishes it and has been divided into two types:

The first is Attention Deficit disorder with hyperactivity, and the second is Attention deficit disorder without hyperactivity (APA1980).

First: the causes of attention disturbance

Brain causes:

The causes of brain-related attention disorder are due either to the presence of brain dysfunction or to the chemical imbalance in the chemical bases of the neurotransmitters and to the retinal activation system of brain function or to poor mental development.

Brain dysfunction: The individual's attention process to a particular stimulus is divided into a number of primary attention processes, which are identifying the source of the alert and directing the sensation to the stimulus, then focusing attention on it and each of these stimulating processes has a nerve center in the brain responsible for it.(Posner, et al, 1984,1988), the sensing of the stimulus has its nerve center in the brain, while the focus on the stimulus has its nerve center in the right frontal lobe (Swanson, et al, 1990) and each nerve center from the previous nerve centers processes its own perceptual process, Then links it to the outcome processes of the other nerve

centers and supply it with attention mechanisms, which in turn bring the individual's general attention structure to the stimulus, subject of alert.

If there is a malfunction in the functions of one of these nerve centers, the information it processes will become confused and unclear, and therefore the attention of the individual will become confused.

The most turbulent of these nerve centers is the nerve center responsible for focusing attention, and it was until recently thought that the posterior lobes of the brain were responsible for the weak ability to focus in individuals with attention disorder until (Parado et al 1990) came and examined blood flow in The brain of some children with this disorder, while focusing on different stimuli, and the results of their study have shown that blood flow decreases in the right frontal lobe of these children when their attention is focused on any stimulus, and that blood flow returns to its normal state when their attention turns to other stimuli, and therefore they emphasized that the right frontal lobe is responsible for the weakness of the ability to focus in children with this disorder.

Neurotransmitters:

The neurotransmitters of the brain are chemical bases that transmit nerve signals between the different nerve centers in the brain, and scientists believe that the chemical imbalance of these neurotransmitters leads to a disturbance of attention mechanisms, thus weakening the individual's ability to pay attention, focus, and take care of risks, and increase his impulsivity and motor activity.

Network activation system for brain functions:

The retina of the brain is chemical bases that extend from the brainstem to the brainstem, to the cerebrum , and it works to develop the individual's attention ability, direct attention toward the main stimulus, and select it from exotic stimuli (the filtering or filtering process of stimuli), and it also raises the level of awareness and takes care of risks. But if the brain activation system is disturbed, then it will lead to dysfunction, so the individual suffers from attention deficit disorder, and the evidence for that is that it spreads among the boxers, as if the boxer's head is exposed to a large number of strong strikes, a permanent disruption of the brain's retina will affect its functions and lead to the appearance of attention disorder, most notably dullness and low level of awareness, stimulant medicinal drugs and caffeine in coffee and tea stimulate the retinal system of brain function, and lead to an increase in the level of attentive efficiency in the individual.

Genetic factors:

Genetic factors play a prominent role in the injury of children with attention disorder, by transferring genes carried by the reproductive cell to genetic factors specific to the damage or weakness of some nerve centers responsible for attention in the brain, or by transferring these genes to structural defects that lead to brain tissue damage which in turn leads to poor growth Including attention nerve centers.

Recent scientific studies have revealed that (50%) of children with Attention Disorder also have in their families who suffer from this disorder (p231995, Nevill) that its prevalence rate among the children of these families is higher in children with twins than in children other

than twins, and that Its prevalence in twins is higher among identical twins that come from fertilization of one egg in the womb of the mother than it is between non-identical twins that come from fertilization of two eggs in the womb of the mother (kaplan, et al, 1994)

Environmental reasons:

These factors start to affect from the moment of fertilization. These factors are divided according to the size of their effect on infecting children into three stages:

Pregnancy stage:

Pregnant women in this period may be exposed to some of the things that affect the babe. They are exposed to a large amount of radiation or eating spoils or alcohol and some chemical odors or some medical drugs that affect pregnancy, especially in the first three months of pregnancy, as well as having some infectious diseases during pregnancy such as Infection with rubella, syphilis, smallpox, whooping cough or metabolic causes fetal damage to the brain, including the nerve centers responsible for the attention processes, so their children may be born with attention disorder or be prepared to have it.

Brain damage in this case may be accompanied by some deformities and birth defects. Some scientific studies have shown that children born with these deformities and birth defects suffer from attention disturbance.

Birth stage:

During the birth process, the babe's brain is damaged or some of its cells are damaged as a result of using some tools, especially during a

cesarean delivery or pressure on the babe's head. The umbilical cord is also wrapped during the birth process and the oxygen supply to the babe's brain stops, which leads to a weakening of the brain's ability to process information.

Post birth stage:

If a child has a concussion in the brain due to an accident, a head bump with solid objects, a fall on his head from high places, or a beating on the head, as well as some ground injury, meningitis, and spinal and cochineal fever lead to injury to some nerve centers in the brain, especially those responsible for attention and focus (Tupper, 1987) (Barkle, 1990).

Factors associated with feeding:

Child eating large quantities of ready or contaminated foods that leads to childhood attention disturbance. A study by Nussbaumigler (1990) confirmed that chromosomes and preservatives that are added to prepared foodstuffs cause children to develop attention disorder.

Wink et al. (Winneke, e al, 1989) have shown in a study aimed at examining the relationship between lead in the blood and attention disturbance in children, and the results of their study have shown that there is a positive relationship between the level of lead in the blood and the level of attention disturbance meaning that the higher the lead in the blood, the child's attention deficit and hyperactivity level increases.

The child's intake of large amounts of sugary substances leads to an increase in his motor activity. Studies aimed at revealing the relationship between a child's consumption of sugary substances have confirmed his excessive motor activity. All of them have shown that the sugary substances that a

child consumes do not lead to a disturbance of attention but lead to a high level of motor activity from his energy increase (Milick et pelham, 1986).

Psychological factors:

The child needs love, acceptance, and emotional warmth from his parents, such as his need for food, so the correct parental treatment methods that the child feels of attention and love from his parents lead to his psychological and social compatibility. As for the wrong parental treatment methods that are characterized by frank or persuasive refusal, neglect, child indifference and corporal and severe psychological punishment, where the child feels ostracized and undesirable, leads to attention disturbance (Mash et Hohanston, 1990).

The Barkley et al. (1993) study revealed a study aimed at examining the relationship between parental treatment and childhood attention disturbance, and the results of the study revealed that wrong parenting methods from which a child feels neglected and rejected by his parents lead to his attention disorder.

As the Kaplan and et al (1994) study showed with a study whose goal was to reveal the nature of the relationship between emotional deprivation of parents and the injury of their children's attention disturbance. The sample of their study consisted of children living in deposit institutions as a result of cracking their families, and children living in the natural environment with their families. The results of this study showed that attention disturbance rises in children who are deposited in these institutions compared to children who live with their families, which indicates that emotional deprivation from parents that results from family disintegration leads to the child's attention disorder.

Second: Measuring, diagnosing and treating attention disorders:**Symptoms of attention disorders in children:**

The symptoms of attention disturbance in children differ according to the age group that they are going through, as we find it in the stages of newborns, cradle, and early childhood taking the organic appearance, while we find it in the middle and late childhood stages taking the behavioral form

A- Symptoms of the disorder in the newborn stage:

A child born with attention disorder is less than his body weight relative to his height, as we find that a child who is 19 cm long weighs five and ten pounds, while a child who is 21 cm long weighs six pounds.

B- Symptoms of disorder in the cradle stage:

Children with attention disorder always suffer from numerous health problems in the cradle stage. Therefore, they often suffer from intestinal colic due to the inability of the intestine to absorb milk sugar, and the immune system is weak, therefore, they are exposed to colds and ear infections.

C - Symptoms of early childhood disorder:

The normal child protects his deciduous teeth between the sixth to eight months and that tooth falls out, and the permanent teeth appear between the fifth to the sixth year of the child's life. As for the child who suffers from attention disturbance, the date for the emergence of his deciduous teeth and their change in permanent teeth is approximately two years later than this date with the good child (Jordan, 1988).

D- Symptoms of the disorder in middle and late childhood:

At this stage the symptoms of attention disturbance take their behavioral form, but it is difficult to identify a child who suffers from this disorder before attending school and this is due to the following reasons:

The child in the pre-school age is very active by nature, and he spends most of his time playing and playing without requiring him to focus his attention for a long period of time.

The TV set provides interesting programs and fast pictures that attract the attention of children, including those who suffer from attention disorder, as they sit in front of the TV for a long time and watch their favorite programs continuously.

Most parents of children with this disorder do not have previous information or enough experience about this disorder, as they have become accustomed to their child's behavior and see it as normal, especially if the child is the only one in the family.

E - Symptoms of attention disturbance in school-age children:

Short attention:

A child who suffers from an attention disorder can focus his attention on any stimulus for more than a few consecutive seconds, then his attention is cut off from this alarm at the same time that the information is still coming from him, and therefore we find that the attention of the child who suffers from this disorder moves very quickly between different stimuli to the extent that some scientists have likened it to gunshots in terms of how long it lasts and how quickly it moves between different stimuli.

Ease of distraction:

A child who announces a disturbance of attention easily distracts him as it is difficult for him to focus his attention on a particular stimulus and ignore what is happening around him in the surrounding environment, and therefore we always find his attention diverted towards the movement that falls within his realization field in order to reveal what is happening around him.

Poor listening ability:

A child who has an attention disorder has a weakness in the ability to listen and therefore it seems as if he does not listen and for this reason we find that he cannot fully understand the information he hears but he may understand some of the letters, words or syllables and the information he acquires through the sense of hearing are confused, mixed and blurred, which results in the inability to think.

Delayed response:

The mental processes that process the information are very slow so this cannot retrieve the previously stored information that it needs from the long-term memory and it follows that the child takes a long time in the thinking process and this in turn leads to a delay in his response and an example of that child who counts on his fingers when he tries to find a solution to a mathematical issue, which makes him take a long time in the thinking process, and the result is that this child cannot finish the work that he is doing in the prescribed time for that.

Excessive motor activity:

The child with attention disorder is characterized by frequent physical movement without a cause or goal, he often leaves his seat and wanders back and forth in the place where he is without reason, as he is very moving, always writhes in his hands and feet, and puts things that are within his reach in his mouth such as pens. He also performs some physical movements that make noise and disturb others, for example, he may rub the ground with his feet to make a sound.

Rush:

One of the most common symptoms that characterizes a child who has an attention disorder is that he answers without thinking about the questions

before completing them and likes to answer his demands at once, and he refuses to wait for his role as he moves quickly from one activity or work to another before he finishes the activity or work that he started, In addition to the above, he performs some actions that endanger his life without taking into account the consequences, such as jumping from high places, running on a street crowded with cars without realizing the danger.

Social behavior:

A child with an attention disorder does not adhere to the established traditions and regulations, therefore he does not care about the acceptable social behavior that others accept if he wants to remove something from his neighborhood, for example the chair, he did so in a way that makes a strong noise in the place

Third: Attention Disorder in Mentally Retarded Children:

The results of scientific studies indicate that symptoms of disturbance of attention spread among mentally retarded children are higher than the prevalence rate among children with natural intelligence and the reason is due to the fact that the nervous system in mentally retarded children is full of noise and internal alerts, and that its ability to regulate stimuli in short-term memory in preparation for responding to a source of the alert, which leads to poor attention efficiency in these children compared to children with natural intelligence (Mr. Ali 1998).

The Fourth Statistical Diagnostic Manual for Mental Disorders (Dsm) has indicated the main symptoms on which the child's attention disorder is diagnosed at least six consecutive months before the diagnosis, and it must appear before the age of seven years, provided that they appear in both the home and school environment together and for example, the child mistake a lot for his active study duties, and the child cannot focus his attention for a

long period of time on a specific stimulus, he forgets the frequent and usual daily work that he performs.

1. Its symptoms:

Sleep disturbance:

Sleep disturbance is spread among children with attention disorder, which makes them always feel tired, and since this tiredness affects the attention efficiency, so some researchers have studied the way these children sleep and examine the nature of the relationship between sleep disorder and attention disorder. He and others (Ball, et al, in a study that aimed to identify sleep in children with attention disorder, the results of the study showed that sleep disturbance is spread among (81%) of children with attention disorder and it also spreads among (25%) of children with mental disorder only .

Learning difficulties:

Learning difficulties are common among children with attention disorder, as most of them may be due either to their inability to comprehensively read the reading material or because they suffer from language disorder (cavanaugh et al, 1997). The latter causes children to be unable to provide the correct response in their imagination, and rather on that, their speech disturbance causes them to jump from one topic to another, unable to provide the correct response in a logical, chain picture.

C- Academic delay:

1 - Poor understanding ability:

Children with attention disorder suffer from a weak ability to understand the information they receive, whether orally or in writing. As for oral information, the results of the recent study showed that children with this disorder do not understand more than (30%) of all the information they hear, but for written information, the nervous system of a child with an attention

disorder can also process all of the information it receives, and therefore we find that this child makes many mistakes in reading, and his error rate increases as the reading material increases, as the child may read the first page without errors but on the second page, he mistakes, and the percentage of his mistakes reach approximately (20%). On the third page, the percentage of these errors rises to (60%).

Therefore, the central nervous system of a child with an attention disorder cannot handle all the audiovisual information it receives, and therefore we find that his ability to understand is very weak and it follows that he also errs in responding.

2. Wrong response:

Poor ability to comprehend leads to a weak ability to remember where the child with attention disorder cannot summon the necessary information that he needs at this time from long-term memory, so most of his response is wrong, when the child solves a problem in mathematics where we find mistakes a lot because he forgets the names of the shapes engineering and the signs of addition, subtraction, and division, so he stops a lot to search his memory for this information that he forgot, and this affects his performance, especially if he answers a test, which makes him get low scores.

Fourth: The most important treatments for attention disorder:

Based on the foregoing, it appears that children's injury with attention disorder is due to several reasons, the most important of which is impairment in brain function, genetics and psychological factors. Therefore, treatment of this disorder should not depend on one method.

1- Medical treatment:

An imbalance in the chemical rules found in the neurotransmitters in the brain or in the network activation system for brain functions. Therefore, the

chemotherapy that is used in this case through psychological medications aims to restore the chemical balance of these chemical rules where its effect leads to raising the attention efficiency of the child, as it increases its concentration ability, and reduces impulsivity, aggression, and hyperkinetic activity (Pelham, et al, 1990).

However, medical drug therapy is not effective in all cases where we find that children who suffer from this disorder for reasons related to brain damage are not responding to chemotherapy and this is indicated by Barkley (1990), where he explained that there is a ratio of (65%) of children with attention disorder that Due to reasons attributable to brain damage that do not respond to treatment with medical drugs, he called for the necessity of the variety of treatment methods used to treat this disorder.

Also, the medicinal drugs used to treat this strike, which have proven effective in restoring the chemical balance of the brain's chemical bases, especially in neurotransmitters and the network activation system for brain function, are methylphenidate and Pemoline, which is known commercially as "cylert" as well as dextroamphetamine. Its use has improved the level of attention in children with this disorder, and it has also reduced mindfulness, impulsivity and aggression.

It is also used (clonidine) as a treatment for attention disorder and it was recently proposed as a treatment to reduce the symptoms of impulsivity and aggression (Hunt, et al 1986), although medical drug treatment is very effective in most cases, but it has some side effects that appear on the child such as insomnia, tendency to sleep and loss of appetite The food and the headache go away automatically and gradually after a week or two after starting treatment.

2- Psychotherapy:

As for the child who suffers from attention disorder, we find the educational problems that result from this disorder leading to his academic delay, and that some unacceptable behaviors also lead to a disorder of his social relationship with those around him, especially his peers, and this leads the child to feel failure and to lose his self-esteem as he feels loneliness, anxiety, depression and other emotional disorders.

As for the parents, some of them believe that it is the cause of their child's attention disorder, so they feel guilty. Also, the social behaviors of the child lead to their stress.

And it causes them many psychological pressures that are reflected on the relationship between the parents, which may lead to family rupture, hence the intervention of psychological treatment for that, psychological treatment is provided to the parents, which is sufficient information about this disorder, and shows them the emotional disorders that accompany it, as well as some guidance that helps them deal with their child who suffers from this disorder or his severity and helps the child adapt to his environment (Kelly et al, 1992).

3- Educational Therapy:

Children with attention disorder, some of them have learning difficulties associated with this disorder, so the child needs a special educational plan where the classroom where he studies with his normal peers must be equipped in a special way so that its location is far from the noise and external influences that distract the attention of the child with this The disturbance, as it must be well-lit and ventilated and equipped with furniture to comfort the child in his sitting. The classroom must also be free of

regulations attached to the walls and other things that lead to the visual distraction of the child.

In addition, there must be another classroom equipped for the child to be taught in an individual way and this teaching is done by another teacher because the child who suffers from attention disturbance is quickly bored of the recurring pattern, so changing the room and the teacher and the way of performance makes there an interesting situation in the educational situation and this is what helps the child in raising the level of his academic achievement.

The positive interaction between the teacher and the child helps him to form a positive concept about himself and helps him to get rid of his problematic behavior and develops the ability to focus his attention on the educational process.

Jennifer and Tom(Jennifer et all 1994) conducted a study to uncover the relationship between social status between peers and self-esteem among children with attention disturbance, and the results of the study showed that there is a negative correlation between the social status of the child between his peers and his appreciation of himself as there was a negative correlation relationship also between attention disorder and the child's self-esteem, meaning that the child's disorder increases with the lower his self-esteem.

Conclusion:

Through the foregoing, it was confirmed that attention disturbance leads to behavioral, psychological, and social problems. The troubled person suffers from problems. The affected children are more dynamic, impulsive, more bored, anxious and lonely, which increases the severity of the disorder.

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