Why Children with Special Needs Feel Better with Hippotherapy Sessions: A Conceptual Review

Source: Granados, A & Fernandez, A. (2001) Why children with special needs feel better with hippotherapy sessions: A conceptual review. *The Journal of Alternative and Complimentary Medicine, 17*(3), 191-197.

Purpose:
To provide a chronological review that will help health care professionals understand how horses can be used as a main tool in an effective therapy intervention for children with disabilities.

Design/Methods:
The study was a chronological review of the history of hippotherapy, the theories behind the use of hipportherapy, and evidence for the effectiveness of hippotherapy. The study differentiated classical hippotherapy and modern hippotheray. Classical hippotherapy is primarily movement based and uses the repetitive movement of the horse to treat predominantly neuromuscular and musculoskeletal disorders. Modern hippotherapy includes not only physical interventions, but also social, cognitive, behavioral, psychological, and educational interventions performed by multi-disciplinary therapists (speech pathologists, physical therapists, occupational therapists). The study also breaks down the current theoretical framework behind hippotherapy to include dynamic systems theory, theory of sensory integration, and the theory of neuronal group selection.

Dynamic systems theory assumes that the many complex systems at work inside a person are continually shifting, changing, and integrating based on constraints that exist in three domains: within a person, in the environment, and in the task performed by the person. The unique environment created at the barn and between the client, horse, sidewalkers, and therapist creates constraints that challenge and affects many different systems in the client. These constraints include postural control, arousal, motivation, temperature, and rhythm.

According to sensory integration theory, learning and behavior are influenced by a person's sensory and motor capacities including auditory processing, body awareness, coordination between sides of the body, fine motor control, motor planning, ocular control, perception of movement, touch perception, and visual spatial-perception. All of these sensory processes are affected by the horse's movement and the activities used in hippotherapy. The repetitive movement, especially, challenges the vestibular system and proprioceptive system.

The theory of neuronal group selection is based on three main assumptions: 1. The brain is plastic and this plasticity determines how the brain is organized, 2. Experience selects and strengthens different neuronal pathways, 3. The environment and different experiences can change a person's neuronal maps and pathways. Because of this plasticity and ability to rewire and strengthen different brain pathways, the high number of repetitions the horse's movement in each session allows for a client to develop and then strengthen new neuronal connections. These new connections allow the learning of new skills.

The article concludes with a brief overview of some of the effects of hippotherapy including physical benefits, psychological benefits, social benefits, and educational benefits. Studies have shown that hippotherapy can improve muscle symmetry, balance, muscle strength, range of motion, and coordination. Other studies show that some of the psychological benefits of hippotherapy include increased emotional well-being, empowerment, improved motivation, increased attention, confidence, and communication. Studies have also shown that hippotherapy provides many opportunities for social interaction between the client, the sidewalkers, the leader, the horse, and/or the therapist. Finally, hippotherapy may help provide motivation for children to improve math skills and recognize different shapes or colors by having the child count horse's feet or pick out different colored objects around the barn.

Conclusion:
Hippotherapy creates an organic environment for social interaction and learning to take place. The repetitive movements of the horse as well as the motivation it provides are effective catalysts for interventions targeting movement, cognition, social skills, communication, and physical ability.

Strengths:
This study provides a valuable look into the theoretical background of the success of hippotherapy. The article also reviews many articles on hippotherapy and gives a great overview on the evidence behind the intervention.

Limitations:
Although this study reviewed many articles regarding hippotherapy, it did not follow a formal systematic review method. The authors also did not share their methodology for searching and selecting articles to include in the review. Because of this, it is difficult to say whether the articles selected give a full view of the evidence behind hippotherapy or if the authors selected only articles that furthered the picture they were trying to present.

Practical Application:
Hippotherapy may be an effective intervention for a wide variety of disabilities and could provide social, physical, psychological, and educational benefits. The theory of neuronal group selection suggests that younger clients may benefit more from hippotherapy due to having more brain plasticity than older clients. This is not to say that older clients cannot benefit from hippotherapy. The authors suggest hippotherapy sessions occur over a minimum of 12 weeks with interventions occurring weekly, however they do not give any evidence to back up this claim.