Shared and differentiated motor skill impairments in children with dyslexia and/or attention deficit disorder: From simple to complex sequential coordination

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Abstract

Dyslexia and Attention deficit disorder (AD) are prevalent neurodevelopmental conditions in children and adolescents. They have high comorbidity rates and have both been associated with motor difficulties. Little is known, however, about what is shared or differentiated in dyslexia and AD in terms of motor abilities. Even when motor skill problems are identified, few studies have used the same measurement tools, resulting in inconstant findings. The present study assessed increasingly complex gross motor skills in children and adolescents with dyslexia, AD, and with both Dyslexia and AD. Our results suggest normal performance on simple motor-speed tests, whereas all three groups share a common impairment on unimanual and bimanual sequential motor tasks. Children in these groups generally improve with practice to the same level as normal subjects, though they make more errors. In addition, children with AD are the most impaired on complex bimanual out-of-phase movements and with manual dexterity. These latter findings are examined in light of the Multiple Deficit Model.