Effects of Equine Assisted Activity on Children and Adolescents with Autism Spectrum Disorder

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INTRODUCTION

Autism spectrum disorder (ASD) encompasses a spectrum of disorders which are characterized as having impaired communication skills, social skills and repetitive behaviors or body movements. Since every individual with ASD presents with different challenges, treatment modalities for ASD are quite diverse. Equine Assisted Activity (EAA), including therapeutic horseback riding (THR), is a form of animal assisted therapy provided by a riding instructor that is now being utilized for individuals with ASD. It is the emphasis of control, focus, sensory management, attention and both verbal and nonverbal communication that are at the core of the therapy. It is thought that contact with horses stimulates a psychological, social and physiological response in the children and adolescents. This study examines the use of EAA and the effect it has on children and adolescents with ASD, including their behavior and level of adaptive functioning on both a short term and long term basis.

CLINICAL QUESTION

In a population of children and adolescents with ASD, does EAA improve adaptive functioning and behavior compared to children with ASD not engaged in EAA?

METHODS

P POPULATION
Children and adolescents with autism spectrum disorder

I INTERVENTION
Equine assisted activity

C COMPARISON
Children and adolescents with autism not participating in equine assisted therapy

O OUTCOME
Improved behavior and adaptive functioning

RESULTS

Table 1.0 Comparison of All Three Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants, N</th>
<th>Gender M/F</th>
<th>Patient population</th>
<th>Primary Investigation</th>
<th>Duration of study</th>
<th>Study strengths</th>
<th>Study limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabriels et al*</td>
<td>127</td>
<td>49/9</td>
<td>Children and adolescents ages 6-16 with a prior diagnosis of ASD</td>
<td>The effects of THR vs. only BA</td>
<td>10 weeks</td>
<td>Larger study size; multiple scale measurements used</td>
<td>Short duration of study; more males than females; 11 children dropped from the study; possible caregiver bias as they were not blinded to study</td>
</tr>
<tr>
<td>Ward et al*</td>
<td>21</td>
<td>15/6</td>
<td>Children grades between Kindergarten to 5th grade with a prior diagnosis of ASD</td>
<td>The effects of THR-no control</td>
<td>30 weeks</td>
<td>Longer study duration</td>
<td>Small sample size; more males than females; no control group; all data generated from one source</td>
</tr>
<tr>
<td>Lanning et al*</td>
<td>25</td>
<td>EAA= 9/4 Social Circles= 12/0</td>
<td>Children between the ages of 5-15 with a prior diagnosis of ASD</td>
<td>The effects of EAA vs. participating in social circles</td>
<td>12 weeks</td>
<td>Different domains measured to assess the participants behavior</td>
<td>Short duration of study; more males than females; child’s baseline level of functioning not discussed; clerical error during week 12</td>
</tr>
</tbody>
</table>

N=total number (of participants) in study; M= male; F=female; ASD= autism spectrum disorder; THR= therapeutic horseback riding; BA= barn activity; EAA= equine assisted activity

Table 2.0 Scale Measurements For All Three Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>GARS-2</th>
<th>SPSC</th>
<th>PedsQL</th>
<th>CHQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward et al*</td>
<td>Systematic Analysis of Language Transcripts</td>
<td>Aberrant Behavior Checklist, Revised (ABC)</td>
<td>Systematic Analysis of Language Transcripts</td>
<td>CHQ</td>
</tr>
</tbody>
</table>

CONCLUSION

From 2002 to 2010, ASD prevalence increased by nearly 123%. As more children are being diagnosed with ASD, and because of the diverse nature of the disorder, a broad variety of treatment modalities have become available. EAA has shown improvement in children and adolescents’ behavior, and cognitive, social and emotional functioning. However, due to the limited number of studies available and the small sample sizes of published studies (including the studies in this review), there are still many unanswered questions about the effectiveness of EAA as a long term therapy option. Larger scale studies with an even distribution of males to females should be conducted to determine both the short and long term effects EAA has on behavioral and adaptive functioning in children and adolescents with ASD.

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REFERENCES