

Attention deficit disorders in adults

Abstract

Among the disorders that are most extensively investigated in medicine, especially in pediatrics, ADHD is considered a neuro-psychiatric disorder with multifactorial development, based on genetic predisposition and neurobiological disruptions. Epidemiological data indicate a global prevalence of 5.29% among individuals under 18 years of age, and recent analysis documents a prevalence of 2.5% in adults.¹ Although previously it was considered that it remits in childhood or during adolescence, long-term studies on the term of children and prospective studies on adults with ADHD have shown that the disorder persists even into adulthood.² In general, problems related to ADHD include, for children, a higher risk of poor school performance, lower academic achievements, lower grades, school suspensions, and extracurricular difficulties. In the case of adolescents, they may experience strained relationships with family, school dropout, aggression, conduct problems, and substance experimentation and abuse. In the case of adults, there may be accidents related to driving and violations of traffic rules, social difficulties in relationships, marriage, and employment.² ADHD and comorbid depression are frequently reported, with prevalence rates in individuals with ADHD ranging from 18.6% to 53.3%.³ Similarly, studies have documented comorbidity between ADHD and depressive disorders with rates ranging from 9% to 16%, with a median rate of 7.8%.⁴

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Introduction

ADHD is widely recognized as one of the most prevalent psychiatric disorders among school-age children, with a prevalence rate of 3-7%. Data indicates that boys tend to be diagnosed and treated more than girls.⁵ In maturity, the presentation of ADHD varies considerably, which has been suggested to be explained through biased diagnostic and methodological differences. Prospective studies indicate a decrease in the frequency of ADHD symptoms with age, significant symptoms may persist, leading to underdiagnosis.²

In contrast, the functional impairment caused by ADHD in adults after childhood varies greatly across domains. For instance, car accidents among adults with ADHD may be more substantial than in those without the condition.⁶

In short, the prevalence of ADHD in the general adult population is estimated to be at least 2-4%.⁷ In addition to the core symptoms of ADHD, many individuals with the condition also experience delays in development, including sensory, motor, language, and intellectual difficulties, which are often found in this population.⁸ Thus, even in preschool-age children, those with ADHD may have associated handicaps and disorders that involve sensory-motor difficulties. This leads to an increase in the utilization rates of remedial services, such as speech and language therapy, occupational therapy, and physical therapy, and they are more likely to be placed in special education programs. The clinical diagnosis of ADHD in preschool-age children involves provocation and validation of the diagnosis, and it has been challenging to establish. The absence of a dedicated development assessment protocol contributes to the hesitance in diagnosing ADHD in preschoolers. The combined type and the hyperactive/impulsive type are the most frequent, but as mentioned earlier, preschoolers rarely fit the criteria for hyperactivity. Instead, they often present as predominantly inattentive or as a combination of symptoms, which may evolve over time.⁹

Cognitive-behavioral therapy (CBT) is centered around the interplay between cognitive functions, emotions, and a person's

actions. When tailored for individuals with ADHD, CBT primarily focuses on enhancing time management and organizational skills. It is widely acknowledged as an effective psychological treatment for adults dealing with ADHD. Recent research indicates that this therapy has a functional impact on specific brain regions, namely the frontal-parietal and cerebellar regions, which are areas influenced by medications commonly prescribed for ADHD, such as stimulants.

In addition, a study conducted by Wangler S et al.,¹⁰ in 2010 discovered that using CBT to treat ADHD yielded positive results, yet combining CBT with medication produced even more significant improvements compared to using CBT alone. Research also includes investigations into the outcomes of CBT and medication when applied to children and adolescents with ADHD. It was observed that adolescents with ADHD, along with comorbid anxiety or depression, tended to derive greater benefits from this combined approach compared to those with oppositional defiant disorder.

Following the findings that support the utility of cognitive-behavioral therapy (CBT) in major disorders and due to its practicality in the short term, based on evidence, cognitive-behavioral therapy appears to be gaining popularity as an evidenced-based practice. When clinicians report utilizing cognitive-behavioral therapy, specific techniques they may include aspects actively supportive of one treatment sustained empirically.¹¹

Cognitive-behavioral therapy (CBT) involves a complex interaction of a client's thoughts, emotions, and behaviors in the treatment of various clinical issues. Considering the intricate interplay of thoughts-emotions-behaviors is an integral part of the assessment process, as it provides the therapist with a comprehensive understanding of the clinical problem and where interventions should be applied. While general models in cognitive-behavioral therapy consolidate these components, the therapist must adapt the model to the specific issue faced by the client.

Cognitive-behavioral therapy (CBT) entails engaging patients in the process of traversing a mental landscape, helping them "see" and navigate their inner world as needed. A crucial aspect here is

that CBT addresses the role of thoughts, emotions, and behavior in conceptualizing and treating clinical problems, incorporating skills that are relevant as they arise and where they are necessary. Thus, a pivotal element is that CBT encompasses the ability to adapt and relate to these components effectively.

ADHD has been described not as a mere knowledge disorder, but as a “knowing how to do” rather than a “knowing that” condition. ADHD is somewhat less about cognitive awareness and more about cognitive performance. Thus, for a treatment based on the ability to be successful, it cannot simply educate the client to convince them that their abilities are valuable; clients with ADHD may agree entirely that their abilities are valuable, comprehend fully how this could help, and grasp the intellectual pathways to implementation, yet still struggle to consistently follow through.

In this regard, cognitive-behavioral therapists, when working with adults with ADHD, must constantly incorporate strategies that assist clients in implementing these abilities effectively. The active ingredient in cognitive-behavioral therapy for adults with ADHD is the measure by which clients implement coping abilities to compensate for their ADHD-related challenges. ADHD is primarily a neurobiological disorder, meaning that effective treatment relies to a significant extent on its biological aspects and is not solely dependent on environmental or behavioral interventions. The cognitive-behavioral model of ADHD in adults is based on the understanding that ADHD is a neurobiological disorder with core symptoms related to executive functioning and difficulties with inhibition.

Considering that many adults taking medication for ADHD still face challenges, so developed a cognitive-behavioral approach specifically designed to meet the unique needs of this population. The treatment includes three core skill modules: organization and planning skills, reducing distractibility, and addressing dysfunctional thought patterns.

A clinical trial employed two studies to evaluate the effectiveness of cognitive-behavioral therapy (CBT) for adults with ADHD compared to medication alone. The first study involved 31 adults receiving ADHD medication, randomly assigned either to cognitive-behavioral therapy or to continue medication alone. Cognitive-behavioral therapy was found to significantly reduce ADHD symptoms, according to both “blind” evaluator assessments and self-reports compared to medication continuation.

The second study included 86 participants taking medication for ADHD, comparing cognitive-behavioral therapy to a control group that received relaxation-based symptom management.¹⁰ This study rigorously assessed specific abilities predicted during cognitive-behavioral therapy, and the results showed sustained benefits at 6- and 12-month follow-up, indicating the durability of the effects.

The study conducted by Cortes S et al.⁵ aimed to develop a cognitive-behavioral therapy group for adults with ADHD. This approach helped clients enhance their executive functioning abilities to compensate for neurophysiological deficits underlying ADHD symptoms. The participants engaged in a 2-hour weekly session focused on time management, organization, and long-term planning. This presentation order of skills allowed clients to work on skills that apply to basic life functioning, gradually mastering more complex ones.

Moreover, clients learned to address motivation through reinforcement and learning self-regulation skills, overcoming procrastination, and restructuring cognitive distortions that

hindered the utilization of their abilities. Importantly, the treatment incorporated various components to assist clients in maintaining gains in the long term. Firstly, a complete day from the preceding week was dedicated to examining and sourcing feedback from group members to encourage positive feedback and reinforcement for their behavioral change efforts. Secondly, homework assignments in the form of practice at home were guided by a structured manual that included self-instructions and utilization requests from clients in evaluating their progress. Lastly, treatment involved repeatedly invoking learned skills to assist clients in applying these skills in real-life situations. This inclusion of these elements contributes to the likelihood that clients will successfully implement their skills in situations outside the treatment.

The clinical effectiveness of this approach is supported by a study by Cortes S et al.⁵ which included 38 participants with ADHD who varied in their medication status. They either participated in an 8- or 12-week cognitive-behavioral therapy group. Symptom reports of DSM-IV inattention symptoms or significant improvement in problems with attention were assessed, with a strong effect size observed. This effect was not dependent on medication status. Cortes S et al.⁵ conducted a larger study with 88 subjects, comparing the cognitive-behavioral therapy group to a control group. Cognitive-behavioral therapy was associated with a significant reduction in significant symptoms of DSM-IV inattention, evaluated by investigators on the problems of attention and memory reported by another significant symptom. For problems of memory and attention reported, the level of symptom improvement was related to the treatment group so that participants with higher levels of these symptoms initially presented much greater benefit in subsequent cognitive-behavioral therapy, especially with the level of support.

After illustrating this treatment approach, cognitive-behavioral therapy (CBT) is employed to assist adults with ADHD in acquiring and implementing skills in their daily lives, aiding them in compensating for symptom-related difficulties and maintaining motivation to apply these skills over time.

Objectives

The current practical-applied objectives are as follows:

1. Discerning differences in the manifestation levels of ADHD symptoms among subcategories that do not promise any form of treatment, those that promise medical treatment only, and those that promise both medical and psychotherapeutic treatment.
2. Identifying variations in the levels of anxiety symptoms among ADHD subcategories that do not promise any form of treatment, those that promise medical treatment only, and those that promise both medical and psychotherapeutic treatment.
3. Recognizing disparities in the manifestation levels of depressive symptoms among ADHD subcategories that do not promise any form of treatment, those that promise medical treatment only, and those that promise both medical and psychotherapeutic treatment.
4. Analyzing the report data from institutional manifestations of ADHD, depressive symptoms, and anxiety type manifestations within each of the respective subcategories.

Hypotheses of the study are as follows:

1. We anticipate that individuals diagnosed with ADHD will have a higher level of anxiety compared to those who do not receive any form of treatment.

2. We expect that individuals diagnosed with ADHD will also exhibit higher levels of depression compared to those who do not receive any treatment.
3. We anticipate that individuals undergoing psychotherapeutic treatment or those who are symptomatic of ADHD may report comparative levels of anxiety compared to those who do not undergo any form of treatment.
4. We anticipate that individuals diagnosed with ADHD who undergo psychotherapeutic treatment may exhibit similar levels of anxiety compared to those who do not receive any treatment.
5. We anticipate that individuals diagnosed with ADHD who undergo psychotherapeutic treatment may report similar levels of depression compared to those who do not receive any treatment.

Research participants

The study and instrumentation methods were applied to a total of 40 participants, all of whom were between the ages of 20 and 30, and they were selected through random sampling. These 40 participants were divided into two study groups:

1. A group consisting of 20 participants diagnosed with ADHD who did not follow any form of therapy. Among these, 10 participants were male, and 10 were female.
2. A group consisting of 20 participants diagnosed with ADHD who were undergoing medical treatment and following psychotherapeutic intervention. Among these, 10 participants were male, and 10 were female.

The study and research tools were employed to assess and analyze the differences between these two groups of participants. Participants were willing to take part in the study.

Methods

Description of psychological utilization scale

The Adult ADHD Self-Report Scale (ASRS-V1.1): The Adult ADHD Self-Report Scale (ASRS-V1.1) is a subset of items from the WHO's list for verifying symptoms on the Adult ASRS-V1.1 self-evaluation scale for ADHD with 6 targeted questions. Screening is conducted using multiple evaluation scales for ADHD. For example, the Adult ADHD Self-Report Scale (ASRS-V1.1) was specifically designed for individuals aged 18 and above. As respondents answer each question, they mark with an X in the box that best describes how they have felt and behaved in the past 6 months.

Beck depression inventory: The Beck Depression Inventory is a 21-item questionnaire designed to assess reactive (exogenous) depression, which depends on external stimuli. Each item is formulated to correspond to four degrees of depressive symptoms (sadness, dissatisfaction, self-blame, pessimism, mental discomfort, feeling guilty, worthlessness, self-dislike, decision-making, sleep disturbances, fatigue, loss of appetite, weight loss, bodily preoccupation, somatic symptoms, loss of interest, indecisiveness, concentration difficulties, tiredness, and loss of libido). The score obtained is directly proportional to the level of depressive symptoms.

Anxiety self-rating questionnaire (ASQ) measurement: The ASQ questionnaire measures cognitive, somatic, and behavioral dimensions of anxiety. It consists of 36 items constructed and validated by Lehrer and Woolfolk in 1982.

Responses are given on a scale of 0 to 9, with 0 indicating minimal manifestations and 9 being the maximum. Scores are calculated for each dimension:

- Cognitive
- Somatic
- Behavioral
- A global score for anxiety by summing up the partial scores.

Results

In the context of the first hypothesis, I anticipated that individuals diagnosed with ADHD would also exhibit a level of anxiety correlated with the manifestations of ADHD symptoms. To test this hypothesis, I correlated the results obtained from the 60 subjects on the ADHD assessment scale ASRS with those obtained from the subjects who participated in the ASQ anxiety questionnaire. In SPSS, I calculated the Pearson correlation coefficient. The results are presented in the Table 1 below.

Table 1 Pearson correlation coefficient

	ASRS	ASQ
ASRS Pearson Correlation	1	,522**
Sig. (2-tailed)		,000
N	40	40
ASQ Pearson Correlation	,522**	1
Sig. (2-tailed)	,000	
N	40	40

**Correlation is significant at the 0.01 level (2-tailed)

We observe a significant positive correlation between the results obtained on the two scales, ASRS for measuring ADHD symptoms and ASQ for measuring anxiety symptoms. In this sense, from a statistical perspective, this hypothesis can be confirmed. This means that there is a significant correlation between the level of ADHD symptoms and the level of anxiety symptoms; as ADHD symptoms become more pronounced, anxiety symptoms also tend to increase.

Confirming this hypothesis implies that individuals diagnosed with ADHD and those with a higher level of anxiety symptoms may exhibit a closer relationship between the two.

Within the framework of the two hypotheses, we anticipate that there is a potential correlation between individuals diagnosed with ADHD and a higher level of depressive symptoms as reflected in the responses of the participants.

To verify this hypothesis, we will examine the correlation between the results obtained on the ASRS scale for measuring ADHD symptoms and the responses collected on the Beck Depression Inventory (BDI). In the SPSS software, we will calculate the Pearson correlation coefficient. The results are presented in the Table 2 below.

Table 2 Pearson correlation coefficient

	ASRS	BDI
ASRS Pearson Correlation	1	,484**
Sig. (2-tailed)		,000
N	40	40
BDI Pearson Correlation	,484**	1
Sig. (2-tailed)	,000	
N	40	40

**Correlation is significant at the 0.01 level (2-tailed)

We observe a significant positive correlation between the results obtained on the two scales, ASRS for measuring ADHD symptoms and BDI for measuring depressive symptoms. In this context, from a statistical perspective, the hypothesis is confirmed. This implies that there is indeed a meaningful correlation between the levels of ADHD symptoms and depressive symptoms, where higher levels of ADHD symptoms are associated with higher levels of depressive symptoms, and vice versa.

Therefore, within the framework of these two hypotheses, it can be confirmed that individuals diagnosed with ADHD tend to have a corresponding level of depressive symptoms.

Table 3 One sample statistics

	N	Mean	Std. deviation	Std. error mean
ASRS1	20	1,559,820	311,082	191,525
ASRS2	20	1,015,680	101,528	136,421

Test Value = 0						
				95% Confidence interval of the difference		
	t	df	Sig. (2-tailed)	Mean difference	Lower	Upper
ASRS1	9,821	19	,000	1,559,820	104,728	191,547
ASRS2	7,652	19	,000	1,015,680	50,182	133,820

We observe a significant difference between the two groups, the scores obtained on the ASRS Scale for ADHD evaluation in individuals who do not follow therapy being much lower than those observed in subjects undergoing psychotherapy. In this sense, statistical analysis anticipates a significant discrepancy in the ASRS ADHD evaluation scores between subjects not engaged in therapy and those participating in therapy sessions.

This reflects the impact of therapy or non-participation in therapy on ADHD evaluation scores. In the context of the fourth hypothesis,

Table 4

	N	Mean	Std. deviation	Std. error mean
BDI1	20	2,817,500	1,176,236	185,979
BDI2	20	2,014,520	854,838	119,257

Test Value= 0						
				95% Confidence interval of the difference		
	t	df	Sig. (2-tailed)	Mean difference	Lower	Upper
BDI1	10,979	19	,000	2,817,500	164,132	379,368
BDI2	7,854	19	,000	2,014,520	71,054	287,432

We observe a significant difference in the scores on the Beck Depression Scale between individuals diagnosed with ADHD who do not undergo therapy, showing significantly higher scores than those who receive psychotherapy. In this sense, statistical data suggests that there is a notable difference in depression levels between individuals diagnosed with ADHD who do not participate in therapy and those who do receive psychotherapy, confirming the fourth research hypothesis, which investigates why individuals undergoing psychotherapeutic treatment or experiencing a higher level of depression report significantly different outcomes than those not receiving any therapy.

All those who undergo a process of self-discovery should confirm, subject to diagnostic difficulties with ADHD, whether they follow a psychotherapeutic treatment or a new form of depression, as compared to those who do not experience any sense of therapy.”

In the context of the third hypothesis, it was expected that individuals receiving psychotherapeutic treatment would demonstrate reduced levels of ADHD symptoms in comparison to those who are not receiving treatment.

To test this hypothesis, we assessed the scores from the Yale-Brown Obsessive-Compulsive Behavior Scale for individuals receiving therapy for ADHD (ASRS1) and those who were not (ASRS2). The outcomes are displayed in the Table 3 below.

It is expected that individuals diagnosed with ADHD who are undergoing psychotherapeutic treatment or experiencing a higher level of depression will report comparatively different outcomes than those who do not receive any therapy.

To test this hypothesis, I compared the results on the Beck Depression Scale (BDI) between individuals diagnosed with ADHD who do not undergo any type of therapy (BDI-1) and those diagnosed with ADHD who are involved in psychotherapy sessions (BDI-2). The findings are presented in the Table 4 below.

The fourth hypothesis is confirmed, especially in diagnostic cases with ADHD, those who follow a psychotherapeutic treatment or a higher level of depression, as compared to those who don't follow any type of therapy.

In the context of the fifth hypothesis, I anticipate that individuals with ADHD who undergo psychotherapeutic treatment or those at a higher level of self-reported anxiety, compared to those who do not undergo therapy, may exhibit different measurements on the anxiety chest questionnaire (ASQ). To verify this hypothesis, I will compare the scores obtained on the ASQ1 by individuals who do not undergo therapy with those obtained by individuals undergoing psychotherapy (ASQ2). Starting with the hypothesis that self-discovery confirms, especially in cases of ADHD diagnosis, those who undergo psychotherapeutic treatment or a higher level of self-reported anxiety compared to those who do not follow any type of therapy.

Conclusion

The sentences state that it is well-established that ADHD is a disorder found in both adults and children. Medical professionals working with adults will often encounter individuals with this disorder, and pediatricians who treat ADHD in children may also provide treatment for adults with similar symptoms.

ADHD symptoms can manifest differently in adults compared to children, and this calls for specific diagnostic criteria and treatments for adults. ADHD can also co-occur with other disorders, requiring clinicians to analyze, diagnose, and treat them accordingly. Medical professionals treating adults must be well-versed in comorbidities and differing diagnostic criteria, such as those seen in personality disorders and anxiety disorders.

The first step in treating adults with ADHD is to provide feedback to the individual about their ADHD symptoms and screen for comorbid disorders. Following this, psychoeducation begins, explaining ADHD to the individual, including symptom presentation, developmental history, and achievements. Then, treatment goals are identified with the individual, prioritizing objectives that are most important, and a treatment timeframe is established.

The next step involves conducting studies with medications to determine which one is the most effective in treating the individual's ADHD. After the individual begins taking medication, it's useful to restructure the individual's environment to make it more conducive to their well-being.

Psychotherapy can be advantageous in addressing a range of lingering challenges. The therapist should proactively anticipate and strategize interventions aimed at achieving long-term goals, enhancing functionality, and fostering personal development.

The evaluation and assessment of adults presenting ADHD symptoms before treatment implementation are crucial. This evaluation should consider alternative explanations, the client's current motivation for treatment, potential comorbid aspects, and whether these characteristics emerged before or after ADHD symptoms. In current cases, comorbid traits that appeared during childhood have been significant in shaping the treatment approach.

In the same way that I've mentioned before, understanding the motivation of a particular client to seek treatment at a given moment is essential when considering treatment initiation. In some current cases, immediate concerns, such as academic and professional worries and marital issues for Andrea, have been crucial to address. This approach is framed within a developmental context, including the development of comorbid traits, as previously indicated.

Simply adopting a one-size-fits-all approach to tackling immediate problems can prove difficult and may require adaptability in terms of organization, problem-solving, and adopting adaptive cognitive strategies. In other words, treatment was pharmacological and was implemented in these two cases. As a recommendation, close collaboration between prescribing physicians and psychiatrists can enhance treatment outcomes.

I recommend supplementary evaluation based on current case studies that specifically consider the impact of ADHD symptoms on adult relationships. In one of these case studies, weak marital functioning was one of the main motivators for seeking treatment.

As treatment progresses, the client's persistent pattern of weak adaptability and coping strategies associated with ADHD in adults is identified as a significant factor influencing their relationships.

Clinicians must not only address difficulties and adaptive strategies associated with ADHD in adults at the individual level but also explicitly incorporate this into treatment. This kind of consideration doesn't just serve a preventive role in treatment (e.g., divorce prevention) but also plays a role in other significant coping abilities that help effectively engage with an adult with ADHD.

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Conflicts of interest

The author declares that there are no conflicts of interest.

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