Research Synopsis: A Pilot Study

By Heather F. Ajzenman, OTD, OTR/L

RESEARCH SYNOPSIS

The Effect of Hippotherapy on Motor Control, Adaptive Behaviors, and Participation in Children with Autism Spectrum Disorders, a Pilot Study.

SOURCE

Ajzenman, H., Standeven, J., & Shurtleff, T. (In press). The effect of hippotherapy on motor control, adaptive behaviors, and participation in children with autism spectrum disorders, a pilot study. The American Journal of Occupational Therapy.

INTRODUCTION/RESEARCH QUESTION

Postural control plays an important role in development, potentially impacting activity participation and performance in a variety of daily occupations. A study by Fournier, et al. (2010) suggested that children with autism spectrum disorders (ASD) have a delayed postural control system, with noted increased postural sway compared to typically developing children.

PURPOSE OF THIS INVESTIGATION

To determine if incorporating hippotherapy as a treatment tool in occupational therapy can improve function and participation in children with ASD. Specifically, can postural control, adaptive behaviors, and participation improve after 12 weeks of occupational therapy incorporating hippotherapy?

METHODS/DESIGN

Using a single group pre-post design, six children ages 5-12 with ASD participated in 12 weeks of intervention for 45 minutes per week. Four boys and two girls made up the study population; all had specific types of ASD, including Asperger's syndrome and autism. All therapy sessions were provided by a licensed occupational therapist or certified occupational therapy assistant. A progression strategy for treatment was created that examined five domains: motor control, functional communication, cognition, social skills, and interactive play. This hierarchal approach was developed to provide uniform treatment while offering flexibility for the use of clinical judgment as part of the treatment sessions and progression of skilled tasks.

Data was collected one week prior to and one week post intervention. Postural stability data was gathered through objective center of mass and center of pressure data points collected from simultaneous recordings of an eight video motion capture system and a single force plate while a participant stood quietly for approximately 20 seconds over multiple trials. Adaptive behaviors and participation were evaluated through the use of parent-report measures. The Vineland Adaptive Behaviors Scale-II was used to measure adaptive behaviors and performance in daily activities through communication (receptive, expressive, written), daily living skills (personal, domestic, community), socialization (interpersonal relationships, play and leisure time, coping skills), and motor skills (fine and gross). The Child Activity Card Sort (a modified version of the Preschool Activity Card Sort) was used to explore engagement in self-care, community mobility, high demand leisure, low demand leisure, social interaction, domestic, and educational activities through the use of a card sort based on personal, familial, or environmental factors impacting participation.