Attention deficit hyperactivity disorder and dyslexia: a history of overlap

Transtorno do déficit de atenção e hiperatividade e dislexia: a história de uma superposição

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Conflict of interest
There is no conflict of interest to declare.

Received 19 December 2011
Accepted 26 December 2011

Attention deficit hyperactivity disorder (ADHD) is a frequent disorder like dyslexia. The ADHD worldwide-pooled prevalence is 5.29%[1] and for dyslexia the prevalence ranges from 6 to 9%[2]. Co-morbidity among those two disorders is found in more than a third of ADHD[3]. Furthermore, dyslexia is much more frequent in children with ADHD, up to six times more, as it is among children without ADHD[4].

Overlap here may be more than just the simple case of two common problems occurring by chance in the same person. Both developmental disorders arise from multiple cognitive deficits. Common underlying features may be contributing to the high co-morbidity between these disorders. There are propositions that dyslexia might be related to underlying deficits in attention shifting[5].

The study published in the current issue of *Arquivos de Neuro-Psiquiatria* by Miranda et al.[6] contributes to this field. With the aim of investigating the performance parameters of children with dyslexia (32), children with ADHD (52) and control children (475), using the Conners' Continuous Performance Test, they found some overlapping as both show failure in inhibitory control.

Children with ADHD displayed specific deficits compared with the Control Group: a failure in attention (omission error), a failure in inhibitory control (commission error), inconsistency in the response rate (standard error of the reaction time), intra-participant variability, higher level of impulsiveness (perseverations), and poor vigilance (change in the inter-stimulus interval).

Those with dyslexia had more errors due to failures in the inhibitory control (commission errors), more variable and anticipatory responses (perseverations), and less response consistency as the test progressed compared to the Control Group.

Comparing both developmental disorders, children with ADHD displayed higher attention deficits (higher omission errors), highly variable reaction times, frequent inattention, higher rate of anticipatory responses (perseverations), and less consistent reaction times with longer stimulus intervals.

In summary, Miranda et al.[6] advance in understanding the differences and similarities of both disorders in children, as put forward by Dhar et al. in adults with dyslexia as compared to those with ADHD[7].

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