Community Therapeutic Recreation Physical Activity Program for Pre-School Aged Children Diagnosed with Autism Spectrum Disorder: A Multidisciplinary Pilot Study

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Introduction: Children with autism spectrum disorder (ASD) can display disruptive behaviors and lack social skills (American Psychiatric Association, 2013). This population can also demonstrate a lack of motor skill development when compared to normally developed peers (Licari et al., 2020; Mohd Nordin et al., 2021). Physical activity can assist in decreasing negative behaviors, increasing positive behaviors, and improving motor skills in children diagnosed with ASD (Lang et al., 2010). Although physical activity can be beneficial, research has indicated children diagnosed with ASD have lower physical activity levels compared to their peers (Macdonald, Esposito, & Ulrich, 2011). This decrease could be due to lack of opportunities or knowledge on how to program physical activity for individuals with ASD. Based on the variety of needs and behavior characteristics, a multi-disciplinary approach to programming could be beneficial for this population. The purpose of this study was to use physical activity programming to decrease disruptive and/or self-stimulatory behaviors and increase social and motor skills in children diagnosed with ASD through techniques utilizing therapeutic recreation methods while incorporating psychology and exercise science practices and knowledge.
Methods: Therapeutic recreation and psychology and counseling faculty and students created a four day a week, five week physical activity program. Participants (n = 4) were recruited through two community preschool ASD classrooms. Participants had to be current students at the pre-school, have a diagnosis of or be in the process of being diagnosed with ASD, follow ten simple one-step instructions and engage in disruptive and/or self-stimulatory behavior. Psychology and counseling undergraduate students preparing to enter the Applied Behavioral Analysis program were trained and collected the data. The Assessment of Basic Language and Learning Skills-Revised (ABLLS) and the motor section of the Vineland Adaptive Behavior Scales – 3 were completed pre and post program. Participants were also observed on disruptive behaviors, self-stimulating behaviors, engagement, and social skills. Observations and measurement of behaviors in 30 second intervals were recorded two weeks prior to the program, 30 minutes before each program day, during each program and 30 minutes after each TR session, and three weeks post-program. Therapeutic recreation, exercise science, and psychology and counseling students collaborated in the planning and implementation of the physical activity interventions. Programming was based on the pre-assessment results. Goals were created for each week, such as improvement of listening skills, time on task, increasing coordination, and participants waiting their turn. Activities were taught in a scaffolding method, with the fourth day of each week

incorporating all activity skills learned that week to complete one physical activity. Examples of successful activities included obstacle courses, scavenger hunts, bowling, and parachute games. **Results**: Participants (ages 3 – 5yrs.; m = 4;) disruptive behaviors included tantrums, aggression, and crying/screaming. Self-stimulatory behaviors included rocking, pacing, posturing, hand movements, vocals, flapping, eye gaze, head rolling, and fingers in mouth. Engagement noted the biggest change in behaviors. See Figures 1 - 4 for preliminary behavior results as motor skills are currently being analyzed. Anecdotal data indicated participants enjoyed the program, wanted to continue participating after it had come to the end of the five weeks, and created an awareness among staff of the potential of the participants when outside of a classroom setting. **Discussion**: This pilot study suggests support of the use of physical activity to increase social skills and decrease self-stimulatory behaviors (Lang et al., 2010) Based on the anecdotal data, a physical activity environment may provide opportunities for children with ASD to highlight skills they may not to demonstrate in a classroom setting. The interventions completed during this study could encourage children with ASD to be physically active when not in a structured setting. Using therapeutic recreation practices could help children with ASD learn new activities and take those learned skills into other settings, such as recreational time with family. This pilot study did have some limitations. First, considering the behaviors participants were observed doing before and after each intervention could have impacted data collection. For example, before each intervention, observation was completed in a classroom setting, compared to after each intervention, the programming observation was completed during recess or free time. Second, the study's length was to be eight weeks, but due to weather-related school closings, the study had to be limited to five weeks. Last, a sample size of four makes it challenging to generalize findings to the entire population. Although there were limitations, this pilot study did provide insight into multi-disciplinary programming and considerations for practitioners. Each discipline provided valuable input during the assessment, planning, and implementation phases. These phases also provided opportunities for each discipline to learn more about each practice. Recreation therapists are encouraged to collaborate with outside disciplines to provide comprehensive programming. This pilot study provides a suggested structure for a multi-disciplinary treatment team when implementing physical activity interventions for children with ASD.

Figures

Figure 1

Participant Disruptive Behavior Observations

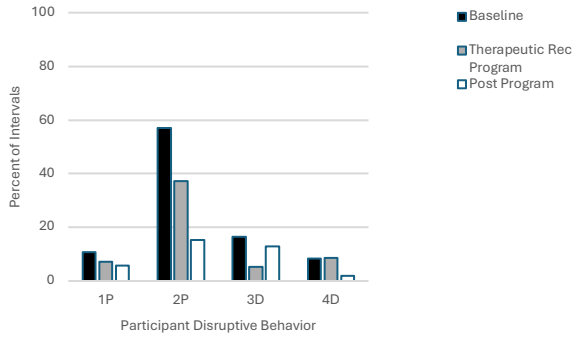


Figure 2

Participant Self-Stimulatory Behavior Observations

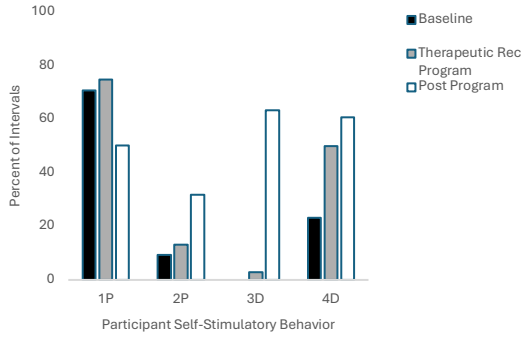


Figure 3

Observed Participant Social Skills

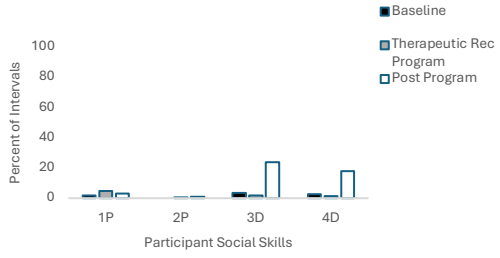
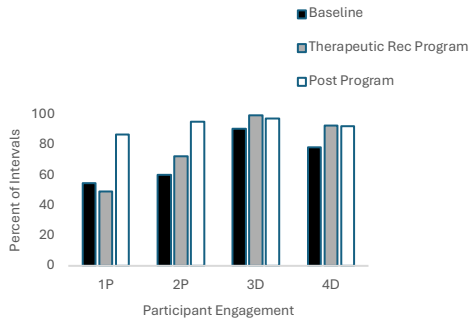


Figure 4

Observed Participant Engagement



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