

A review on learning disability - Attention Deficit Hyperactivity Disorder (ADHD)

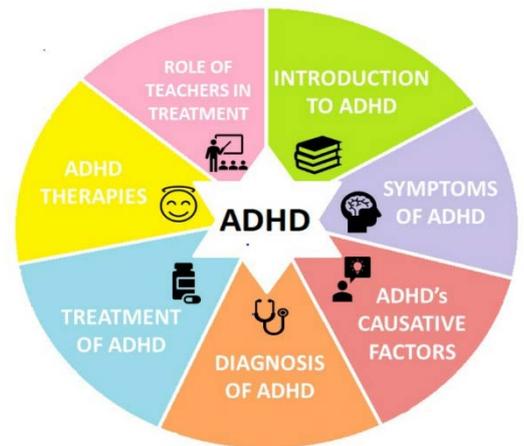
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ABSTRACT

The most common and thoroughly investigated neuropsychiatric disorder affecting children and adolescents is attention-deficit/hyperactivity disorder (ADHD), which is characterized by age-inappropriate inattentiveness, hyperactivity, and restlessness. A full patient background, a medical interview, and a complete physical examination are all required for the diagnosis of ADHD. A number of other illnesses can resemble ADHD or interact with it. The doctor must notice environmental elements that may influence the severity of the condition displayed by the ADHD child or adolescent. Treatment with a stimulant is likely to result in an instant, and often dramatic, reduction in the basic symptoms of ADHD. ADHD symptoms, which were considered to reduce as a kid aged, may linger throughout adolescence and adulthood, according to studies published in the last 20 years. This article provides a review of most materials that have emerged and clinical data on the assessment and therapy of ADHD in children and teens to aid in making suitable and cautious clinical decisions. Teachers are in charge of guiding pupils not just in academics or extracurricular activities, but as well as in shaping their destinies and developing them into better people. A teacher instills in students' knowledge, morals, customs, contemporary difficulties, and strategies for overcoming them. Hence, the role of teachers in treatment is very crucial.



Keywords: Attention Deficit Hyperactivity Disorder, ADHD, Drugs used in ADHD

Introduction

Despite being identified more than 200 years ago, studies and medical literature defining the disorder currently known as Attention-Deficit/Hyperactivity Disorder (ADHD) have evolved significantly in the last 35 years. ADHD is already recognized as the most common behavioural disorder in childhood, and affects virtually 10% of children aged 4-17 years in the United States, though a large number of data are lower (approximately 5%) and differ due to differences in diagnostic techniques, practice standards, and access to advanced clinical care.

ADHD symptoms often appear in early childhood, have such a chronic nature, and have a negative impact on afflicted persons' academic and social relationships. Despite

advancements in diagnosis methods, biomarker detection, and multimodal therapy, individuals with ADHD frequently suffer academically and socially, even when medicated. Approximately two-thirds of people have at least one co-occurring neurodevelopmental or psychiatric issue, making "simple" ADHD an exception instead of the standard (Adesman A R, 2001).

Educators and school officials are frequently the first to advise that a child be diagnosed with ADHD. Previous study indicates that teachers are often fearful of dealing with behaviour problems and are reluctant to accept accountability for pupils with special needs. In this post, we give six scientifically supported "must-knows" that dispel common myths regarding ADHD. These themes were chosen from a wide range of ADHD-related concerns as we consider they are perhaps the most effective in illustrating the catch-all aspect of the ADHD classification and/or the most representative of the negative repercussions associated with ADHD misconceptions. We primarily draw on researchers and practitioners in the United States, which is the epicenter of ADHD (Morrison JR and Stewart MA, 1973).

Symptoms of Attention Deficit Hyperactivity Disorder (ADHD)

Attention deficit hyperactivity disorder (ADHD) symptoms can be divided into two types of behavioral issues:

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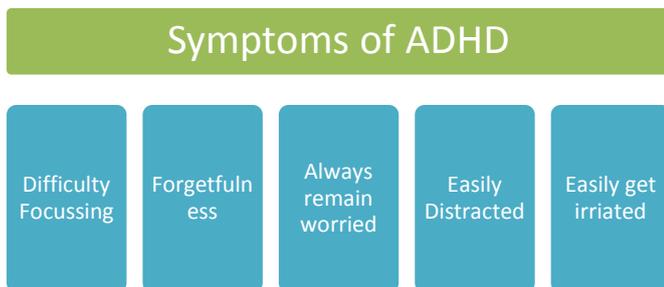
- Inactiveness (difficulty concentrating and focusing)
- Impulsiveness and hyperactivity

Many ADHD patients have issues that fit into both of these categories, but this is not always the case.

For example, around 2 to 3 out of every 10 people with the disorder have trouble focusing and concentrating, but not hyperactivity or impulsiveness.

This type of ADHD is often referred to as attention deficit disorder (ADD). Because the signs of ADD are not always visible, it can go undiagnosed.

Boys are more likely than girls to be diagnosed with ADHD. Girls are more likely to display attention deficits solely and become less likely to exhibit disruptive behavior that highlights ADHD symptoms. As a result, girls with ADHD may not be recognized (Gill M et al. 1997).



Symptoms in Children and Adolescents

ADHD symptoms in children and young people are clearly established, and they usually appear well before the age of six. They occur in multiple contexts, like at home or at school.

Children may exhibit symptoms of both inattention and hyperactivity and impulsiveness, or they could exhibit only one of these types of behavior (Biederman J, et al. 1996).

Inattentiveness

The following are the primary indicators of inattention:

- Being distracted easily and having a limited attention span
- Making casual mistakes - for example, acting inattentive or forgetting stuff in academics
- Being unable to keep to laborious or time-consuming work appearing was unable heed to or execute directions continually changing tasks or activity experiencing difficulties organizing tasks.

Impulsiveness and hyperactivity

The main symptoms of hyperactivity and impulsiveness are:

- Inability to sit still, particularly in quiet or peaceful circumstances.
- Difficult to focus on work due to frequent fidgeting
- Extreme force activity
- Excessive speech
- Inability to wait their turn
- Reacting without considering
- Disrupting talks

- Loss of sense of risk

Certain symptoms can lead to a child's health becoming complicated, resulting in behavioural problems, poor social interactions with other adolescents and adults, and scholastic underperformance.

Other related conditions are:

- Anxiety Disorder
- Oppositional defiant disorder (ODD)
- Conduct Disorder
- Depression
- Sleep problems
- Autistic Spectrum disorder (ASD)
- Dyspraxia
- Epilepsy
- Tourette's syndrome
- Learning difficulties

Symptoms in Adults

ADHD symptoms in adulthood are harder to define. This is primarily owing to a scarcity of studies on people with ADHD.

Because ADHD is a cognitive illness, it is thought that it cannot emerge in adults unless it initially appears in infancy. However, symptoms of ADHD in adolescents and teenagers can persist into adulthood.

Inattention, hyperactivity, and impulsiveness can impact adults in quite different ways than they do children.

Adults, for instance, tend to lose hyperactivity while retaining inattentiveness as the demands of adult years mount. Adult ADHD symptoms are also significantly more modest than childhood ones (Wolraich ML et al. 2019).

Some experts have proposed the following symptoms as a list of ADHD symptoms in adults:

- Inattention to detail and carelessness
- Starting new duties before completing old ones
- Ineffective organizational abilities
- Difficulty concentrating or prioritize
- Missing or misplacing items regularly
- Forgetfulness
- Agitation and jitteriness

Difficulty remaining silent and trying to speak from turn trying to point out reactions and frequently interrupting others changes in mood, tiredness, and quick irritability inability to cope with stress severe impatience risk-taking in actions, often with no respect for individual safety and the safety of others - for instance, driving recklessly.

Other related problems in Adults:

- Personality disorder
- Bipolar disorder
- Obsessive-compulsive disorder (OCD)

ADHD's Causative Factors

Researchers have been unable to pinpoint the precise origins of ADHD. Although there is substantial evidence that genes have a role in ADHD, and multiple genes have been connected to the illness, no single gene and gene combination has indeed been found as the root cause. It is crucial to remember, however, that families of people with ADHD are frequently affected as well. There is an indication of structural variations in the brain of children with ADHD compared to those who do not have the disorder. Children with ADHD, for example, have lower grey and white grey matter size and altered brain area activity during particular tasks.

Further research has revealed that ADHD affects the frontal lobes, caudate nucleus, and cerebellar vermis of the brain. Non-genetic variables such as birth weight, early birth, exposure to toxic substances (drinking, cigarettes, lead, etc.) throughout pregnancy, and high stress during pregnancy were also associated with the disease.

Diagnosis of ADHD

Criteria for Diagnosis

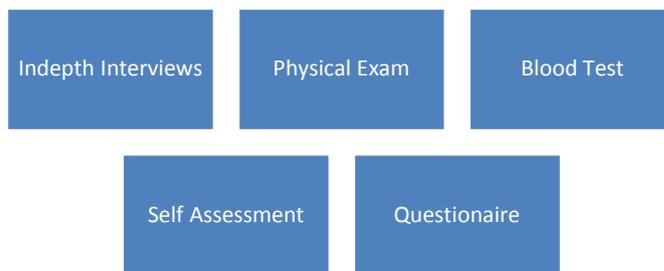
ADHD, like other mental and medical diseases, is a clinical diagnosis predicated on symptomatology and related deficits, rather than a single test. The DSM-IV specifies the diagnostic criteria most commonly employed in clinical practice in the United States. The evaluations are based on field trials, which were mostly conducted on children aged 5 to 12. 42 The diagnoses have to be pervasive (appear in a wide range of circumstances), have persisted for at least six months to a degree that is impaired and out of step with the developmental phase, have started well before the age of seven, and be the cause of significant educational and social difficulties.

Patient Assessment Evaluation

The American Academy of Paediatrics (AAP) has issued a Clinical Practice Guideline 44 proposing that all children aged 6 to 12 years be evaluated for ADHD if they exhibit inattention, hyperactivity, impulsivity, academic underachievement, or behavioural difficulties. A full patient history, clinical interview and observation, and a thorough physical examination are all required for the diagnosis of ADHD. If the procedure is to be completed properly, this should take several visits; if only one visit is possible, physicians must allow at least one hour for the initial evaluation.

Children and adolescents may be able to retain behaviour control in the open plan office, although they may be unaware of the impairment caused by their symptoms. As a result, parental discussion is important to the assessment process. Planned parent questionnaires and a DSM-IV symptom questionnaire could be helpful in this situation. Based just on parent and kid questionnaires, other ecological or psychological factors should be checked out during this time (Simon V et al. 2009).

To assess the patient's condition, student achievement, and punctuality, obtaining and reviewing progress reports and instructor evaluations is critical.



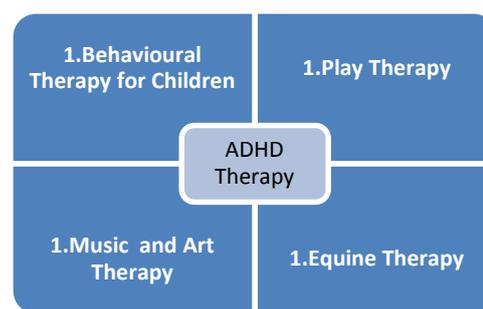
Diagnosis of ADHD

ADHD treatment typically includes a combination of counselling and medication. The suggested first-line approach for preschool-age and younger children involve behavioural measures such as parent training programs and school intervention. Parent-Child Interaction Therapy (PCIT) is a research-based treatment option for young children with ADHD and oppositional defiant disorder.

Psychostimulants (amphetamines and methylphenidate) are considered first-line pharmaceutical therapies for ADHD, according to current standards. Amphetamines are the sole FDA-approved medicine for preschool-aged individuals with ADHD, while guidelines suggest that methylphenidate, rather than amphetamines, may be beneficial if behavioural treatments fail. Other FDA-approved treatments for ADHD include alpha agonists (clonidine and guanfacine) and the selective norepinephrine reuptake inhibitor atomoxetine. There are newer FDA-approved medications for ADHD treatment, such as Jornay (methylphenidate extended-release), which is chosen to take at night and takes effect the next morning, Xelstrym (dextroamphetamine), an amphetamine patch, Qelbree (viloxazine), a non-stimulant, Adhansia (methylphenidate hydrochloride), Dyanavel (amphetamine extended-release oral suspension), Myday (methylphenidate extended-release orally disintegrating tablets) (Satterfield JH and Schell A, 1997).

Depending on the efficacy of treatment and how well a medicine is tolerated, most children and their families can transition among pharmacological alternatives. The goal of therapy is to improve symptoms so that you can function at home and school again.

ADHD Therapies



Behavioural Therapy for Children

By organizing time at home, creating consistency and routines, and boosting positive attention, behavioral therapy targets troublesome behaviors that are typical among children with ADHD. According to research (William Pelham, Jr., Ph.D., director of the Center for Children and Families at the State University of New York at Buffalo), an effective behavioral treatment strategy starts with common sense parenting.

Plans for behavioral treatment for ADHD ought to:

- Use a reward system to encourage positive conduct.
- Ignore bad conduct to discourage it.
- If the bad behaviour is too severe to ignore, remove the privilege.
- Eliminate the usual causes of negative conduct.

Play Therapy

Children with ADHD can interact, learn, get reassurance, reduce anxiety, and boost their self-esteem through the use of play therapy. Therapists can reframe children's views, cognitions, and actions via play. According to Houston-based child psychologist (Carol Brady, Ph.D), children interact figuratively via play. It functions as a therapeutic technique similar to offering a sweet pill as opposed to a bitter one. A young child needs to play with you to feel connected, safe, and attached.

Music Therapy

- Structure is provided by music. A brain with ADHD that struggles to control itself to stay on a straight route finds solace in rhythm because rhythm is structure, and structure is what music offers.
- Music Activates Synapses. According to research, listening to enjoyable music raises dopamine levels in the brain. In ADHD brains, this neurotransmitter is deficient, which controls motivation, working memory, and attention.
- Sound is social. Tomaino, a music therapy veteran of 30 years, advises, "Think of an orchestra." "If one instrument is absent, the piece cannot be performed. All "voices" are required.

Equine Therapy

Rather than talking about their issues, equine assisted psychotherapy (EAP) clients engage with horses under the supervision of a professionally trained mental health professional and an equine expert. This type of experiential ADHD therapy is called equine-assisted therapy.

One EAP model that is beneficial for treating ADHD is Natural Life-manship. It is a trauma-informed strategy built on the neurobiology of relationships and their importance. To establish a relationship with a horse, clients learn to control their body energy and recognize nonverbal clues. Other humans can't or won't respond to the client's activities in the same way as the horse does (Knous LE, 2014).

Art Therapy

Art therapy is beneficial for adolescents and adults suffering from ADHD as well as other neuropsychological issues who really can express themselves more easily thru the production of visual images and art rather than via spoken or written communication. Children with ADHD who are hyperactive and busy may benefit most from art therapy because it keeps their hands engaged and fosters a sharp mental and emotional concentration that is sometimes difficult to accomplish in conversion therapy.

To treat emotional issues, foster interpersonal skills, control behavior, lessen stress, and promote self-awareness; art therapy is used with children who have ADHD. Through art therapy, children with ADHD can improve their thinking skills, their

ability to solve problems, and excellent effective communication as they explain their work to a family or partner. Natural social connections via art are also possible, such as exchanging materials, giving praises, or even providing ideas.

Role of Teachers in Treatment

Teachers need to be aware that their students have different personalities. The support of the school's kids comes in large part from the child's parents. If your child has ADHD, you should assist the instructors and lessen their workload. When assessing the requirements of the children, the teachers have a specific responsibility. They ought to evaluate their advantages and disadvantages and take action if necessary. Those who have ADHD may have smart or average children. As a result, these youngsters can attend a regular school. Some intellectually challenged students might attend a special school. The teachers can support the students in maintaining concentration and maximizing their learning. These pupils ought to take the first bench in the first row (Mulligan S, 2001).

Some teachers would only say, "We constantly bug the youngster to make notes, but he's not writing," as an example. However, even though these children may be extremely intelligent, they may not reach their full potential because of the teacher's negative attitude. Teachers cannot advance in their careers if they refuse to perform their tasks. When they are educating in an elegant style, they can readily capture the interest of such kids. They should highlight certain key topics on the smartboard as they are explaining. On the board, they should occasionally draw an image or a diagram.

These students typically experience more visual stimuli. Sometimes teachers would hold up signs to get the pupils' attention. Both other members of the class and pupils with ADHD issues cannot benefit from these visual presentations. These pupils shouldn't be seated close to a window or any other structure, such as a cabinet. When the student is unattended, the teacher should keep an eye on them. Some professors groan, "I have no time." If the teacher has time management skills, he or she can undoubtedly spend some time with the student. They must be knowledgeable about how to instruct such students. Ideally, they ought to offer one task at a time (Arcia E, et al. 2000).

Conclusion

ADHD is a chronic neurodevelopmental condition that affects children, adolescents, and, increasingly, adults. Although it has not been shown definitively, it is thought to be determined by a combination of neurological and hereditary variables. A thorough clinical history is used to make the diagnosis, with statements both from parents and teachers required for a thorough evaluation. A multitude of other diseases can coexist or masquerade as ADHD; when completing an initial assessment of a patient with ADHD symptoms, physicians must evaluate the numerous potential alternative diagnoses and comorbidity. Despite recent criticism, stimulant medicines (methylphenidate and amphetamine formulations) constitute first-line therapy in the treatment of ADHD.

Over-diagnosis of ADHD and improper stimulant prescription remain an issue; nonetheless, untreated ADHD may be connected with poor confidence, academic and social failure, and a higher likelihood of eventual antisocial behavior and drug misuse. Accurate identification and care of this illness

may hold the key to enhancing the long-term results of adolescents with this disease.

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