Abstract

Effects of Novel, Whole-body Movement–Based Interventions on Locomotor Skills in Children With Autism Spectrum Disorder: Randomized Controlled Trial Comparing Face-to-face and Telehealth Modes of Intervention Delivery

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Abstract

Background: Autism spectrum disorder (ASD) is a neurodevelopmental disorder limiting a child's motor performance to a level half their chronological age. Due to COVID-19, there has been growing research on the use of telehealth-based interventions in the care of children with ASD.

Objective: Based on previous research from our lab, this study assessed the effects of 2 novel, whole-body movement interventions (creative movement and general movement) compared to a standard-of-care, seated play intervention using a randomized controlled trial design. Interventions were delivered either face-to-face (F2F) or via telehealth (TH) across all groups.

Methods: In total, 45 children with ASD (aged 5-14 years) participated in a 10-week study. Children were matched on age and level of functioning and then randomly assigned to the Play (creative movement), Move (general movement), or Standard-of-care control (seated play) group (n=15 per group) to receive 8 weeks of intervention F2F or via TH. The interventions were provided twice a week for 8 weeks, with each session lasting for around 1 to 1.5 hours. The locomotor subtest of the Test of Gross Motor Development was administered at pretest and posttest to assess the form and accuracy of locomotor skills (running, galloping, hopping, leaping, horizontal jump, sliding, and skipping).

Results: Improvements were seen in overall standard scores in the Play (pretest: mean 6.53, SE 0.97; posttest: mean 8.60, SE 0.97; $P<.05$) and Move groups (pretest: mean 6.07, SE 0.96; posttest: mean 8.07, SE 0.92; $P<.05$) but not in the Create group (pretest: mean 6.13, SE 0.88; posttest: mean 6.80, SE 0.87; $P.05$). Specifically, 75% of children seen via TH and 57.1% of children seen F2F improved in the Play group, and 89% of children seen via TH and 50% of children seen F2F improved in the Move group.

Conclusions: Our pilot data suggest that TH is a viable option for movement intervention delivery and can be used to promote locomotor skills in children with ASD. Broadly, movement-based interventions must be included in the plan of care for children with ASD, given their significant challenges with movement performance.

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KEYWORDS

autism spectrum disorder; children; locomotor skills

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