

Effectiveness of Aquatic OT for Children With Autism Spectrum Disorder

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Children with Autism Spectrum Disorder (ASD) can experience difficulties with communication, social interaction, and although not a diagnostic characteristic, gross motor skills (Pan, 2011). As motor skills relate to participation in physical activity and later gaining of physical literacy (Cairney, Dudley, Kwan, Bulten, Kriellaars, 2019), it is important to assist children with ASD in working towards motor competence in order to expand a child's activity engagement, such as with water play. Drowning is the leading cause of accidental death for children with ASD. However, water play has been reported by parents as a favorite activity for their children with this diagnosis (Alaniz, Rosenberg, Beard, & Rosario, 2017), and therefore presents a need for increased swim safety and skills awareness. Aquatic occupational therapy has been shown to improve swim skills after 8 hours of instruction (Alaniz et al., 2017) and is also utilized to improve physical functioning (Vonder Hulls, Walker, & Powell, 2009). This was a mixed methods pilot cohort study that utilized a convenience sample of children ages 3-7 with a self-reported diagnosis of autism. Eight children participated in a 10-week individualized therapeutic adaptive swimming program led by an occupational therapist and occupational and physical therapy students. Aquatic sessions were held in a group format for one hour per week, with each child paired with the same therapy student each week. Individualized goals were created by an occupational therapist based upon intake assessment and initial performance on the Water Orientation Alyn Test 2 (Tirosh et al., 2008). Goal attainment scaling was utilized to create evenly spaced objectives to track weekly progress. Aquatic instruction was individualized to each child's level and based upon both traditional swim and Halliwick method instruction, which is rooted in performing motor sequences and holding body positions in different planes of movement (Tirosh et al., 2008). Activity analysis, critical to occupational therapy practice, was used to design each session as well as individualized visual schedules for both group and individual activities. Students were trained in the outcome measure, Halliwick tenets and the swim group procedures before beginning. Descriptive statistics were used to determine number of goals met and swim skills gained for each participant. Results show that at the end of 10 weeks, all eight child participants met 66% or more of their individualized goals; each child had three to four goals depending on their needs. Goal Attainment Scaling used in creation of goals showed that of the total number of goals written for all participants, 71% were exceeded. Additionally, WOTA2 data showed that all participants increased total scores from initial to final collection with half of the participants meeting the MCID, mimicking similar studies (Tirosh et al., 2008). As measured by the WOTA2, all children demonstrated an increased score for a minimum of four skills and at least 75% of participants demonstrated increased scores for 12 skills. The purpose of this study was to evaluate the effectiveness of a 10-week individualized therapeutic adaptive swimming program on motor control and swimming skills in children with ASD. This study shows both the effectiveness of and need for occupational therapy in the aquatic setting in order to increase motor competence, and therefore physical literacy, in children with ASD. In addition, this intervention also provides participants with water safety skills which may help prevent drowning. Overall, the skills developed in this study allow children to safely participate in a desired family occupation.

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