Intervention on mathematics in students with ADHD

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School performance is often impaired in students with significant attention deficits. Studies indicate that many students with Attention Deficit Hyperactive Disorder (ADHD) have comorbid learning disorders, with rates ranging from 5 to 30% for the presence of ADHD and comorbid mathematics learning disability. Impaired performance among students with ADHD may be related to the core symptoms of the disorder, especially inattention and cognitive impairments in areas that are important for learning, such as the working memory (WM).

This study compared the effects of a combined intervention of working memory (WM) and arithmetic reasoning (AR) vs an intervention on WM alone, on the mathematics performance of students with ADHD. The disorder was clinically diagnosed by a multidisciplinary team of a university hospital linked to the University of the first two authors, according to DSM-IV criteria. Third- and fourth-grade elementary school students (n=46) completed measures for WM, AR, and mathematical calculations. Participants were randomized using a minimization approach taking age and IQ as variables of interest and assigned to one of two groups: G1 (n=24), combined WM/AR intervention; and G2 (n=22), WM intervention alone. The results indicated a significant group × time interaction (Wald χ^2=6.414; gl=2; p=0.04) in AR performance. G1 students showed significantly better performance in AR than G2 students immediately after intervention (pB=0.042). There was a time effect on mathematical calculations in the post-test (Wald χ^2=48.305; gl=2; p<0.001). A combined intervention of WM and AR seems to be more efficient in improving mathematics performance in ADHD students than a WM intervention alone.