



Investigation of effects of spark and school-based training on motor skills in children with high functioning Autism

Poster Presentation

1Reza Motejaded*; 2Elahe Arab ameri; 3Masoume Shojaei

1Department of physical education, Faculty of physical education, University of Mashhad Azad University, Mashhad, Iran(motejadedreza@gmail.com)

2Department of physical education, Faculty of physical education, University of Tehran, Tehran, Iran

3Department of physical education, Faculty of physical education, University of Al Zahra, Tehran, Iran

Abstract

Introduction: Autism Spectrum Disorder (ASD) is a developmental disorder that defines by lack of social connection, repetitive behavior, and difficulties in speech. However, recent studies revealed that people with ASD have difficulties in their fine and gross motor skills and need related interventions.

Methods: Thirty-three children with high functioning autism aged 6-10 from a school for children with ASD in Mashhad, they recruited randomly in SPARK group, SBP group, and Control group. Participants in Spark and SBP groups participated for eight weeks (24 sessions) in their special training. Fundamental motor skills of all participants were assessed at pre-test, post-test, and one-month follow-up test using TGMD-2. Results of this study were analyzed by repeated measure analysis of variance using SPSS version 23 at $\alpha=0.01$

Results: Results of repeated measure ANOVA revealed a significant main effect of group and time on Locomotor ($p=0.001$), Object Control ($p=0.001$), and Motor Proficiency ($p=0.001$). Both SPARK and SBP had better performance in all three measures than the control group ($p=0.001$). There was not any significant difference between SPARK and SBP in locomotion ($p=0.137$) and object control ($p=0.430$); however, participants in the SBP group had better performance than the SPARK group in motor proficiency ($p=0.001$). In the follow-up test one month after training, there was a significant main effect of group in Locomotor ($p=0.002$), Object Control ($p=0.001$), and Motor Proficiency ($p=0.001$). Both SAPRK and SBP groups had better performance in Locomotor ($p=0.001$), Object Control ($p=0.001$), and Motor Proficiency ($p=0.001$) than the control group. However, there was not any significant difference between SPARK and SBP group in Locomotor ($p=0.861$), Object Control ($p=1.00$), and Motor Proficiency ($p=1.00$).

Conclusion: Results of the current study shows that motor interventions in the current study could affect positively on motor development in children with Autism and should consider in their daily interventions

Keywords

Motor interventions; fine motor development; gross motor development

Reference:

1. Healy S, Nacario A, Braithwaite RE, Hopper C. The effect of physical activity interventions on youth with autism spectrum disorder: A meta-analysis. *Autism Research*. 2018;11(6):818-33. Link: <https://doi.org/10.1002/aur.1955>.
2. Ketcheson L, Hauck J, Ulrich D. The effects of an early motor skill intervention on motor skills, levels of physical activity, and socialization in young children with autism spectrum disorder: A pilot study. *Autism*. 2017;21(4):481-92. Link: <https://doi.org/10.1177/1362361316650611>
- 3.. Colombo-Dougovito AM, Block ME. Fundamental Motor Skill Interventions for Children and Adolescents on the Autism Spectrum: a Literature Review. *Review Journal of Autism and Developmental Disorders*. 2019;6(2):159-71. Link: <https://doi.org/10.1007/s40489-019-00161-2>
4. Bremer E, Crozier M, Lloyd M. A systematic review of the behavioural outcomes following exercise interventions for children and youth with autism spectrum disorder. *Autism*. 2016;20(8):899-915. Link: <https://doi.org/10.1177/1362361315616002>