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Abstract

Autism Spectrum Disorders (ASD) is a neurodevelopmental disorder characterized by social and communication impairments as well as a wide range of behavior deficits. For years, motor disturbance reported in ASD has not been treated as a major core deficit because of the overwhelming problems in sociability and communication. Recent studies, however, reveal that motor deficits are associated with the core symptoms of ASD. Because limited studies have addressed motor behavior of children with ASD, especially in China, the purpose of this study is to explore the development of fundamental movement skills in children with ASD and compare it to that of typically developing (TD) children. A total of 108 children with ASD aged 5-14 years and 108 age- and gender-matched TD children were evaluated. FMS were assessed with the Movement Assessment Battery for Children 2nd edition (MABC-2) including manual dexterity, aiming and catching, static and dynamic balance, and overall motor skills. The results included: (1) The development of FMS of children with ASD was significantly behind that of the children with TD at the same age. About 80% of children with ASD experienced motor difficulty or were at risk for motor delay. (2) Children with ASD showed significantly lower standard scores than typically developing children at the same age on manual dexterity, ball skills, and static and dynamic balance and overall MABC-2 scores (all $p < 0.001$), and there was no significant gender difference (all $p > 0.05$). Besides the core areas of developmental deficits described in the diagnostic manual for ASD, clinicians should assess motor deficits when diagnosing and treating children with ASD. Evidence-based interventions on FMS should be introduced when motor deficits are present.

A Comparison of Fundamental Movement Skills in Children with Autism Spectrum Disorder and Typically Developing Children

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Autism Spectrum Disorders (ASD) is neurodevelopmental disorder characterized by social and communication impairments as well as a wide range of behavior deficits. For years, motor disturbance reported in ASD has not been treated as a major core deficit because of the overwhelming problems in sociability and communication. Recent studies, however, reveal that motor deficits are associated with the core symptoms of ASD. Because limited studies have addressed motor behavior of children with ASD, especially in China, the purpose of this study is to explore the development of fundamental movement skills in children with ASD and compare it to that of typically developing (TD) children. A total of 108 children with ASD aged 5-14 years and 108 age- and gender-matched TD children were evaluated. FMS were assessed with the Movement Assessment Battery for Children 2nd edition (MABC-2) including manual dexterity, aiming and catching, static and dynamic balance, and overall motor skills. The results included: (1) The development of FMS of children with ASD was significantly behind that of the children with TD at the same age. About 80% of children with ASD experienced motor difficulty or were at risk for motor delay. (2) Children with ASD showed significantly lower standard scores than typically developing children at the same age on manual dexterity, ball skills, and static and dynamic balance and overall MABC-2 scores (all $p < 0.001$), and there was no significant gender difference (all $p > 0.05$). Besides the core areas of developmental deficits described in the diagnostic manual for ASD, clinicians should assess motor deficits when diagnosing and treating children with ASD. Evidence-based interventions on FMS should be introduced when motor deficits are present.

Keywords: fundamental movement skills, motor development, autism spectrum disorder, children