Category:
☐ Sport Psychology; ■ Exercise Psychology ☐ Performance Psychology;
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Title

The Effects of Exercise on Hot Executive Function in Children With Neurodevelopmental Disorder: A Scoping Review

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Abstract

Introdution: Neurodevelopmental disorders (NDDs) are a heterogeneous group of developmental disabilities that emerge during the childhood development stage and exert long-term effects on neurological function. This category encompasses conditions such as intellectual disabilities, Autism Spectrum Disorder (ASD), and Attention-Deficit/Hyperactivity Disorder (ADHD). NDDs are frequently accompanied by difficulties in hot executive function (EF). Hot executive function (EF) refers to the high-level control processes mobilized by individuals in contexts involving emotion, motivation, or rewards. It includes abilities such as affective inhibitory control, value judgment, delayed gratification, and emotion regulation, which subsequently affects their behavioral regulation and social adaptation. Recent studies indicated that exercise interventions enhance hot EF performance in emotional and motivational contexts by increasing physiological arousal, emotional engagement, and prefrontal cortex activation. However, existing studies vary in research design, exercise types, and measurement indicators. **Purpose:** This study employs a scoping review to synthesize existing research on the effects of exercise interventions on hot EF in children with NDDs. **Methods:** A systematic search was conducted using the Scopus and PubMed databases. **Results:** An initial search yielded 311 articles; after removing duplicates, 277 remained. Following a title and abstract screening, 22 articles were retained. Ultimately, based on full-text screening, 5 articles were selected for final analysis. **Discussion:** The results suggest that various forms of exercise may have positive effects on affective inhibitory control and behavioral regulation. Nonetheless, methodological differences and sample limitations persist across studies. **Conclusions:** Although exercise intervention may improve hot EF in children with NDDS, future research should further explore the optimal exercise prescriptions for effectively enhancing hot EF in this population.

Keywords: Neurodevelopmental Disorders , physical activity , Hot Executive Function
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