Verification of deficient learning skills in diagnostic hypotheses of ADHD: An experience report

https://doi.org/10.56238/sevened2024.003-022

Fabiana Fagundes Barasuol[1] and Michele Aparecida Cerqueira Rodrigues[2]

ABSTRACT

Learning skills are fundamental to the educational context, as they directly influence students' academic success and throughout their lives. Therefore, this article is an experience report on the verification of deficient learning skills in cases of students with predominantly inattentive Attention Deficit/Hyperactivity Disorder (ADHD). For data collection, non-restricted neuropsychopedagogical tests were applied to a random sample of 9 children, female (n=4) e male (n=5). The tests were carried out in a private clinic in the city of Ijuí, a Brazilian municipality located in Rio Grande do Sul. It was observed that the performances were deficient in auditory skills and executive functions, followed by emotional aspects. Previous studies by different authors corroborated the results of this research.

Keywords: Learning skills, ADHD, Listening skills, Executive function.

[1] Dr. student in Education at Logos University International,
E-mail: fabianafagundesbar@gmail.com
[2] Dr. student in Neurosciences at Logos University International (UNILOGOS),
Dr. in Education at Central Christian University and Postdoctoral Fellow in Psychology at the Universidad de Flores
Institution: Logos University International (UNILOGOS)
E-mail: michele@unilogosedu.com

INTRODUCTION

According to the American Psychiatric Association, about 2.5% of adults and 5% of children have ADHD. It usually begins to manifest in childhood, with symptoms of hyperactivity. During elementary school, inattention becomes more prominent (American Psychiatric Association, 2014).

By adolescence, motor hyperactivity decreases, but internal restlessness and impulsivity persist. In adults, symptoms vary, with impulsivity being a common challenge. Several factors, including genetic and environmental, influence the development of ADHD, and its severity can be modified by family interactions (American Psychiatric Association, 2014).

In learning, ADHD affects specific skills, including sustained attention, working memory, organization, impulse control, and social skills. In addition, difficulties in maintaining attention, following complex instructions, and dealing with impulsivity are common and can impair social relationships and school productivity.

In this sense, the present study is an experience report on the most deficient learning skills, in the hypothesis of predominantly inattentive Attention Deficit Hyperactivity Disorder, in a random sample of 9 children, submitted to non-restricted neuropsychopedagogical tests in a private clinic in the city of Ijuí - RS - Brazil.

The goal is to know the main learning skills affected in the cases of children with ADHD in school. In this way, we seek to alert families and teachers so that they can raise the previous hypothesis of the disorder, sending the child for evaluation and detection in order to initiate the necessary early interventions.

THEORETICAL BASES

ADHD is a neurobiological condition that affects a person's ability to maintain attention, control impulses, and regulate behavior (American Psychiatric Association, 2014). Due to these characteristics, academic performance is affected culminating in significant learning difficulties.

To understand them, the differences between Learning Disabilities (LD) and Specific Learning Disorders (ASD) will first be analyzed. Later, the characteristics of ADHD and which learning abilities are affected by the presence of the disorder will be verified.

DIFFICULTIES FROM APPRENTICESHIP (DA) AND SPECIFIC LEARNING DISORDERS (TEAP)

When it comes to learning disabilities, they can result from a variety of factors. According to Paín, they are defined by organic, specific, environmental, and psychogenic factors. Organic factors refer to learning difficulties caused by disorders or syndromes that are not directly linked to the learning process itself, such as Down syndrome and ADHD. In relation to the deficits caused in the

learning process, there is ASD. Finally, there are cases of environmental factors, derived from the environment, and psychogenic factors, of emotional alterations and/or traumas (Tonini, 2005; Paín, 1992).

Thus, learning disabilities cause temporary disturbances in the acquisition of academic, reading, math, and writing skills. In contrast, ASD is persistent, lasting more than six months and has biological roots, being recognized in international classifications of health, such as the International Classification of Diseases (ICD-11) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (Rodrigues, 2023).

In these documents, three categories of ASD are found: dyslexia, which presents deficits in reading with alterations in the accuracy of reading words, in the speed or fluency of reading, and in reading comprehension; disortography in which there are problems in written expression with changes in the accuracy of spelling, in the accuracy of grammar and punctuation, and in the clarity or organization of written expression; dyscalculia, which causes changes in mathematical skills with changes in number sense, memorization of arithmetic facts, accuracy or fluency in calculation, and accuracy in mathematical reasoning (American Psychiatric Association, 2014).

In ADHD, learning disabilities are marked by inattention, impulsivity, and hyperactivity, impacting concentration, organization, working memory, and academic skills, causing poor school performance and difficulties in performing academic tasks (Mayes; Calhoun, 2006).

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD)

ADHD is a neurodevelopmental disorder characterized by detrimental levels of disorganization, inattention, and/or hyperactivity-impulsivity. These symptoms persist into adulthood, affecting social, academic, and professional areas. In terms of concepts and approaches to dealing with children with these characteristics, there has been an evolution in interventions (Campelo et al., 2022; Francisco et al., 2021).

The predominantly inattentive profile of Attention Deficit Hyperactivity Disorder (ADHD), according to Amorim (2019), involves failures in controlling distractions, with difficulty maintaining attention, drowsiness in demanding tasks, and problems following instructions and completing activities, among other symptoms (Campelo et al., 2022; Francisco et al., 2021).

In the predominantly hyperactive-impulsive subtype, agitation, impulsivity, and restlessness stand out. Characterized by behaviors such as moving hands and feet, getting up in inappropriate situations, talking too much, interrupting others, and acting impulsively (Campelo et al., 2022; Francisco et al., 2021). The combined type, on the other hand, encompasses the symptoms of the previous types, resulting in a combination of the main symptoms of ADHD that vary with age (Campelo et al., 2022).

To determine each subtype, a number of determinations are required:

> [...] Combined presentation: Whether both Criterion A1 (inattention) and Criterion A2 (hyperactivity-impulsivity) are met within the past 6 months. [...] Predominantly inattentive presentation: If Criterion A1 (inattention) is met but Criterion A2 (hyperactivity-impulsivity) is not met in the past 6 months. [...] Predominantly hyperactive/impulsive presentation: If Criterion A2 (hyperactivity-impulsivity) is met, and Criterion A1 (inattention) is not met in the past 6 months (American Psychiatric Association, 2014, p. 60).

There are no specific biological markers, but it may involve subtle brain abnormalities. ADHD begins in childhood and can persist into adulthood, with an increased risk of suicide attempts, especially in combination with other disorders. It is important to assess symptoms in different settings and consider the coexistence of mild developmental delays and academic difficulties (American Psychiatric Association, 2014).

Teachers are the ones most responsible for referrals for clinical evaluation. However, clinical analyses often culminate in medication with the use of methylphenidate, for example. This statement is evidenced by the increase in sales of these drugs in Brazil. It is noteworthy that the approaches mentioned tend to neglect the importance of pedagogical approaches in the treatment of ADHD (Szymanski; Teixeira, 2022).

In this sense, Calisto, Soares and Vasconcelos (2021) argue that the concern with the diagnosis and use of methylphenidate as a solution for ADHD raises questions about the loss of the student's individuality and the lack of improvement in learning. It is crucial to adopt a critical approach that promotes inclusive educational practices while respecting the wishes of the subject. In this way, an ethical commitment to the right to quality learning and the formation of citizenship is reflected, combating medicalizing practices that exclude.

LEARNING SKILLS AFFECTED IN ADHD

Starting with inattention, one of the core symptoms of ADHD, it has a significant impact on learning abilities. Children with ADHD often have difficulty staying focused, following directions, and completing schoolwork. According to Rohde et al. (2000), inattention is manifested by difficulties in focusing, following instructions, completing tasks, organizing activities, avoiding constant mental effort, losing important objects, and being easily distracted.

In addition, hyperactivity and impulsivity can interfere with learning. A study by Stroh (2010) highlighted that impulsivity is reflected in a hasty response, difficulty in waiting for a turn, and in the interruption of other people's conversations or jokes. There is, then, a negative interference in the social interactions of the child with ADHD, leading him to aggressive behaviors in search of immediate gratification.

However, it is important to highlight that ADHD does not affect all learning abilities in a

uniform way. Some areas, such as creative problem-solving and divergent thinking, may not be impacted as much. According to Teixeira (2018), some children with ADHD demonstrate exceptional abilities in areas such as creativity, due to their unique way of thinking and seeing the world.

Finally, it's critical to remember that ADHD's impact on learning abilities can be managed and minimized with proper treatment. The multidisciplinary approach, which includes behavioral therapy, medical follow-up, and, in some cases, medications, has been shown to be effective in managing ADHD symptoms and improving learning abilities (Rohde et al., 2010).

METHODOLOGY

The methodology is based on an experience report on the evaluation of 9 children, 4 females and 5 males, which took place in a neuropsychopedagogical clinic in the municipality of Ijuí, state of Rio Grande do Sul. The children were aged between 8 and 12 years old and attended between the 4th and 6th grades of elementary school, in municipal and state public schools in the city.

Carried out from March to July 2023, during the research, the children were submitted to anamnesis, a screening test for learning skills, and non-restricted neuropsychopedagogical tests of ADHD. The participants were referred to the clinic by their respective schools because they had learning difficulties due to inattention. Thus, the diagnostic hypothesis of ADHD of the inattentive type was suggested, in ICD11 represented by code 6A05.0 (ICD11, 2023).

First, anamnesis were performed with each child and their respective family members at the clinic. One of the main complaints was problems with learning, concentration, hyperactivity and poor literacy, in addition to the influences of the Covid-19 pandemic.

After the initial stage, the patients underwent the Basic Learning Skills Screening Test using the Pro-AMIC (Clinical Integrated Multidisciplinary Follow-up Program) software, version 2023. It consists of a series of tests involving auditory, visual, logical, mathematical, oral, emotional and neuropsychomotor skills, as well as executive functions.

Concomitantly, the Attention-Deficit/Hyperactivity Disorder Scale in a school context (ETDAH-II) was sent to each school (Benczik, 2021), in order to be completed by teachers. It aims to identify the manifestation of ADHD symptoms in the school context, with the teacher as a source of information.

It consists of 46 items organized into four factors: 1) attention; 2) hyperactivity/impulsivity; 3) learning; 4) social behavior. The arrangement consists of indications, positive and negative, of ADHD using a six-point Likert scale. The results are obtained quantitatively, under an analysis of the subject's performance, based on percentile norms, elaborated from statistical studies that emphasized the variable gender (male or female) and type of school (private or public) to differentiate the sample

group, according to each factor (Benczik, 2021).

The parents or guardians answered the ETDAH Scale – Parents (Scale for the evaluation of child and adolescent behaviors in Child and Adolescent Deficit Disorder).

Attention/Hyperactivity in a family environment. The scale aims to assess behaviors in the family environment to verify possible impairments in attention, hyperactivity and impulsivity, emotional and behavioral difficulties, as well as the intensity of existing impairment (moderate and severe). It consists of 58 items organized into four factors: 1) emotional regulation, 2) hyperactivity/impulsivity, 3) adaptive behavior, and 4) (Benczik, 2022).

In addition, in the clinical setting, the ETDAH – CriAD scale (Attention Deficit/Hyperactivity Disorder Self-Assessment Scale) was applied. It aims to bring the child's or adolescent's own understanding of attention difficulties, hyperactivity/impulsivity. It consists of 22 items organized into two factors, which reflect two subdomains that are common among children and adolescents with ADHD: 1) hyperactivity/impulsivity and 2) attention deficit (Benczik, 2018).

After receiving all the scales, the respective correction protocols and data analysis were completed for each child. It is noteworthy that in this sample, all children presented the diagnostic hypothesis of Attention Deficit/Hyperactivity Disorder, predominantly inattentive, according to DSM-V criteria and ICD11 code, 6A05.0.

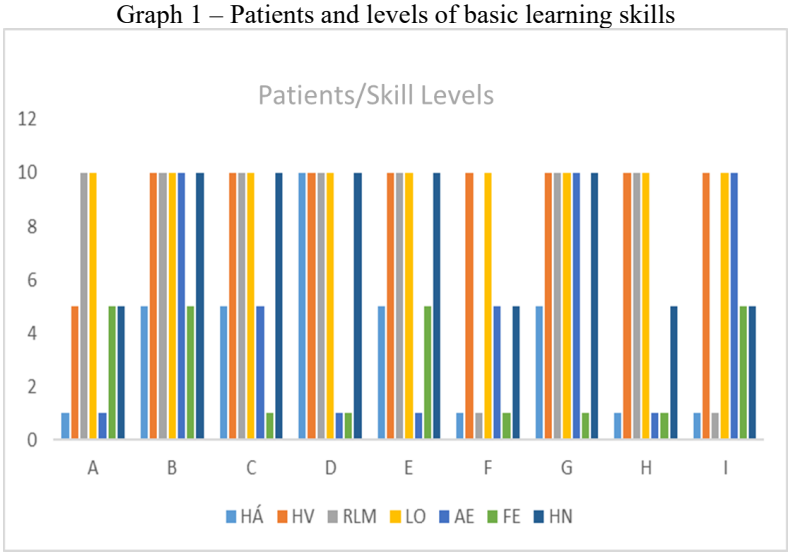
With the results, feedback was given to the respective parents, in which there were referrals, when necessary, to speech therapists, neuropsychologists, pediatric neurologists and neuropsychopedagogical and neuropsychomotricity interventions.

RESULTS

For analysis purposes, the results of the Basic Learning Skills Screening Test of each of the 9 patients, represented by the letters A to I.

For learning skills, the following terms were used: auditory skills (ISso); visual skills (HV); logical-mathematical reasoning (RLM); oral language (LO); emotional aspects (EA); Functions Executive (FE); Skills neuropsychomotor (HN). Both are broken down on a scale of 0 to 10.

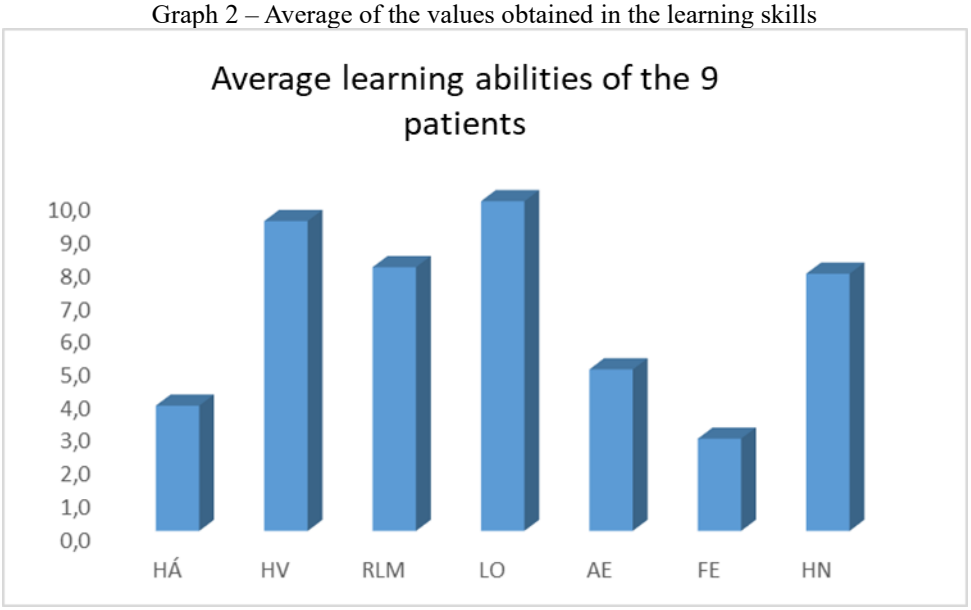
Graph 1 – Patients and levels of basic learning skills



Source: Analytics data, 2023.

The averages of each learning ability of the 9 patients are shown as shown in the following graph:

Graph 2 – Average of the values obtained in the learning skills



Source: Analytics data, 2023.

Thus, it was observed that the lowest averages are related to auditory skills and executive functions. Therefore, such skills were the who scored the least, i.e., those who presented the greatest learning deficit in the patients, followed by the emotional aspect.

Executive functions are responsible for actions, thoughts, and emotions. They encompass self-control, working memory, and cognitive flexibility, influencing planning, focus, and multitasking. In this sense, when deficient, they interfere with the child's academic performance and quality of life (Souza et al., 2021).

Corroborating the results obtained, Prando et al. (2013) point out that children with predominantly inattentive ADHD commonly share symptoms of delayed attention and auditory memory, highlighting the complexity of the relationship.

FINAL THOUGHTS

This experience report aimed to verify which learning skills are most affected in children with Attention Deficit/Hyperactivity Disorder (ADHD), predominantly inattentive. The results revealed that the children in the sample have a significant deficit in auditory skills, executive functions and emotional aspects. And, these results are consistent with previous studies that highlight the relationship between inattentive ADHD and difficulties in attention and auditory memory.

It is important to understand that the learning skills affected are essential to identify ADHD early and implement appropriate interventions. Thus, the role of teachers in identifying and referring for clinical evaluation is crucial.

Equally important is to avoid a purely pharmacological approach, such as the prescription of methylphenidate and, in addition, to focus on inclusive educational practices, which respect the individuality of the student in order to guarantee the right to quality learning.

Regarding executive functions, they directly interfere with learning abilities and behavior control. Therefore, it is essential to address the deficit of these skills in interventions for children with ADHD, as they directly impact academic performance and quality of life.

Thus, a multidisciplinary approach involving behavioral therapy, medical follow-up, and medication has been shown to be effective in managing ADHD symptoms and improving learning abilities.

REFERENCES

1. American Psychiatric Association. (2014). Manual diagnóstico e estatístico de transtornos mentais: DSM-5. Porto Alegre: Artmed.

2. Benczik, E. B. P. (2022). Escala de avaliação de comportamentos infantojuvenis no Transtorno de Déficit de Atenção/Hiperatividade em ambiente familiar: ETDAH – Pais. Versão para pais. São Paulo: Mennon.

3. Benczik, E. B. P. (2021). Escala do Transtorno de Déficit de Atenção/Hiperatividade em contexto escolar: ETDAH – II. Versão para professores (3ª ed.). São Paulo: Pearson.

4. Benczik, E. B. P. (2018). Escala de autoavaliação do Transtorno de Déficit de Atenção/Hiperatividade: ETDAH – CriAd. Versão para crianças e adolescentes. São Paulo: Memnon.

5. Calixto, F. G. C., Soares, S. L., & Vasconcelos, F. U. P. e. (2021). A aprendizagem e o Transtorno do Déficit de Atenção e Hiperatividade: uma análise da produção brasileira. Revista Contexto & Educação, 36(113), 74-84. https://doi.org/10.21527/2179-1309.2021.113.74-84

6. Campelo, T. R. F. et al. (2022). Notas sobre a história oficial do Transtorno do Déficit de Atenção/Hiperatividade TDAH. Revista de Psicologia, 16(60), 862-871. https://doi.org/10.14295/idonline.v16i60.3464

7. CID11. (2023). ICD-11 for Mortality and Morbidity Statistics. Organização Mundial de Saúde. Recuperado de https://icd.who.int/browse11/l-m/en

8. Francisco, M. A. et al. (2021). Transtorno do déficit de atenção e hiperatividade (TDAH) no adulto: prevalência e impactos. Brazilian Journal of Health Review, 4(6), 24035-24044. https://doi.org/10.34119/bjhrv4n6-033

9. Mayes, S. D., & Calhoun, S. L. (2006). WISC-IV and WISC-III profiles in children with ADHD. Journal of Attention Disorders, 9(3), 486-493. https://doi.org/10.1177/1087054705283616

10. Paín, S. (1992). Diagnóstico e tratamento dos problemas de aprendizagem. Porto Alegre: Artes Médicas.

11. Prando, M. L. et al. (2013). Avaliação da linguagem e do processamento auditivo na caracterização neuropsicológica do TDAH: revisão sistemática. Psicologia em pesquisa, 7(1), 23-36. http://dx.doi.org/10.5327/Z1982-1247201300010004

12. Rodrigues, M. A. C. (2023). Disgrafia e disortografia: conceituação e diferenças. Revista Científica Cognitionis, 6(1), 34-44. https://doi.org/10.38087/2595.8801.174

13. Rohde, L. A. et al. (2000). Transtorno de déficit de atenção/hiperatividade. Brazilian Journal of Psychiatry, 22(supp. 2), 07-11. https://doi.org/10.1590/S1516-44462000000600003

14. Souza, I. L. S. et al. (2021). Relações entre funções executivas e TDAH em crianças e adolescentes: uma revisão sistemática. Revista Psicopedagogia, 38(116), 197-213. http://dx.doi.org/10.51207/2179-4057.20210023

15. Stroh, J. B. (2010). TDA – diagnóstico psicopedagógico e suas intervenções através da Psicopedagogia e da Arteterapia. Construção Psicopedagógica, 18(17), 83-105. Recuperado de

http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1415-69542010000200007&lng=pt&nrissoso

16. Szymanski, M. L. S., & Teixeira, A. (2022). Quando a queixa é Transtorno de Déficit de Atenção e Hiperatividade. Linhas Críticas, 28, e40200. https://doi.org/10.26512/lc28202240200

17. Teixeira, R. (2018, outubro 15). Adolescentes com déficit de atenção são mais criativos. Correio Braziliense. Recuperado de https://www.correiobraziliense.com.br/app/noticia/revista/2018-10-15/interna_revista_correio,712769/adolescentes-com-deficit-de-atencao-sao-mais-criativos.shtml

18. Tonini, A. (2005). Dificuldades de aprendizagem: 4º semestre. Santa Maria, Universidade Federal de Santa Maria. Recuperado de https://repositorio.ufsm.br/bitstream/handle/1/17627/Curso_Ed-Especial_Dificuldades-Aprendizagem.pdf