

Exercise-Based Interventions for Primary School Children with Reading Difficulties: A Systematic Review

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Abstract

Reading difficulties are a common specific learning difficulty. They manifest when a child with normal or near-normal intellectual ability lags their peers in terms of word-reading accuracy, reading speed and fluency, and comprehension. This condition affects the child's academic, cognitive, and emotional development during their primary school years. Children with reading difficulties may require support in reading-related skills, executive functions, motivation, learning engagement, and social-emotional adjustment. Therefore, interventions should extend beyond text-based teaching by addressing the child's cognitive, motor, and emotional characteristics holistically. Recent studies have explored whether exercise-based interventions improve reading-related skills by supporting motor control, attention, and executive functions. This systematic review aims to evaluate empirical studies examining the effect of exercise-based interventions on the reading skills and reading-related cognitive and academic outcomes of primary school-aged children with reading difficulties. Five studies examining the effect of exercise, physical activity, balance, coordination, or motor control-based interventions on reading difficulties and reading-related academic and cognitive outcomes in primary school-aged children were analysed in this systematic review. The types of exercise, the duration of the interventions, the characteristics of the samples, the measured reading outcomes and the reported effects were analysed comparatively. The findings suggest that programmes focusing specifically on balance, coordination, and motor control may support reading skills and attention. However, it was determined that the evidence is limited and the samples are heterogeneous. The results indicate a need for long-term research with stronger designs. In this respect, the study also aims to highlight a gap in literature.

Keywords: Academic Outcomes; Attention; Balance; Coordination; Motor Control