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Recommended Citation

Lee, Christy; Mathews, Alana; Ayers, Kayla; Weisbarth, Madison; and Spurbeck, Melissa, "Effects of Extracurricular Physical Activity on Strength, Balance, Endurance and Quality of Life on Children with Disabilities" (2020). *University of Dayton Doctor of Physical Therapy Annual Research Symposium*. 6. https://ecommons.udayton.edu/dpt_symposium/6

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Effects of Extracurricular Physical Activity on Strength, Balance, Endurance and Quality of Life on Children with Disabilities

Accepted for presentation at the Ohio Physical Therapy Association Annual Conference 2020, Columbus, OH.

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ABSTRACT

Background/Purpose: The purpose of this study was to investigate the effects of extracurricular physical activity on strength, balance, endurance and quality of life on children with disabilities.

Methods: Eighteen children (10 males, 8 females) ranging in age from 11-18 years participated in a local inclusive kickball program. All children and their parents were aware that participation was voluntary and signed consent or assent forms. Diagnoses of the children included Down Syndrome, Aspergers, Expressive Language Delay and Developmental Delay. The children participated in 60 minute kickball sessions led by a program director, 1 time per week for 6 weeks. The Pediatric Quality of Life Inventory (PedsQL), Pediatric Balance Scale (PBS) and 30-second walk test were administered at baseline and at the end of 6 weeks. Descriptive statistics were calculated for all measures.

Results: Means, standard deviations, and p-values were calculated. Non-parametric statistics, Related-Samples Wilcoxon Signed Rank Test, were used. A significant difference ($p = .028$) was found between the pre and post distance measures for the 30 second walk test, and in the pre and post measures for the PBS ($p = .009$). No significant difference ($p = .445$) was found between pre and post measures for the PedsQL.

Conclusion: Participating in kickball was found to significantly improve endurance and balance but not quality of life. Improvements may have been seen in endurance due to the participants running the bases and in the outfield each time they played. The improvements seen in balance

were likely due to the participants having to kick the ball repetitively, change positions quickly, bend over to pick up the ball and navigate obstacles while running. Moving forward, it might be advantageous to include a warm-up incorporating activities that are aimed at having the children interact with each other, in hopes of improving item scores on the PedsQL.

Clinical Relevance: Children experience benefits in activities directly related to the task they are performing. These findings indicate that kickball or other similar recreational sports that involve running and balancing activities may be advantageous to improving functional mobility, specifically ambulation speed and balance.