

RESUMEN

El presente trabajo pretende profundizar en la comorbilidad entre el Trastorno por Déficit de Atención y/o Hiperactividad (TDAH) y el Trastorno Específico del Aprendizaje (DEA), los dos trastornos del neurodesarrollo con más prevalencia en la población escolar.

El TDAH está caracterizado por una presencia persistente de inatención, hiperactividad e impulsividad y puede ser de tres tipos (falta de atención, hiperactividad/impulsividad y combinado). El DEA se caracteriza por un bajo rendimiento en la lectura, escritura y/o matemáticas que es inesperado ya que el CI del niño y la escolarización son adecuados. Se tiene que especificar si la dificultad está en la lectura, escritura o matemáticas.

Se ha observado que los niños con TDAH pueden tener las funciones ejecutivas alteradas, mientras que los niños con DEA no muestran déficit en las funciones cognitivas pero sí en procesos relacionados con la lectura, escritura y matemáticas.

En el trabajo se han utilizado puntuaciones de diferentes instrumentos relacionados con los procesos cognitivos y de aprendizaje escolar y se han comparado entre dos grupos de 3 niños cada uno, uno de TDAH y otro de DEA.

El objetivo de este trabajo es comparar las medias entre grupos y observar si los procesos psicológicos afectados son diferentes. Se espera encontrar que los niños con TDAH tendrán afectadas las funciones ejecutivas pero no los procesos relacionados con la lectura, escritura y matemáticas, y lo inverso en el grupo DEA.

En los resultados no se han encontrado diferencias significativas en ninguna variable excepto en el control de impulsos, que está más afectado en TDAH. Además, se observa que la atención se encuentra en la media en los dos grupos. Aunque se ha encontrado una ligera tendencia a la significación en los procesos relacionados con la lectura, escritura y matemáticas, estando más afectados en el grupo DEA.

ABSTRACT

The present work pretends to deepen in the comorbidity between Attention Deficit and/or Hyperactivity Disorder (ADHD) and Specific Learning Disorder (SLD), the two neurodevelopmental disorders with more prevalence in the school population.

ADHD is characterized by a persistent presence of inattention, hyperactivity and impulsivity and can be of three types (inattention, hyperactivity/impulsivity and combined). SLD is characterized by low performance in reading, writing and/or mathematics that is unexpected since the child's IQ and schooling are adequate. It must be specified whether the difficulty is in reading, writing, or mathematics.

It has been observed that children with ADHD may have altered executive functions, while children with SLD do not show deficits in cognitive functions but in processes related to reading, writing and mathematics.

In the work, scores from different instruments related to cognitive and school learning processes have been used and compared between two groups of 3 children each, one with ADHD and one with SLD.

The objective of this work is to compare the means between groups and to observe if the psychological processes affected are different. It is expected to find that children with ADHD will have affected the executive functions but not the processes related to reading, writing and mathematics, and the opposite in the SLD group.

In the results no significant differences have been found in any variable except in impulse control, which is more affected in ADHD. Moreover, it is observed that attention is in the average in both groups. Although a slight tendency to significance has been found in the processes related to reading, writing and mathematics, being more affected in the SLD group.

ATTENTION DEFICIT HYPERACTIVITY DISORDER AND SPECIFIC LEARNING DISABILITY: DIFFERENCES BETWEEN AFFECTED PSYCHOLOGICAL PROCESSES

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INTRODUCTION

- **Learning Disorders (LD)** are neurodevelopmental disorders that result from biological and environmental interactions (Rosario Díaz, 2016 & Sans, Boix, Colomé, López-Sala, & Sanguinetti, 2017).
- They can affect writing, reading, math, and attention. The prevalence is 10% of the school population (Omarji Alvarado, 2018 & Sans, Boix, Colomé, López-Sala, & Sanguinetti, 2017).
- **Attention deficit hyperactivity disorder (ADHD)** has altered executive functions, including attention, planning, organization and impulse control. (Rodríguez Hernández, González González, & Gutiérrez Sola, 2015). There are three type of ADHD: inattentive, hyperactive-impulsive and combined (Puddu, Rothhammer, Carrasco, Aboitiz y Rothhammer, 2017).
- **In Specific Learning Disorders (SLD)** cognitive functions are within normal range, except for specific reading, writing and numerical and calculation processing (Sans, Boix, Colomé, López-Sala, & Sanguinetti, 2017).

Comorbidity ADHD with SLD (Aguilera Albesa, Mosquera Gorostidi, y Blanco Beregaña, 2014)

Dysgraphia ☐ 60%	Dyslexia ☐ 33%	Dyscalculia ☐ 26-42%
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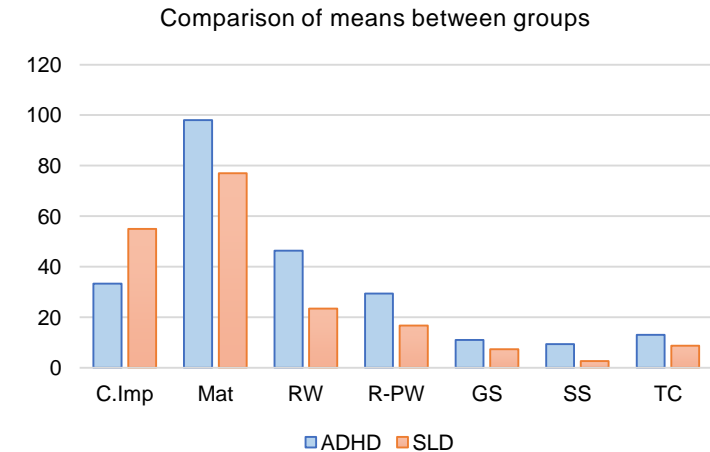
- Due to the high comorbidity between neurodevelopmental disorders, a good differential diagnosis is necessary to work on the affected processes. For this reason it has been decided to realize this work.
- **Objectives:** main objective: to compare the ADHD group and the SLD group and analyze if they have the same or different psychological processes affected.
Secondary objective: to find the differences between the disorders in order to make the diagnosis.
- **Hypothesis:**
 - 1) The executive functions or psychological processes affected in both disorders studied are different: children with ADHD are less attentive and more impulsive than children with SLD.
 - 2) Children with SLD have the reading, writing and math aspects more affected than children with ADHD.

METHOD

Participants	Instruments	Procedure	Statistical analysis
3 ADHD combined 3 SLD Average: 7 years	WISC- V CARAS-R PROLEC-R TALE TEMA-3	Formation of sample groups Literature search Review of test results Comparison of results between groups	Non-parametric test U of Mann-Whitney

RESULTS

- No significant differences were found between groups in the U of Mann-Whitney (IQ, working memory, attention, errors in copying and dictation, equal-different, letter names, sentence comprehension and oral comprehension).
- (*) Significant differences in the impulse control variable (C.Imp) <0.05.
- (t) A trend is observed in the word reading (RW) variable <0.1.
- (tt) A trend is observed in the variables related to math, reading and writing processes: math (Mat), pseudo-word reading (R-PW), grammar structures (GS), score signs (SS) and text comprehension (TC) <0.14.



U of Mann-Whitney	C.Imp.	Mat.	RW	P-WR	GS	SS	TC
Sig. (bilateral)	.046*	.13 ^{tt}	.05 ^t	.13 ^{tt}	.13 ^{tt}	.13 ^{tt}	.12 ^{tt}

DISCUSSION

- **The main objective** is partially fulfilled, because differences between groups are found in the impulse control variable but not in the other aspects, although a slight trend of significance is observed in the aspects related to reading, writing and math (Hypothesis 1 and 2).
- Regarding **the secondary objective**, the only difference found between the two groups is impulsivity. This aspect and the slight tendency to have the processes related to reading, writing and mathematics more affected may have been the difference in making the diagnosis between these two neurodevelopmental disorders.
- As discussed in the introduction, children with ADHD may have impaired executive functions. In this case, the only executive function that is more affected than the SLD group has been the impulse control variable.
- In contrast, in the SLD group no executive function is affected, but there is a tendency to affect the processes of reading, writing and mathematics, as explained in the introduction.
- **Limitations:** reduced sample, a child with ADHD behaves like SLD, while another child diagnosed with SLD behaves like ADHD. Unclear results. In addition, the information found has been reduced.

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