

**ATTENTION DEFICIT/
HYPERACTIVITY
DISORDER (ADHD)
IN CHILDHOOD:
CURRENT TRENDS IN
MULTIDISCIPLINARY
THERAPY**

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Abstract: Attention Deficit/Hyperactivity Disorder (ADHD) is the most common neuropsychiatric disorder in children, with a prevalence of 5% in schoolchildren in Brazil. The primary symptoms are attention deficit, hyperactivity and impulsivity, other presentations may be difficult to perform basic activities that require concentration, low academic performance, anxiety, feelings of guilt and inadequacy. In this context, ADHD presents a heterogeneous clinical picture, requiring an assertive diagnostic approach and multifactorial therapy. Given the importance of the topic, the present work consists of a literature review with articles published in the Scielo and Pubmed databases, with the combined descriptors “ADHD”, “children”, “treatment”, and aims to present and discuss the pharmacological and non-pharmacological approaches currently used in the treatment of ADHD in children. In the therapeutic approach to ADHD, the process begins with family and school guidance, aiming for better adherence to treatment. The first-line pharmacological treatment recommended for children with ADHD is methylphenidate (MFD), which is available in immediate-release or prolonged-release form. The use of tricyclic and atypical antidepressants, such as imipramine and bupropion, respectively, also has good evidence. In this sense, the pharmacological choice requires an individualized assessment, and must be associated early with non-drug interventions, especially in the context of psychotherapy, highlighting Cognitive Behavioral Therapy (CBT), which uses techniques such as self-instruction, self-monitoring, planning and creation of reward systems that motivate the child during therapy. Therefore, ADHD in childhood appears to be a very complex condition, which demands treatment that involves the participation and understanding of the family, with a focus on

social inclusion in different sectors, such as the school environment, aiming at continued care, which is value of the pharmacological and non-pharmacological devices available in the health system.

Keywords: Neurology; Pediatrics; ADHD; Pharmacological Treatment; Psychotherapy.

INTRODUCTION

Attention Deficit/Hyperactivity Disorder (ADHD) is a highly prevalent neuropsychiatric disorder in children, with a prevalence of 5% in schoolchildren in Brazil. This disorder manifests itself through primary symptoms that involve age-inappropriate attention deficit, hyperactivity and impulsivity, and generates difficulties in carrying out activities that require concentration. In addition to these symptoms, the following are also present: difficulty dealing with frustration, irritability and emotional lability (BERNARDES; SIQUEIRA, 2020). This translates into difficult relationships with peers and parents, poor academic performance, and a greater risk of social isolation. As a result, the child's quality of life is significantly reduced (LOIOLA, 2020).

Initially, it is essential to educate the family about the condition and the treatment that will be carried out. This guidance aims to increase adherence to treatment, simplify family life, help understand the patient's behavior and teach techniques to deal with symptoms and prevent future problems. In addition to the family, it is important to provide school guidance to improve the interaction of children with ADHD with their peers, avoiding lack of interest in school and studies, a common reality among children with ADHD (DESIDERIO; MIYAZAKI, 2007).

Regarding pharmacological therapy, psychostimulant medications represent the first treatment option and can be prescribed

from 6 (six) years of age. These drugs do not cure the condition, but function as neurochemical regulators, increasing the availability of catecholaminergic neurotransmitters at the synaptic level, which helps to mitigate the clinical aspects of ADHD, directly related to the deficit of dopamine and noradrenaline (RUIZ; SANTOS, 2023).

However, it is important to highlight that ADHD has a multifactorial aspect, which includes biological, psychological and environmental factors. Therefore, for an effective therapeutic intervention,

It is essential to adopt a multidisciplinary approach that integrates pharmacotherapy, psychotherapy and psychopedagogy. These three combined approaches have the potential to collaborate in the creation of more functional behavior patterns, thus favoring improved quality of life (SOUZA, 2020).

This review article aims to carry out a comprehensive analysis of the pharmacological and non-pharmacological approaches that are currently being used to treat ADHD in children. The relevance of this work lies in the need to provide updated and scientifically based information that can assist doctors, health professionals and families in managing this disorder.

METHODOLOGY

This study is an integrative review, with the purpose of identifying and analyzing existing evidence of health practices, based on empirical and theoretical literature related to Attention Deficit/Hyperactivity Disorder (ADHD) in childhood and current trends of multidisciplinary therapy.

Articles were selected from the Scielo (Scientific Electronic Library Online) and Pubmed (Public/Publisher MEDLINE) databases, with the combined descriptors "ADHD", "children", "treatment", "psychotherapy", "pedagogy",

“pharmacological treatment”. Furthermore, Law No. 14,254, of November 30, 2021, was also used, which provides for comprehensive support for students with dyslexia or Attention Deficit Hyperactivity Disorder (ADHD) or another learning disorder.

The inclusion criteria for articles initially defined for this integrative review were: articles published in Portuguese, English and Spanish, with abstracts available in the selected databases; articles that reported on childhood ADHD and the main current pharmacological and non-pharmacological treatments.

The search in the databases was carried out via online access. Care was taken to exclude articles that were repeated between the bases. From this, a total of 19 articles were selected.

DEVELOPMENT

ADVANCED PHARMACOLOGICAL APPROACHES

The basis of pharmacological treatment for ADHD includes the use of psychostimulants such as methylphenidate and amphetamine. Methylphenidate is considered the first line for children and adolescents, while amphetamine is the first line for adults undergoing short-term treatment (SANTOS et al., 2021). These impact dopamine and norepinephrine, increasing the efficiency of the prefrontal cortex and improving patients’ executive and attentional function (MECHLER et al., 2021).

There are different formulations available, with short or long action and immediate or delayed release. The use of long-acting medications is associated with better therapeutic adherence, as they have less rebound effect, however short-acting medications allow greater flexibility in both dose and frequency. In addition to these, there are non-stimulant drugs, such as atomoxetine, clonidine and guanfacine that are used as second-line medication, due to their

lower effectiveness compared to stimulants (MECHLER et al., 2021).

Despite having made progress in the approval of new drugs by North American and European agencies, developing countries do not have the same access and can use antidepressants as a viable low-cost option (SANTOS et al., 2021). In Brazil, the main ones chosen for the treatment of ADHD are imipramine, nortriptyline, bupropion and fluoxetine, playing an important role in cases where the patient has coexisting depression or anxiety (RUIZ; SANTOS, 2023). Bupropion, for example, was tested in pediatric patients, demonstrating efficacy compared to methylphenidate, but a larger sample is needed to statistically prove non-inferiority (POZZI et al., 2020).

The combined use of different classes offered greater improvements in conduct and academic measures in relation to therapy when the patient had associated ADHD and anxiety or worse economic conditions (WOLRAICH et al., 2019). Due to this variability of responses in the treatment of the individual with ADHD, the use of pharmacogenetic tools has been sought to promote better treatment, however the evidence is not sufficient to justify clinical applicability (WOLRAICH et al., 2019).

Pharmacological treatment, although relevant and necessary, is just one step, especially in preschool children. Psychosocial and behavioral interventions, such as training parents in behavior management, are essential for treatment effectiveness. In this age group, the use of medications has been shown to be less effective and must be restricted to severe cases (MECHLER et al., 2021). The use of multimodal treatment has demonstrated positive effects on the development of parenting skills in dealing with comorbid ADHD behavior (DRECHSLER et al., 2020).

NON-PHARMACOLOGICAL THERAPIES ON THE RISE

Several studies indicate that, although medication treatment is the most effective approach to mitigating the core symptoms of ADHD, psychological and psychopedagogical therapy plays an important role in promoting treatment adherence and improving patients' perceived quality of life (LÓPEZ -LÓPEZ et al. 2019).

Among the non-pharmacological therapies adopted, the one that receives the most attention is Cognitive Behavioral Therapy (CBT), having presented good results and a greater amount of scientific evidence (LOIOLA, 2020). This approach aims to promote sustainable behavioral and emotional changes over time, through modifying the individual's beliefs and thinking patterns. This is achieved through the application of techniques that enable the patient to develop alternative strategies to manage and control the main symptoms of this disorder. Thus, the main relevant CBT techniques for treating children with ADHD include psychoeducation for the patient and their family members, training in problem solving, the development of social skills and training for parents and/or family members. (SOUZA; SILVA, 2021).

The observed result is the patient learning to seek solutions to problems and exercise control over their negative emotions and, consequently, adapt more easily to social life, thus improving their interpersonal relationships (RUIZ; SANTOS, 2023).

ROLE OF EDUCATION AND SCHOOL INTERVENTIONS

The power to transform education still goes against the persistence of a traditional teaching model, due to the lack of adequate resources for a large part of Brazilian schools and the need for training of teachers, who have difficulty distinguishing between inattention,

restlessness and impulsivity as characteristic factors of indiscipline or a neurobiological disorder (CALIXTO et al., 2021). However, the analysis of the educational role and possible school interventions is necessary in the construction of a favorable scenario for the integration and assistance of children with ADHD (SILVA, 2021).

To emphasize the value of the educational instrument for students with ADHD, some innovative strategies recommended by the authors Rizo and Rangé (2003) can be listed:

Arrange the chairs in a way that allows the teacher to move throughout the room and have access to all students. Keep students with potential for a high level of distractibility seated close to the teacher (without appearing punitive). Locate the student's chair away from the window and hallway, minimizing visual and auditory distractors. Place children who are models of attention sitting next to the ADHD child (avoiding comparisons between them). RIZO AND RANGÉ (2003, P. apud MAGALHÃES, 2013, p.33)

These proposals enable greater student concentration and guarantee a more inclusive class dynamic. Furthermore, it is necessary to elucidate the use of alternative activities that favor improving the concentration of children with such a diagnosis, such as games such as chess and checkers, facilitating not only the means of socialization, but also the teaching-learning process and allowing for enhanced academic performance (SILVA, 2021).

Another point worth highlighting is Brazilian legislation, which contemplates, in Law (nº 14,254/2021), the inclusion of students with ADHD in regular schools and establishes guidelines for appropriate support.

To guarantee such regulations, it is valid to ensure the identification and full monitoring of students with ADD, and can use an Individualized Education Plan (IEP), which will assess the student's specific educational

needs and implement adaptive measures that facilitate their learning. However, as this program requires the confluence of a collaborative triad (parents, teachers and support professionals), there is still an obstacle created by the great lack of adequate training of teaching professionals and the acceptance of the family nucleus (MAGALHÃES, 2013).

With this in mind, the consolidation of changes in such a scenario, regarding the academic environment, can be favored by collaboration between educators and health professionals in the management of ADHD in school contexts. An example of this reality is described by Benczik (2000):

The teacher plays a critical role in the school experience of the child with ADHD. It is important that the mental health professional can support the teacher in the classroom, informing him about the basic concepts of ADHD and aspects of attention disorders. It is useful for teachers to have at least a basic understanding of ADHD, its symptom manifestations, and the consequences in the classroom. Knowing how to differentiate inability from disobedience is fundamental. BENCZIK (2000, p.81 apud MAGALHÃES, 2013, p. 28)

This professional integration would contribute to changing the role of the educator towards students diagnosed with ADD, facilitating the distinction between typical characteristics of a disciplinary act and those of a neurobiological disorder. It is also worth mentioning that mutual assistance, between teachers and health specialists, would allow the adoption of different teaching-learning methods, such as playful activities using technological tools. Technology can be an ally for improving attention and cognitive development, as many websites (YouTube, Trello and Blogs) and games (Brainy Mouse, Brain Test and Brain n-Back) had significant performances in aspects related to literacy, memorization and socialization of children

with ADHD (GONÇALVES, 2021).

INTEGRATED MULTIDISCIPLINARY APPROACH

Regarding the multidisciplinary approach, the importance of using different research methods is noted, with the help of various areas of knowledge for the diagnosis and treatment of ADHD (GRAEFF et al., 2008). Studies show that effective treatment depends on an effective diagnosis, carried out based on a detailed analysis, based on the clinical report reported by the patient, parents and, often, educators, who are in direct contact with the individual, using various research instruments., such as psychological and neuropsychological tests, in addition to the participation of several professionals in this process, such as psychiatrists, pediatricians, neurologists and psychologists (LAVAGNINO et al.,2018).

Furthermore, the use of interdisciplinarity enables successful management, taking into consideration, various social aspects of the participants in this group, since, most of the time, during medical consultations, patients with the disorder do not present typical clinical symptoms of ADHD (Ferreira et al., 2019). In view of the studies carried out, the literature proved to be scarce regarding the implementation of strategies to improve communication and coordination between different members of the treatment team, enabling an approach in different areas, and regarding the evaluation of integrated care models that aim to improving the quality of life of children with ADHD and their families.

ETHICAL AND SOCIAL ASPECTS AND FAMILY PARTICIPATION

The way family dynamics occur and the presence of ADHD in children are substantially related, since its symptoms are notoriously associated with troubled and

problematic family relationships (PIRES et al., 2012). In families where one or more children have the disorder, interactions are much more characterized by stress, negativity and hostility, as well as the way of educating the child tends to be more extreme towards one side, be it more relaxed or more impetuous, violent. In this sense, the analysis of the condition of children who have ADHD cannot be restricted to the disorder, as it is essential to investigate the family social cycle and its implications for the development of children with ADHD (BENCZIK et al., 2015).

However, the social aspects related to the disorder are not limited to the family. Wrong stigma and common-sense cause, as in family relationships, distortions in school and social interactions as a whole, since the real characteristics of an individual differ from those expected of them by the group to which they belong. Many children have ADHD placed above its other aspects in their social relationships, in order to make it inferior due to the existence of the disease. This problem is linked to a view that a child is just an object of affection and responsibility of adults, that they must follow what has been pre-established by them as “normal”, and that, from the moment they are diagnosed with a disorder that makes it different, all its other characteristics become less important and relevant than the illness (BARBARINI, 2020).

In view of this problematic situation, it is noted that the lack of knowledge and clarification on the topic is one of the biggest obstacles to the good development of children with children, including with regard to parents and families. This becomes even more evident when considering that the treatments that are most effective are those that include combined approaches to medication, school, child and parents. The direct participation of parents can take place with therapeutic groups, with training and guidance groups

and with psychotherapy aimed at the child, along with other psychosocial and awareness interventions, in order to permeate all social areas that participate in children's daily life (BERTOLDO et al., 2018).

CONCLUSION

ADHD in childhood is a very complex condition, with different approaches to be used in order to improve the quality of life of diagnosed children and their families. Regarding pharmacological treatment, there is a need to carefully evaluate the drug with the best profile for a given patient and to expand access to available options to a wider audience around the globe. However, multimodal therapy must be recommended, with the use of validated non-pharmacological therapies, such as CBT, in order to improve the skills in interpersonal relationships and social interaction of patients with ADHD. Furthermore, treatment is required to involve different sectors, such as the school environment, aiming at continued care with the mediation of duly trained professionals, as well as encompassing a coordinated interdisciplinary approach and counting on the participation and understanding of the family, with a focus on due social inclusion in which the pharmacological and non-pharmacological devices available in the health system are used.

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