

The Effectiveness of Therapeutic Exercise on Motor Skills and Attention of Male Students with Autism Spectrum Disorder

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Abstract : Autism spectrum disorders (ASD) involve myriad aberrant perceptual, cognitive, linguistic, and social behaviors. The term spectrum emphasizes that the disabilities associated with ASD fall on a continuum from relatively mild to severe. People with ASD may display stereotyped behaviors such as twirling, spinning objects, flapping the hands, and rocking. The individuals with ASD exhibit communication problems due to repetitive/restricted behaviors. Children with ASD who lack the motivation to learn, who do not enjoy physical challenges, or whose sensory perception results in confusing or unpleasant feedback from movement may not become sufficiently motivated to practice motor activities. As a result, they may show both a delay in developing certain motor skills. Additionally, attention is an important component of learning. As far as children with ASD have problems in joint attention, many education-based programs are needed to consider some aspects of attention and motor activities development for students with ASD. These programs focus on the basic movement skills that are crucial for the future development of the more complex skills needed in games, dance, sports, gymnastics, active play, and recreational physical activities. The purpose of the present research was to determine the effectiveness of therapeutic exercise on motor skills and attention of male students with ASD. This was an experimental study with a control group. The population consisted of 8-10 year-old male students with ASD and 30 subjects were selected randomly from an available center suitable for the children with ASD. They were evaluated by the Basic Motor Ability Test (BMAT) and Persian version of computerized Stroop color-word test and randomly assigned to an experimental and control group (15 students in per group). The experimental group participated in 16 therapeutic exercise sessions and received therapeutic exercise program (twice a week; each lasting for 45 minutes) designed based on the Spark motor program while the control group did not. All subjects were evaluated by BMAT and Stroop color-word test after the last session again. The collected data were analyzed by using multivariate analysis of covariance (MANCOVA). The results of MANCOVA showed that experimental and control groups had a significant difference in motor skills and at least one of the components of attention (correct responses, incorrect responses, no responses, the reaction time of congruent words and reaction time of incongruent words in the Stroop test). The findings showed that the therapeutic exercise had a significant effect on motor skills and all components of attention in students with ASD. We can conclude that the therapeutic exercise led to promote the motor skills and attention of students with ASD, so it is necessary to design or plan such programs for ASD students to prevent their communication or academic problems.

Keywords : Attention, autism spectrum disorder, motor skills, therapeutic exercise

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