

Equine Therapy Benefits for Autism Spectrum Disorders

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ABSTRACT: *Outcomes have varied in studies with Equine therapy (ET) among children with ASD (autism spectrum disorder). The hypotheses for this study included that Equine Therapy will have different benefit in boys compared to girls; this benefit would differ in older ASD children compared to younger ASD population. Also, children who were diagnosed at a younger age with ASD or had additional diagnoses besides ASD would be less likely to benefit from Equine Therapy (due to severity of their disorder). The benefits from Equine Therapy will be different in various domains of ASD and would be different depending on the Horse or Trainer used in Equine Therapy.*

Questionnaire was prepared which requested parents to rate their experiences and responses to questions pertaining to Equine therapy for their ASD children. There were 17 males and 6 females. The number of ASD children with age 6-20 year old is 10, 11-15 year old is 12 and 16-20 year old is 1. There were 21 out of 23 children with ASD diagnosis and 18 of these children were diagnosed with ASD before the age of 5 years. Out of 23 responses, 22 of the participants observed a benefit from before to after Equine therapy in their children. For the domains that benefitted in children from Equine therapy, benefit from "All domains" (speech, social, behavior, coordination) was seen in 7 children.

The study showed that most of these children liked Equine Therapy and about half of the parents expected their ASD children to like Equine therapy, reflecting an expectation of success with Equine therapy. Also, nearly all the parents of ASD children observed their children to benefit from before to after an Equine therapy session with most benefit seen in the domains of Speech and Social. This study would need to be replicated with a larger sample size to confirm these findings.

INTRODUCTION

Equine therapy (ET) is a type of therapy that uses horses to promote emotional growth. The basis of the therapy is that because horses behave in a similar fashion as human beings in their social and responsive behavior; it is always easy for patients to establish connection with the horse.

Equine therapies focus on the improvement of physical and functional status by using the rhythmic movement of the horse's gait to improve hip and trunk stability. Equine therapy involves mounting activities completed in the presence of a horse, including hippo therapy or therapeutic horseback riding as well as non-mounted activities like grooming and caring for the horse (Lentini, & Knox, 2015). Equine therapy as a physical therapy has shown in literature to be used for a number of neurologic conditions, including Multiple Sclerosis, stroke, spinal cord injury, traumatic

brain injury, and cerebral palsy. In meta-analyses of several studies, Selby found that out of 14 individual reports, nine showed significant positive outcomes on clients as a direct result of Equine therapy (Selby & Smith-Osborne, 2013). The reports that provided support for Equine therapy were studies focusing on clients with behavioral, psychological, physical, and psychosocial challenges with its positive effect on mood. The results of Selby's research clearly show that Equine therapy provides unique and effective opportunities for helping clients overcome physical and psychological obstacles.

On the other hand, outcomes have varied in studies with ET (equine therapy) among ASD (autism spectrum disorder) children. ASD is a developmental disorder where difficulties are observed in social, communication, stereotypical behavior domains. In a study by Borgi, effects of Equine-assisted therapy (EAT)'s on adaptive and executive functioning in children with autism spectrum disorder (ASD) was examined. Here, improvement was found in social domain along with minor improvement observed in motor and executive functioning (Kern et al., 2011).

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Similarly, Kern’s study found a reduction in the severity of autism symptoms with the therapeutic riding treatment among children with ASD (Borgi et al., 2016). There was a significant decrease after treatment at 3 months and 6 months of riding in severity of Autism as evident with CARS (Childhood Autism Rating Scale) scores. Also, there was a significant improvement found in Mood and muscle tone in these children after 3 months and 6 months of riding.

Some studies on Equine Therapy for children with Autism Spectrum Disorders have found improvement in the areas of communication, social skills or decreased problematic behaviors and stress though this has not been noted consistently (Srinivasan et al., 2018). Prior to our study, there have not been any studies conducted comparing differences in benefits from Equine Therapy with gender, age, if other comorbid diagnoses with ASD are present or with age when first diagnosed with ASD. We were interested in determining which areas of ASD benefitted the most from Equine therapy.

This study was conducted to find out the perception of parents of children with Autism spectrum disorders. Specifically, the study will help determine how parents of ASD children perceive the benefits of Equine Therapy in the areas of communication, social, behavior, movement or other domains. Also, it will determine if there are any differences due to age, gender and by age when first diagnosed with ASD in benefits observed from Equine therapy in ASD children.

The Hypothesis will include:

1. Equine Therapy will have different benefit in boys compared to girls in this study.
2. Benefit with Equine Therapy would differ in older ASD children compared to younger ASD population.
3. Also, children who were diagnosed at a younger age with ASD or had additional diagnoses besides ASD would be less likely to benefit from Equine Therapy (due to severity of their disorder).
4. The benefits from Equine Therapy will be different in Social and Behavior domains of ASD compared to other domains and different based on the Horse or Trainer used in Equine Therapy.

METHOD

A Questionnaire was prepared asking the parents to rate their experiences and responses to questions pertaining to

Equine therapy for their ASD children. This Questionnaire asked the parents to provide their child’s age group, gender, other medical diagnosis besides ASD and then respond to the rest of the questions. The responses will be rated from 1 to 5 which range from “not at all”, “very little” “somewhat” “quite a lot” to “very much” on a Likert scale. These responses will be collected anonymously and saved in a computer folder for further analyses.

Parents of children with ASD were selected from the pool of participants in the Equine Therapy program at a local non-profit organization. This population was randomly selected from a Questionnaire sent to all participants at this non-profit which was anonymously filled out by them online. When introduction was sent to participants, they were provided a brief summary of the purpose of this study. They were also informed about participation being voluntary and that the results will be stored anonymously. There was no identifying information collected about themselves or their child like their name, date of birth or address etc.

Participants were then requested to fill out a Questionnaire detailing their beliefs about responses for Equine Therapy on various domains for ASD children. There were no potential risks to the participants but benefits could include critical information about the possible benefits of Equine Therapy for children with ASD.

No identifying information like name, contact phone, email etc. were gathered and the results were kept confidential.

RESULTS

Data was analyzed by test between age groups versus benefits of ET, gender versus benefits of ET, other comorbid diagnoses besides ASD versus benefits of ET as well as age when first diagnosed with ASD in this study. There will also be a qualitative analysis of the results in this study (Tables 1 and 2).

There were a total of 17 males and 6 females in the study. The number of ASD children with age 6-10 year old is 10, 11-15 year old is 12 and 16-20 year old is 1. There were 21 out of 23 children with ASD diagnosis and out of these, 18 children were diagnosed with ASD before the age of 5 years. Also, 13 out of 23 children had other comorbid diagnoses besides ASD. These comorbid diagnoses in the 13 ASD children included ADHD in 4 children with 2 of these also

Table 1.
Age groups versus number of children with ASD.

6-10 year	11-15 year	16-20 year
12	10	1

Table 2.
Gender versus number of children with ASD.

Male	Female
17	6

having additional anxiety disorder. Further, there were two children with comorbid Mood disorder, two children with comorbid Anxiety disorder and one with Sleep disorder. Additionally, out of 13 ASD children, one child had genetic conditions of Fragile X and other had Williams’s syndrome.

There were 18 children who were diagnosed under the age of 5; with 8 of these children diagnosed before the age of 2

years. While 5 other children were diagnosed between the ages of 6-8 years of age. On the question of whether the children liked Equine therapy, 17 of the children liked it “very much” and 6 children were reported to like it “quite a lot” On the question about whether parents expected their child to like Equine therapy, 8 children responded “verymuch” while 4 others responded “quite a lot” (Figures 1 and 2).

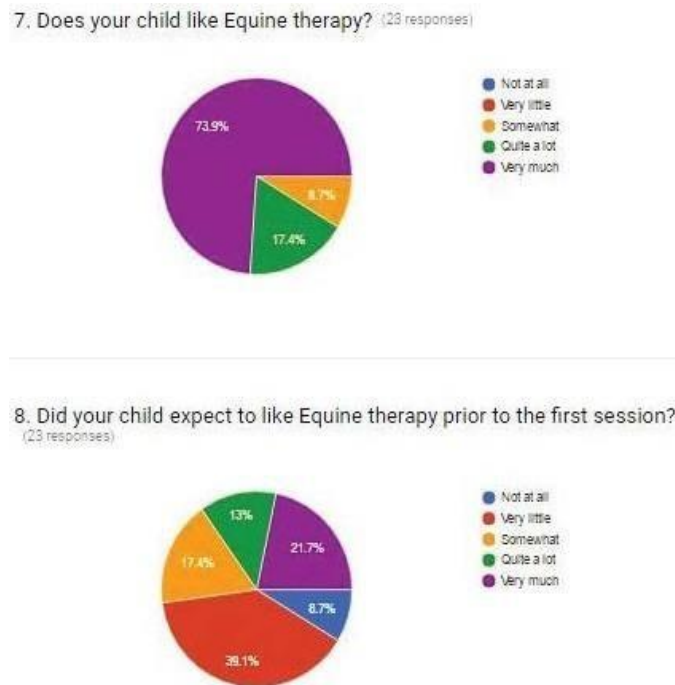


Figure 1.
Response to liking equine therapy and expectation to like equine therapy prior to 1st session.

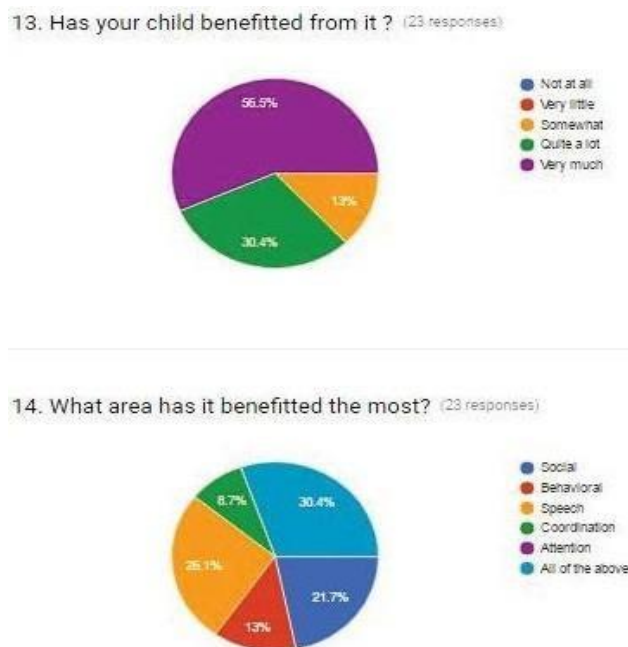


Figure 2.
Responses showing benefit from ET and areas where benefit from ET reported.

There were no differences found with change in the horse or riding instructor for Equine therapy response. There were 13 responses for benefitting “very much” from Equine therapy and 7 responses for benefitting “quite a lot”. Out of 23 responses, 22 of the participants observed a benefit from before to after Equine therapy in their children. For the domains that benefitted in children from Equine therapy, benefit from “All domains” (speech, social, behavior, coordination) was seen in 7 children, whereas “Speech” showed the next highest benefit in 6 children and “Social” showed the next highest benefit in 5 children.

For these 24 children with ASD, 15 had received therapy and 6 were on medications besides receiving Equine therapy.

DISCUSSION AND CONCLUSION

The study included nearly two third of the children as males with only one third as females with ASD; which reflects the gender difference in the general population of ASD. Majority of the sample was in the younger age group as they were under the age of 10 year. The study showed that most of these children liked Equine Therapy and about half of the parents expected their ASD children to like Equine therapy, it shows how there was an expectation of success with Equine therapy. Also, nearly all the parents of ASD children observed their children to benefit from before to after an Equine therapy session with most benefit seen in the domains of Speech, Social and combination of all domains (speech, social, behavior and coordination) of ASD. This is an important finding since it is reflective of an improvement noticed by parents in their ASD children immediately after an Equine therapy session. In addition, benefits were specifically observed in both speech and social domains of ASD which suggests a positive outcome with Equine therapy in these children.

There were no differences observed with change in the horse or riding instructor for Equine therapy sessions. This was an important factor to consider to rule out any specific horse or a trainer assisting ASD children greatly with their techniques compared to other horses or trainers. Since there were no differences found, this helps make the results unbiased. Although the results in this study are based on a small sample size, they do show benefits of Equine therapy with ASD children, especially for speech and social domains. However, these results need to be replicated in a larger sample of ASD children while comparing their benefits from Equine therapy with normally developing children.

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