

The Effect of Therapeutic Horseback Riding on Social Functioning in Children with Autism

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Purpose:

To determine the effect, if any, 12 weeks of therapeutic horseback riding has on the social functioning of children with autism spectrum disorder (ASD).

Design/Methods:

The study included 34 children diagnosed with ASD. The 34 children were divided into two groups: an experimental group (2 girls, 17 boys, age range 5-10) and a wait-list control group (3 girls, 12 boys, age range 4-10). There was a pre-testing phase, 12 weeks of therapeutic riding, and post-testing session, all of which happened at one riding arena. All intervention occurred at no cost to the parents. Parents had to provide informed consent and all participants were medically cleared from their doctor before participating. None of the participants had previous riding experiences but almost all had undergone traditional therapy. The measures used in the pre- and post-testing sessions were given to all parents. The first measure was the Social Responsiveness Scale (SRS) and it's a 65 item questionnaire that measures how severe the symptoms associated with ASD are. The second measure was the Sensory Profile (SP). The SP consists of 125 items that represent a global picture of social functioning and examines problems in the following areas: sensory processing, modulation, and behavioral and emotional responses. Each rider had a 1 hour riding session per week for 12 weeks. Each session was broken down into the following components: mounting and dismounting (5 minutes), exercises (10 minutes), riding skills (15 minutes), mounted games (20 minutes), and horsemanship activities (10 minutes). Each different component worked on a different skill. Mounting and dismounting addressed verbal communication, proprioception, and vestibular processing. Exercises prepared the participants for the physical aspects of the session. Sensory seeking and gross and fine motor domains were the focus of the riding skills whereas the mounted games focused more on social and communication skills. The horsemanship activities further addressed communication skills. After the 12 weeks of therapeutic riding, parents of children in both groups completed both the SRS and the SP again.

Results:

On the SP there was a significant interaction between group and time. Follow up testing revealed that the experimental (riding) group had significant increases in their pre-test and post-test scores but the control (wait-list) group only experience minimal increases. Statistically significant treatment effects were revealed using paired samples *t*-tests in 4 of the 5 subscales: sensory seeking, inattention/distractibility, sensory sensitivity, and sedentary. The control group did not exhibit these same changes. There was also a significant group x time interaction for the SRS score. Follow up *t*-tests revealed a significant increase for the experimental group were constant for the control group.

Conclusion:

For children with ASD therapeutic riding may be an effective therapy technique. In comparison to a wait-list group, children in the experimental group showed gains in crucial areas including sensory integration and directed attention. Other gains were made in the areas of social motivation and sensory sensitivity and decreases were noted in distractibility and inattention. Social functioning increases could be attributed to many factors associated with the riding experience such as stimulation by the horse or riding being a rewarding stimulus. Overall, elevated levels of sustained attention and focus not common in children with ASD were noted.

Three subscales (fine motor/perceptual, social cognition, and social awareness) were not significant although were not addressed in the intervention. Cerebellar abnormalities are a common problem believed to be associated with ASD. The findings of this study corroborate the fact that the cerebellum is linked to both motor and social domains. There could be a link between therapeutic riding and cerebellar functioning.

Strengths:

This study examines many of the critical problem areas often associated with ASD. The control group was very comparable to the experimental group.

Limitations:

No information about medicines of the participants. These variables therefore could not be controlled. Lack of additional data makes determining if the results were due to the therapeutic riding or extraneous variables difficult. 9 total participants dropped from the study.

Practical Application:

Improvements in 4 out of 5 subscales for the SP and 3/3 subscales for the SRS indicate a positive effect of therapeutic riding for children with ASD. Treatment and interventions could be tailored to fit specific problem areas for different children. Further research examining the overall therapeutic effect of horseback riding is needed.