

Evaluation of Motor Intervention Programs for Developmental Coordination Disorder (DCD) in School-Aged Children: A Critical Narrative Review

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Abstract

Background: Developmental Coordination Disorder (DCD) is a common childhood motor disorder characterized by difficulties in acquiring and performing coordinated motor skills. Over half of the children with DCD continue to struggle with the disorder into adulthood. DCD manifests in various clinical presentations, affecting a wide range of life domains, including academics, leisure activities, social integration, and emotional well-being. Given the high prevalence and persistent nature of DCD, there is a critical need for tailored interventions to improve children's function and participation.

Objective: This review aims to present a variety of intervention programs, evaluate their effectiveness, and provide clinicians with tools to select effective, evidence-based motor intervention programs for specific clinical presentations of DCD.

Methods: A PubMed search was conducted for articles published between 2019 and 2023 that evaluate motor

intervention programs to improve performance in children with DCD. The International Classification of Health and Function (ICF) model was used to integrate and compare the results of different studies, providing a framework for describing and evaluating the impact of interventions on body functions, activities, and participation.

Results: A variety of therapeutic approaches, including activity-oriented approaches intervention, CO-OP, and active virtual reality, demonstrated significant improvements in the motor skills of children with DCD. However, the areas impacted and the effectiveness of interventions varied. Individualized intervention programs, considering the unique clinical presentation of each child, are essential for achieving optimal outcomes.

Conclusions: Intervention programs with process-oriented and performance-oriented approaches have been found effective for children with DCD, with process-oriented approaches serving as complementary to other interventions. Personalizing intervention programs while considering each child's unique clinical profile is essential for achieving optimal outcomes. Effective treatment requires a multidisciplinary approach, and using the ICF framework facilitates coordination among professionals. Further research is needed to evaluate intervention effectiveness across all functional levels, providing specific clinical recommendations.

Keywords: Developmental Coordination Disorder, motor intervention programs, process-oriented, activity- and participation-oriented balance, motor imagery, motor learning, group training, virtual reality, ICF model