MEASURING THE EFFECTS OF THERAPEUTIC HORSEBACK RIDING IN CHILDREN WITH AUTISM SPECTRUM DISORDERS

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Methods

Participants

- ASD Children and adolescents (ages 6 – 17 years)
- ASD diagnoses confirmed by ADOS [7] and Social Communication Questionnaire (SCQ) [8]
- IQ ≥ 40
- Aberrant Behavior Checklist-Community Irritability subscale ≥ 11

Procedures

- Diagnostic and IQ screening evaluations
- Screened by NARHA-certified Advanced Instructor at Colorado Therapeutic Riding Center (CTRC) to:
  - Assess horsemanship skills and level of functioning
  - Assign to appropriate THR group based on level of functioning
  - Exclude based on inability to ride/approach horse
- Pre- and post-THR evaluation by occupational therapist and research assistant within one month prior to and following participation in 10 weeks of THR lesson to assess motor and adaptive skills
- Caregivers completed ABC-C pre- and post-THR
- THR weekly intervention:
  - Followed specific skill progression and objectives
  - Horse and side-walker volunteers consistent for each participant
  - Taught in small group setting of no more than 4 participants
- Led by NARHA certified Advanced Instructor
- Picture schedule of lesson activities presented

Subject Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>(n = 26)</th>
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<tbody>
<tr>
<td>Mean Age</td>
<td>8.6 (5.3 – 16.1 years)</td>
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<tr>
<td>Gender</td>
<td>Male: 21; Female: 5</td>
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<tr>
<td>Comorbid Psychiatric Diagnoses</td>
<td>Yes: 15; No: 11</td>
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<tr>
<td>Psychoactive Medications</td>
<td>Yes: 11; No: 15</td>
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<tr>
<td>Mean nonverbal IQ</td>
<td>98 (52 – 139)</td>
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<tr>
<td>Mean VABS II Communication Total SS Score</td>
<td>81.9 (61 – 110)</td>
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<tr>
<td>ASD Diagnosis</td>
<td>Autism: 18; Asperger’s: 8</td>
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<tr>
<td>Seizures</td>
<td>Yes: 2; No: 24</td>
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Results

- No significant changes in outside treatment were noted by caregivers during the THR sessions
- Post intervention changes in VABS-II subscale scores were significant for the communication raw score (p=0.0457) and total adaptive score (p<0.0001)
- BOT-II short form scores improved significantly (p=0.0006)
- Improvement in SIPT scores were noted for both verbal praxis (p<0.0001) and postural praxis (p=0.014)
- When rated by parents, improvements in ABC-C subscale scores for irritability, hyperactivity, lethargy and stereotypy were found to be significant (p < 0.01) but changes in the inappropriate speech subscale were not significant

Discussion

- Participation in a well-defined THR program of 10 weeks duration with ASD children and adolescents indicates improvement in behavioral and physical parameters
- Measures of adaptive skills, motor coordination and planning and aberrant behaviors improved statistically over the course of THR

Future Directions

- Additional data and wait-list control data will be obtained to corroborate significant changes noted and validate or disprove noted trends
- Future work is planned to address questions such as length and specificity of THR effects
- Future studies of THR should focus on motor proficiency and quality of life (QOL) issues in ASD that impact child’s ability to function in home and school environments
- QOL issues are often reasons families seek medication intervention trials that are not always medication-free and sometimes further complicate the child’s behavioral presentation

Acknowledgements

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References

15. J. Oseretsky Test of Motor Proficiency
17. J. Oseretsky Test of Motor Proficiency
19. J. Oseretsky Test of Motor Proficiency

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