

Benefits of Equine-Assisted Activities in a Child with Autism Spectrum Disorder Compared to  
Other Therapy Services

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## **Abstract**

This paper focuses on the benefits of equine-assisted activities during lessons and the differences in effects from other forms of therapy such as outpatient and school-system. Interview data was collected from one child's caregiver. The child has been participating in equine-assisted activities during therapeutic riding lessons at a program in Leeds, Alabama. The results in this case demonstrated that the child gained more skills from equine-assisted activities at this program in comparison to other forms of therapy such as outpatient occupational therapy and speech therapy. Specifically, the child has made improvements in social, language, emotional, and gross motor skills. These benefits from the program have been seen in other environments as well including at home and school which demonstrates the generalization of this therapy to other environments.

## **Introduction**

Autism spectrum disorder, or ASD, is defined by the American Psychiatric Association as “persistent deficits in social communication and social interaction across multiple contexts” (2013). These deficits include social-emotional reciprocity, verbal and nonverbal communication, and repetitive patterns of behavior and interests (APA, 2013). Additionally, some children also have difficulty with motor movements including the motor planning, or praxis, and the execution of these movements to complete valuable occupations (Minschew, Goldstein, & Siegel, 1997; Rogers, 1998). Lastly, a common characteristic is a lack of motivation to engage in occupations because there is less reinforcement from motivating stimuli in comparison to others (Bauman & Kemper, 1994).

An equine-assisted activity, or EAA, is a form of therapy that is often used with people with physical, cognitive, or emotional disabilities. It can include “any specific center activity such as, therapeutic riding, mounted or ground activities, grooming and stable management, shows, parades, demonstrations, etc., in which the center’s clients, participants, volunteers, and instructors and equines are involved” (PATH, 2019). The benefits of equine-assisted activities include improving confidence, self-esteem (Bizub et al., 2003; Schultz et al., 2007), flexibility (PATH, 2019), posture, balance, gross motor skills (Ajzenman, Standeven, & Shurtleff, 2013; All et al., 1999; Freund et al., 2011), cognition (Bass et al., 2009; Borgi et al., 2014; Gabriels et al., 2012; Holm et al., 2014; Ward et al., 2013), and social skills (All et al. 1999; Freund et al. 2011; Gabriels et al., 2012; Keino et al. 2009). The purpose of this study is to determine what makes equine-assisted activities a more successful form of therapy than others such as outpatient or school system. It also explores the specific skills which improved during equine-assisted activities and if these skills are generalizable across settings.

## **Literature Review**

There are currently several treatment options for Autism Spectrum Disorder that have been utilized in the past. Firstly, sensory integration has been a common treatment which focuses on perception and interpretation of stimuli to create more organized behavior and occupational performance (Ayres, 1972). Although this treatment has been successful, it does not address all deficits of the diagnosis as mentioned above. Further treatment has been done to address motor skills but has lacked evidence to support the intervention effects especially over long periods of time (Baraneck, 2002).

One approach that has shown success in children with autism is increasing intrinsic motivation to enhance engagement (Koegel, Koegel, & Brookman, 2005). Similarly, Ayres also focused on the importance of locating and utilizing a child's inner drive to increase motivation which is a known deficit in autism (1972). One motivator for children with autism is based on the biocentric view which suggests that these children demonstrate a natural interest towards animals (Sams, Fortney, & Willenbring, 2006).

Combining elements that engage children with autism and making them an active participant by utilizing their intrinsic motivation is demonstrated with equine-assisted activities (Sams, Fortney, & Willenbring, 2006). EAA is an appropriate treatment for autism due to its improvement in many skills including language and communication (All et al., 1999; Freund et al., 2011; Gabriels et al., 2012; Keino et al., 2009) which is a common deficit of the disorder. Additionally, Sams et al. reported that children exhibited greater language and social skills in treatment including animals compared to standard occupational therapy (2006). Similarly, social skills improved including responsiveness to others (Bass 2009; Keino et al., 2009; Memishevikj and Hodzhikj, 2010) and social motivation (Bass et al., 2009).

Cognitive and emotional skills are also shown to improve for children with autism after participating in equine-assisted activities. Specifically, there is less distractibility and decreased inattention observed from increased engagement in EAA (Bass et al., 2009; Gabriels et al., 2012; Ward et al., 2013). The benefits also include decreasing the duration of time required for problem solving tasks (Borgi et al., 2015; Trzmiel, Purandare, Michalak, Zasadzka, & Pawlaczyk, 2019). These results are also demonstrated outside of lessons and generalized into community settings because parents reported their children following directions in multiple settings (Holm et al., 2014). In addition to the beneficial effects suggested by parents, children also report positive results in emotional skills such as improvement in self-esteem, mental well-being, quality of life (Schultz et al. 2007).

Gross motor skills, balance, and posture display significant improvement through equine-assisted activities (Ajzenman, Standeven, & Shurtleff, 2013). A horse's swaying movements during ambulation require a rider to demonstrate balance and strength. The rhythmic movement of the horse ultimately improves a rider's balance and coordination in addition to ultimately decreasing postural sway (Ajzenman, 2013).

There is also an improvement in self-care and adaptive behaviors displayed through equine-assisted activities which ultimately improve independence (Ajzenman, Standeven, & Shurtleff, 2013). Additionally, Koegel et al. reported that children with autism quickly learned the adaptive behaviors that were desired and decreased disruptive behaviors overall (2005). These behaviors have been generalized to multiple settings and demonstrate a strong carryover effect to participants' natural environments such as home and school (Holm et al., 2014; Koegel, Koegel, & Brookman, 2005).

There is currently limited research addressing the effects of equine-assisted therapy or animal-assisted therapy compared to the school system; however, the research that is available

supports the presence of an animal in treatment. For example, there are more social interactions and language used with an animal present in comparison to school system therapy due to actively participating in therapy (Sams et al., 2006). They further explained that children are more likely to “engage in a therapeutic activity when the reward is intrinsic to the activity itself” (Sams et al., 2006). For children with autism, this is especially true based on the biocentric view where an animal is a strong interest and motivator for them to engage (Sams et al., 2006).

## **Method**

This paper includes one case study with qualitative methods in order to discuss and understand the parent’s viewpoint of her child’s experiences and skill development during equine-assisted therapy in comparison to other forms of therapy they have utilized in the past.

## **Participants**

The participant in this study was a caregiver of a child enrolled in equine-assisted therapy in Leeds, Alabama. This program offers therapeutic riding and other equine-assisted activities in the form of one-on-one and group sessions in addition to riding and non-riding options based on the individual’s skill level. The participant was recruited via email and phone requests after the caregiver expressed that the equine-assisted program was more beneficial than other forms of therapy her child has participated in such as outpatient and school system.

## **Procedures**

Data was collected from a qualitative interview with open-ended questions focusing on the benefits and experiences of the child during lessons in the equine-assisted therapy program. Additionally, there was a focus on the specific skills which have improved during their time in the program as well as if these skills are generalizable to other environments. The caregiver was also asked about what other forms of therapy her child had participated in and what the effects were. The participant gave consent to record the interview while discussing the topics over the

phone. The interview was guided by specific prepared questions on the topics mentioned above but was also encouraged to expand from the conversation as long as it was on topic for the study. The recordings were transcribed verbatim. The researchers had no previous relationship with the participants.

### **Data Analysis**

The interview was transcribed verbatim and then sorted into categories of general benefits and skills gained from equine-assisted therapy, the child's specific diagnosis related to equine-assisted therapy, and the differences in benefits in equine-assisted therapy versus other forms of therapy the child participated in previously. This method is a content analysis which is a form qualitative analysis.

### **Results**

Due to limitations in participation, a single interview was conducted with the mother of The Red Barn participant. A thirty-minute interview was conducted, recorded and transcribed.

#### **Case one (J.V.)**

The child in case one is an eight-year-old child diagnosed with autism spectrum disorder. He presents with a gross and fine motor delay in addition to a sensory processing disorder. He initially came to participate in equine-assisted therapy to improve his gross and fine motor skills, motivation, attention, ability to follow directions, and behavior.

J.V. first became involved at The Red Barn attending a weekly social skills camp in the spring of 2018 and began group horseback riding lessons that summer. He continues to participate in individual riding lessons. Prior to J.V.'s involvement at The Red Barn, he had received both speech and occupational therapy in outpatient and school settings where he demonstrated improvement but had seemed to plateau. His mother credited some of his most notable improvements to his participation at The Red Barn. **Since beginning lessons, J.V.**

experienced a decrease in echolalia along with a significant growth in his verbal and conversational skills, gross motor function, balance, motivation, and confidence. All of these skills have been displayed not only during riding lessons but also at home and school.

J.V.'s mother attributed her son's success to a number of factors unique to The Red Barn and the services received there. The Red Barn was able to channel J.V.'s love of animals in a way that was more productive and relational in a natural and organic setting which is a refreshing change from the four walls of a clinic. He had no interest in kicking a soccer ball, but getting up on the horse was a way to engage his balance and motor skills in a way he had never been able to before. Before J.V. began his riding lessons, clumsiness and injury were a source of constant worry, but his mother now has "no concerns about balance." J.V.'s mother explained how the staff at The Red Barn sought to understand and serve her son (what she identified as "compassionate care") which facilitated his ability to build and experience new healthy relationships. She also explained how coming to The Red Barn (referencing both the drive to and experience on the property) benefits not only her son but their entire family because it provides a shared experience that is enjoyable, enriching, and peaceful.

## **Discussion**

Previous research has found that equine-assisted therapy has had positive effects on many different populations including autism spectrum disorder. Though there are other forms of therapy that can be beneficial for individuals with this disorder, there has been discussions on if equine-assisted therapy may be more helpful. From this case study, it was found that by the student participating in equine-assisted therapy, there were greater changes in his speech patterns. When he was in speech therapy, he plateaued in skills but being at The Red Barn increased his social skills and decreased his echolalia which is displayed by no longer remaining fixated on the same task for long periods of time or asking questions repeatedly. Additionally,



there have been improvements in muscle control, balance, and coordination from riding after beginning with low tone and uncoordinated movements which demonstrates the beneficial effects of a horse's rhythmic movements to improve gross motor skills.

These changes that have occurred in the case study may be due to an increase in motivation. It has been evidenced that a lot of children with autism spectrum disorder enjoy being around animals. This holds true with the participant in this case study. He enjoyed being around animals which increased his internal motivation for participation in therapy. This could explain why he has made great increases in skills by being at The Red Barn. Another reason for these increases could be due to the relationships he has built with the staff at The Red Barn and the comfort he feels from being there. The staff at The Red Barn worked to make the student feel that his needs were cared for, and this led to better outcomes.

Though other therapists in more traditional settings may have incorporated these techniques, this case study proves that sometimes being in a nontraditional setting gives a student more opportunity for improvement. The Red Barn has proved to be an effective service based on this case study, but more caregivers will need to be interviewed to create a more solid evidence base. More research also needs to be done to find the difference of student progression and improvement between traditional therapy and nontraditional therapy.

### **Limitations**

This case study only included one participant which is the primary limitation due to drop out by the second participant. Additionally, the participant came from a convenience sampling. This participant's child is eight years old which does not make the case study generalizable for all ages. Considering there is only one participant, this case study also only demonstrates the effects of equine-assisted therapy on a child with Autism Spectrum Disorder which does not illustrate generalizability across populations.

## **Conclusion**

Equine-assisted therapy appears to be an appropriate and effective treatment intervention for children with autism spectrum disorder to improve social, language, emotional, and gross motor skills overall based on the results of this case study. This intervention is most likely successful due to the active engagement of participants in therapy and harnessing intrinsic motivation of children which should be utilized further in the future. Combining specific interests of all children and especially in autism spectrum disorder increases volition which will give a greater probability of engagement in everyday activities and improvement in quality of life.

Future research on this topic needs to be performed with a larger sample. In order to truly display the effects of equine-assisted therapy in children with autism spectrum disorder compared to other forms of therapy, the children should be measured at baseline for equality measures before performing a randomized, controlled trial to verify the statistically significant differences.

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