

Effect of Hippotherapy on Perceived Self-Competence and Participation in a Child with Cerebral Palsy

Source: Frank, A., McCloskey, S., & Robin, L. D. (2011). Effect of hippotherapy on perceived self-competence and participation in a child with cerebral palsy. *Pediatric Physical Therapy*, 23(3), 301-308.

Purpose:

The purpose of this case report is to describe one child with cerebral palsy improvement in function, as well as participation as measured by perceived self-competence and social acceptance.

Design/Methods:

This study was a case-report of one child who was referred to physical therapy by her physician, with a specific recommendation for hippotherapy. The child was a 6-year-old girl with a diagnosis of mild ataxic CP due to congenital malformation of the cerebellum. She has had therapy in the past, including physical, occupational and speech therapy, however, was not receiving additional services at the time of study, in which she only received hippotherapy from the same physical therapist throughout all sessions. This PT gathered all measurements as well, which occurred at baseline, at the end of the intervention, and 2-months post-intervention as follow-up. The child received hippotherapy 2 times a week, for 8 weeks, for a total of 16 sessions overall. Each session lasted 45 minutes, consisting of 30 minutes of hippotherapy with a focus on postural control, trunk cocontraction, postural alignment, and upper and lower extremity strengthening, and 10 minutes of land-based therapeutic exercise including balance, coordination and strengthening activities. Three assessments were utilized to measure child at baseline, after the 8-week intervention period, and at 2-months post-intervention as follow-up. The Gross Motor Function Measure-66 (GMFM-66) was chosen to measure change in motor function. The Pediatric Outcomes Data Collection Instrument (PODCI) is a parent-reported instrument that measures functional health and efficacy of treatment for patients following orthopedic surgery in 5 domains: health and well-being including upper extremity and physical function, transfers and basic mobility, sports and physical function, pain and comfort, and happiness. Lastly, the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PSPCSAYC) is an instrument that quantifies self-perceived qualities of young children up to age 7 years.

Results:

GMFM-66 scores in walking, running and jumping improved from baseline of 87.5 to 93 after 8-week intervention and 94.4 after 2-month follow-up (100 is maximum score). The most dramatic changes assessed by the PODCI were seen in upper extremity function (baseline=50, after 8-week intervention=83, 2-month follow-up=88), transfers and basic mobility (baseline=93, 8-weeks=100, follow-up=98), sports and physical function (baseline = 60, 8-weeks=78, follow-up=95) and overall global score (baseline=76, 8-weeks=90, follow-up=95). Most notable differences from the PSPCSAYC (max score=24) were seen in physical competence (baseline=18, 8-weeks=20, follow-up=20) and maternal acceptance (baseline=22, 8-weeks=24, follow-up=23).

Conclusion:

Following 8-weeks of hippotherapy intervention with a physical therapist, the child improved in motor function, improved in measures of functional health and efficacy and had increased levels of competence and social acceptance following treatment, and these improvements remained 2-months post-intervention.

Strengths:

This study looked at one subject in great detail, and assessed physical components as well as self-perceived qualities of competence and social acceptance.

Limitations:

This was a case-study so results cannot be generalized to all children with ataxic CP, however, they can be used with clinical judgment to apply appropriate aspects to other clients with similarities to this subject.

Practical Application:

Hippotherapy may be an effective treatment for treating other children with CP or similar diagnoses. The mother of the child in this study reported that post-hippotherapy intervention, the child experienced greater independence at home; and the child reported "my bad leg turned into my good leg", indicating positive perceptions of treatment from parent and child alike, in addition to the positive increases assessed through actual measurements. Additionally, hippotherapy is an intervention that allows a therapist to work on improving activity performance, while the child participates in what they may perceive as a fun activity.