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# Therapeutic Riding and Children with Autism Spectrum Disorder: A Program Evaluation

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ThERAPEUTIC RIDING AND CHILDREN WITH AUTISM SPECTRUM  
DISORDER: A PROGRAM EVALUATION

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A Thesis  
Presented to  
the Graduate School of  
Clemson University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
Parks, Recreation, and Tourism Management

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by  
Brenna Jeanne Goodwin  
December 2015

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Accepted by:  
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Dr. Stephen Lewis

## ABSTRACT

Therapeutic riding is a commonly used therapeutic approach for children with Autism Spectrum Disorder (ASD). Research supports therapeutic riding for children with ASD; however, the effect of specific sub-types of therapeutic riding (e.g., therapeutic riding drill team) has been under investigated. Furthermore, the role of self-efficacy and other programmatic components (e.g., interaction with horses, interaction with other participants, etc.) of therapeutic riding programs have not been studied, especially among children with ASD. This study evaluated a therapeutic riding drill team for children with ASD to determine if and to what extent self-efficacy and other program components were present. Three forms of data were collected including a retrospective Important Performance Analysis (IPA), satisfaction questionnaire, and interviews with the participants and their caregiver. The results showed high performance on the retrospective IPA, high satisfaction on the program components, and indicators of the presence of self-efficacy among participants in the therapeutic riding program. This information may be used by recreational therapists in therapeutic riding programs to target aspects of self-efficacy and other program components serving children with ASD.

## DEDICATION

I would like to dedicate this thesis to my parents, Steve and Pam Goodwin, who have supported me whole-heartedly throughout my life. If it weren't for you two telling me, "Do what makes you happy, it's your life, no one else's," I would not be where I am today. Thanks for always listening to me and laughing, crying, and stressing with me along the way. You two are my best friends and I love you.

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## CHAPTER ONE

### INTRODUCTION

Autism Spectrum Disorder (ASD) has become widely researched over the past years. Individuals with ASD may have deficits in social communication, social interaction, sensory input, and maintaining relationships (American Psychiatric Association, 2013). These individuals may have strengths such as above-average memory, a visual learning style, and learn concrete tasks easily (MacKenzie, 2008). Therapies for individuals with ASD include social skills training, applied behavior analysis, pharmaceuticals and therapeutic riding. Some families limit or reject giving pharmaceuticals to their child with ASD and seek other therapies. Therapeutic riding uses a horse in the therapy setting and is used to improve motor skills, social skills, and mental health (Rothe et al., 2005). Instead of a typical treatment setting such as a therapist's office, therapeutic riding provides treatment that challenges the client to learn in a unique setting with the horse and other riders.

There are many therapeutic techniques that can be performed with a horse such as riding, grooming, feeding, and communicating with the therapist while near the horse. Therapeutic outcomes include improved self-esteem, independence, and trust (Rothe et al., 2005) along with gross motor skill improvement (Hawkins, Ryan, Cory & Donaldson, 2014). Since horses tend to react to behaviors of the rider, participants' interactions with a horse can cause the participant to realize the effects of their actions (Rothe et al., 2005).

Therapeutic riding is commonly associated with equine assisted therapy and the two terms are sometimes used interchangeably; however, there are distinctions between

these therapeutic approaches. Therapeutic riding and equine assisted therapy (EAT) are sub-categories of equine assisted activities and therapies. EAT focuses on rehabilitation while therapeutic riding is “an equine-assisted activity for the purpose of contributing positively to the cognitive, physical, emotional and social well-being of individuals with special needs” (PATH, 2015). Given the overlap between these two approaches, research including EAT and therapeutic riding has been included in the literature below.

Therapeutic riding can help an individual in many ways. First, the individual may improve his or her gross motor skills during treatment. This therapy requires the use of gross motor skills while riding the horse and performing other activities on and off the horse, which can lead to an increase in body strength and agility (Hawkins, Ryan, Cory, & Donaldson, 2014). Next, a horse may provide feedback for someone who is not assertive. In therapeutic riding, the individual must assert himself/herself or the horse will not respond to the rider’s input. This assertion may lead to an increase in the participant’s confidence, causing them to be more self-assured (Rothe et al., 2005). Research has also shown social skills may be increased in children with behavioral disorders through therapeutic riding such as improved communication, social interaction, and overall compassion for their peers after equine assisted therapy (Trotter, Chandler, Goodwin-Bond, & Casey, 2008). Although most therapeutic riding and EAT research has been performed with individuals with developmental or intellectual disabilities, little research has been performed with individuals with ASD.

The existing literature on therapeutic riding and equine assisted therapy with individuals with ASD support outcomes that include improved communication and social

deficits. One study found a significant increase in social responsiveness, social interaction and verbal communication after 12 weeks in an equine assisted therapy program for children with ASD (Bass, Duchowny, & Llabre, 2009). In another study, four children displayed an increase in communication and sociability after 10 weeks in an equine assisted therapy program (Memishevikj & Hodzhikj, 2010). The findings from these studies support that children with ASD could benefit from therapeutic riding. However, the effects of a more specific therapeutic riding program, such as therapeutic riding drill team, are not known.

### **Purpose Statement and Research Questions**

Program evaluation is used to assess a program's components and determine what modifications should be made, if any, and what progress is being made towards goals (Dunsworth & Billings, 2011). This study evaluated a therapeutic riding program, specifically a therapeutic riding drill team, with children with ASD. It also determined if self-efficacy was present during the program, and to what extent, among children with ASD on the therapeutic riding drill team. More, specifically, this study answered the following research questions:

*Primary Research Question 1:* To what extent do self-efficacy and other program components exist in the therapeutic riding drill team program?

*Quantitative Question 1:* Which program components of the therapeutic riding drill team program are important to caregivers of participants with ASD?

*Quantitative Question 2:* How well does the therapeutic riding drill team program perform on program components, as determined by the caregivers of participants with ASD?

*Quantitative Question 3:* How satisfied are the participants with ASD with components of the program?

*Qualitative Question 1:* What aspects of self-efficacy were present among participants in the therapeutic riding drill team program, if at all?

## CHAPTER TWO

### LITERATURE REVIEW

#### **History and Explanation of Autism Spectrum Disorder**

Autism Spectrum Disorder or ASD, has been perplexing to scientists and the general public for many years. While the exact cause of ASD is unknown today, research has made progress in narrowing down the causes. Early research posited poor parenting as the cause of ASD; however, this notion was soon dismissed (Lubetsky, Handen, & McGonigle, 2011). Another popular theorized reason for ASD was childhood vaccines, particularly the Measles, Mumps, and Rubella vaccine (McGuinness & Lewis, 2010). However, the primary study for this claim was later discredited and several studies have shown no link to the vaccine and ASD (McGuinness & Lewis, 2010). Recently, there has been a focus on genomic research that considers ASD a genetic disorder (Davidson & Orsini, 2013).

The Diagnostic Statistical Manual of Mental Disorders, 5<sup>th</sup> edition (2013) states that the criterion for ASD includes deficits in: (a) social communication; (b) social interaction; (c) maintaining relationships; (d) repetitive patterns; and (e) sensory input. Deficits in social interaction may include difficulty in expressing and interpreting social skills such as body language and facial expressions. Deficits in communication relate to the individual having difficulty communicating with others in an age appropriate manner. Sensory input commonly refers to an overstimulation of the senses, which can cause discomfort in loud or crowded areas. Additionally, these symptoms cause significant impairment to the individual's life (American Psychiatric Association, 2013). Common

strengths among individuals with ASD may include notable memory and a visual learning style (MacKenzie, 2008). If a child with ASD is interested in a topic, they may put forth more effort, which can lead to an above-average memory in this area. Children with ASD typically have a visual learning style which may add to the increased memory (MacKenzie, 2008).

### **Treatment and Therapies for Autism Spectrum Disorder**

Although individuals with ASD may have deficits in some areas, there are treatments and therapies that allow these individuals to lead fulfilling lives. Commonly recognized therapies for ASD include social skills training, applied behavior analysis, pharmaceuticals and animal assisted therapy. Social skills training is used to teach individuals social skills in all areas of life such as developing relationships. If someone has limited social skills, it may be hard for that individual to form relationships due to fear of rejection or inappropriate social interactions (Smith, Lochman, & Daunic, 2005).

Applied behavior analysis (ABA) is the training of new actions or behaviors to replace inappropriate behaviors (Hollister Sandberg & Spritz, 2013). A therapist who is trained in ABA works closely with the individual to reinforce appropriate behaviors and correct inappropriate behaviors that can be attention seeking or aggressive. The therapist specifically identifies triggers that cause inappropriate behaviors to better understand the individual. Once these triggers are identified, the therapist redirects behaviors caused by the triggers. This can eventually lead to the individual acting more appropriate towards the triggers. ABA is most effective when therapy is started at a young age with early

intervention programs (Hollister Sandberg & Spritz, 2013). Although ABA may help an individual with ASD, some may turn to pharmaceuticals.

Pharmaceuticals continue to be widely used to manage the symptoms of ASD. The most commonly used pharmaceuticals are antidepressants, antipsychotics, and stimulants (Hollister Sandberg & Spritz, 2013). Antidepressants typically treat aggression, irritability, and depression in individuals with ASD. Antipsychotics are used to treat hyperactivity, aggression, and self-harming behaviors in individuals with ASD (Hollister Sandberg & Spritz, 2013). Stimulants are used to decrease hyperactivity and impulsivity along with improve attention span in individuals with ASD (Hollister Sandberg & Spritz, 2013). Although pharmaceuticals may help with the management of ASD symptoms, there can be adverse effects, such as weight gain, sedation, and decreased motivation (Posey, Stigler, Erickson, & Mcdougle, 2008). Therefore, some parents may not feel comfortable giving their child with ASD pharmaceuticals and therefore, may seek other therapies such as animal-assisted therapy.

### **Animal-assisted therapy**

Animal-assisted therapy (AAT) uses animals as a therapeutic tool implemented by a qualified therapist using a goal driven, outcome-oriented approach. AAT can have several benefits for the client. Research supports that animal-assisted therapy can lower anxiety and hyper arousal, help form attachments, and allow the client to feel more comfortable communicating with the health professional (Kruger & Serpell, 2006). Animal-assisted therapists typically use canines and horses, but can also include cats, rabbits, and dolphins.

Although there are many types of animal-assisted therapy, canine therapy is the most widely used (Jalongo, 2005). For example, a study by Viau, Arsenault-Lapierre, Fecteau, Champagne, Walker, and Lupien (2010) supported the use of therapy dogs to reduce stress and negative behaviors in children with ASD. This study measured cortisol levels in children with ASD before introduction of a therapy dog; during the therapy dog's stay, and after the therapy dog was removed from the home. Results indicated a significant decrease in cortisol in children once the therapy dog was introduced to the home. After the therapy dog was removed from the home, the children's cortisol levels increased significantly, although not as high as prior to the therapy dog's introduction. Additionally, through questionnaires, parents reported decrease in self-stimulating behaviors, repetitive behaviors, and outbursts in their children.

Another study performed by Solomon (2010) had therapy dogs visit the homes of children with ASD to increase social interaction with the child with ASD and other members of the family. Two case studies were reported. The first had therapy dogs visit a family with a child with ASD once a week. This child showed an increase in interaction with family members and attentiveness. The second case followed a child with ASD that received a therapy dog full-time. This child showed an increase in interaction with family members.

### **Therapeutic Riding**

Although canine therapy may be the most common animal assisted therapy, therapeutic riding is a growing field for children with ASD. Therapeutic riding can benefit a client in several ways. A horse's body mimics human biomechanics which can



increase balance in one's body (Scott, 2005). Hand-eye coordination can be improved while performing tasks on the horse, such as placing a plastic ring around a bar while riding the horse. Furthermore, a rider must learn to multitask to complete activities. A rider is constantly performing multiple tasks such as holding the reins, balancing their body, directing the horse and performing activities (Scott, 2005). Therapeutic riding has also been shown to increase client's self-esteem, improve social skills, and decrease impulsivity (Kesner & Steven, 2011). It can also help clients develop patience since working with a large animal can be challenging at times (Kesner & Steven, 2011).

To be considered therapeutic riding, the session must be lead by a certified instructor. One organization that has four levels of certification is the Professional Association of Therapeutic Horsemanship (PATH). To obtain certification, instructors must take training classes, teach under a PATH certified instructor for 25 hours, attend an on-site workshop, and gain experience in horsemanship skills (PATH, 2015). PATH certification is an indication that the instructor possesses the knowledge and skills to provide horsemanship skills training to individuals with disabilities.

### **Equine Therapies and Children with ASD**

Therapeutic riding has been used to increase the social functioning, gross motor skills, and communication in children with ASD (Bass et al., 2009). In a study by Bass, Duchowny, and Llabre (2009), 19 children with ASD participated in twelve weeks of therapeutic horseback riding consisting of physical exercise on a horse, games while on the horse, and activities to increase riding skills and horsemanship. There was an increase in sensory development, attentiveness, and social motivation after the program.

Additionally, a study by Gabriels, Agnew, Holt, Shoffner, Zhaoxing, Ruzzano, Clayton and Mesibov (2012) included 42 children ages 6-16 with ASD who participated in 10 weeks of therapeutic riding. Results supported that the children exhibited increases in self-regulation and communication.

A study by Holm, Baird, Kim, Rajora, D'Silva, Podolinsky, and Minshew (2014) included three boys with ASD ages 6-8 who participated in differing amounts of therapeutic riding each week for 12 weeks total. Results supported that target behaviors, such as verbal communication, improved during and after the study.

A study by Lanning, Baier, Ivey-Hatz, Krenek, and Tubbs (2014) included 25 children with ASD in an equine assisted activities program for 12 weeks. Thirteen of the children participated in the equine assisted activities group while 12 children participated in a non-equine comparison group. After 12 weeks, both groups showed an increase in physical, emotional, and social functioning; however, children in the equine assisted activities group showed a greater improvement.

One study by Memishevikj and Hodzhikj (2010) included four children with ASD who participated in a 10-week equine assisted therapy program. The children met once a week for a therapy session that focused on forming a bond with the horse through grooming along with horsemanship skills. After the 10 weeks, the children showed an increase in overall communication and sociability.

Furthermore, a study by Hawkins, Ryan, Cory, and Donaldson (2014) included two children with ASD participating in a 15-session equine assisted therapy program. The children met three times a week for five weeks for a therapy session that focused on

gross motor movements and horsemanship skills. By the end of the study, both children saw a significant increase in coordination and gross motor skills, specifically strength and agility.

### **Social Cognitive Theory**

Although not specifically mentioned in the research literature, AAT, including therapeutic riding, can be structured around the theoretical framework of social cognitive theory. Social cognitive theory (SCT) is the concept that several factors affect a person's morals, judgment, decisions and actions (Bandura, 1989). These factors are environmental, behavioral, and personal which affect each other in a reciprocal manner. SCT has three main components; outcome expectancy, self-regulation, and self-efficacy (Bandura, 1989).

**Outcome expectancy.** Outcome expectancy is performing an activity with the expectation of yielding positive or negative outcomes. A person determines what type of outcome they believe an activity will have (Wise, 2002). A person is more likely to attempt an activity when they expect a positive outcome (Wise, 2002). In therapeutic riding, an individual is more likely to try leading the horse when they believe they can do this properly.

**Self-regulation.** Individuals control their experiences through a process called self-regulation. A person processes information from the environment after they perform an activity. From that feedback, they will judge how they performed based on standards they have for themselves. Evaluation of their own performance is based upon their personal judgment. Each person has different goals for themselves and therefore, self-

regulation is different for every person. Self-regulation can lead to increased self-efficacy if an individual meets or exceeds their own expectations (Wise, 2002). For instance, if a person sets a goal to practice an equine drill team performance with only minor mistakes and they succeed, their self-efficacy may increase. The individual evaluated his or her own performance after setting a tangible goal.

**Self-Efficacy.** A main element of social cognitive theory is self-efficacy. Self-efficacy is a person's belief of what he or she can and cannot accomplish along with the skillset he or she may have. A person must have the skillset and belief that they can accomplish a goal in order to do so (Bandura, 1997). If a person has high self-efficacy they will have more confidence in their skills. Likewise, if a person has low self-efficacy, they may not believe they can perform certain tasks (Bandura, 1997). Self-efficacy also relates to the motivation one has to approach a challenge. How likely a person believes they can conquer a situation relates to how likely they are to take on challenges. Due to the challenges one chooses to face, their life can ultimately be shaped by their level of self-efficacy (Bandura, 2001). Typically, a person will attempt a new task if it requires a personal strength they have. They will not try a new activity if it requires a strength they lack. When a person has high self-efficacy, they are said to be efficacious (Wise, 2002). For example, a person who has experience with horses may be more likely to lead a horse through an obstacle course. However, an individual with no experience with horses may be less likely to lead a horse. Whether or not the individual has strength in working with horses affects his or her likelihood to try the activity and therefore, self-efficacy.

There are four aspects of self-efficacy, including mastery experiences, vicarious experiences, verbal persuasion, and physiological signs. Mastery experience is the act of someone performing an activity; thus, demonstrating a person's capabilities (Kruger & Serpell, 2006). Mastery experience gives the most authentic indication of self-efficacy because it provides immediate feedback. If a person performs an activity well, their self-efficacy will increase. However, if they do not perform the activity well, their self-efficacy will decrease (Bandura, 1997). In the therapeutic riding drill team, the team will perform the drill in front of an audience. The children may not believe they can perform in public, however, after many practices, the team may perform and succeed. By finishing the performance, something they originally thought could not be done; the children may experience an increase in self-efficacy.

Vicarious experience is the next aspect of self-efficacy. Vicarious experiences are similar to modeling except a peer typically performs the task first. Vicarious experiences allows the individual to compare their abilities to those of their peers which can affect self-efficacy (Bandura, 1997). By watching a peer attempt something new, a person may believe they can accomplish the same things as the first person. However, if watching a person who does not do well, the self-efficacy of the observer may decrease (Wise, 2002). Therapeutic riding drill team is performed in a group setting, therefore, if a child is afraid to attempt an activity such as riding the horse, and sees another child do this, they may feel more confident about performing the activity. Also, children may learn appropriate social interactions from the horses. Animals can interpret people's actions and react to their personality to give the person immediate feedback. If a child is being

too forceful with commands to a horse, the horse may not respond to the child until the child changes their tone of voice. This immediate feedback can help the client realize how their social interactions affect others (Kruger & Serpell, 2006).

Another aspect of self-efficacy is verbal persuasion statements. This is specific and directed encouragement from someone more experienced. Additionally, it is important that verbal persuasion be realistic. If the encouragement is unrealistic and the person fails at the task, this could be damaging to their self-efficacy (Bandura, 1997). If realistic, words of encouragement could increase someone's self-efficacy so they believe they can do the activity also. In therapeutic riding drill team, having the instructor encourage the child could lead to an increase in self-efficacy. Also, the instructor can aid in the processing of the client's emotions during the session. Processing emotions is an important skill that could increase self-efficacy in the child.

Lastly, interpretation of physiological signs is an aspect of self-efficacy. Physiological signs are autonomic nervous system responses to stressors, such as shaking, sweating, or rapid heartbeat. It is important for the therapist to process these signs and what they mean. Processing these physiological signs can lead to an increase or decrease in self-efficacy (Wise, 2002).

Although limited, research studying the effects of therapeutic riding with children with ASD is supportive of the benefits of the therapeutic approach. Research shows increases in social or communication skills, self-regulation and gross motor skills. In practice, specific therapeutic riding approaches are used to target specific deficits in children with ASD. In addition, no literature exists to link SCT to the development of

therapeutic riding programs. Research is needed to examine the effects of specific therapeutic riding approaches to support and refine the therapeutic riding practice. Furthermore, there is no research determining if the aspects of self-efficacy are present in a therapeutic riding program for children with ASD. Additional research is needed to determine if aspects of self-efficacy are present among participants with ASD in a therapeutic riding program.

## CHAPTER THREE

### METHODS

The research in this thesis was performed upon approval from Clemson University's Institutional Review Board. Multiple research methods were used to evaluate a therapeutic riding program. This design was used by collecting quantitative data to evaluate the program and separately collecting qualitative data to determine if self-efficacy was present in the program. This study collected all data on the last day of the therapeutic riding drill team program. A satisfaction questionnaire was given to participants to rate their overall satisfaction with the program along with a retrospective importance performance analysis (IPA), which was completed by the caregivers. Additionally, qualitative data from interviews were used to determine if there was a presence of self-efficacy among participants in the therapeutic riding drill team program.

#### **Setting**

The therapeutic riding drill team program took place at Clemson University's Equine Center, which houses the Clemson Equine Assisted Therapy program (CLEAT), and was lead by a PATH certified instructor, Meredith Donaldson. Meredith is employed by Clemson University and leads the CLEAT program along with various other equine programs. The therapeutic riding drill team program was a new concept started by Meredith and there is currently no literature on the evaluation of this type of program. The therapeutic riding drill team consisted of a group of participants riding horses and leading them through synchronized movements set to music (Davis, 2008). Each participant had one volunteer that acted as a side walker during the sessions to ensure



safety and assist with learning the movements. All sessions were outside, lasted approximately 1½ hours, and took place once a week for 16 weeks pending safe weather. At the last session, participants took part in a therapeutic riding drill team performance for friends and family.

### **Participants**

Four children ages seven to 11 participated in the therapeutic riding drill team and this study. Some children and caregivers were recruited by another program for children with ASD, TOPS Soccer, while others were recruited by word-of-mouth via caregivers who knew each other previously. Caregivers completed The Childhood Autism Rating Scale (CARS) (see Appendix A for the CARS) to provide information on the severity of ASD symptoms and behaviors; in addition to completing a demographic information form (see Appendix B for demographic information form).

### **Procedure**

Three types of program evaluation data were gathered: interviews with participants and caregivers, a satisfaction questionnaire performed by the participants, and a retrospective IPA performed by the caregivers. Qualitative data was collected through semi-structured interviews with the participants and one caregiver for each participant (see Appendix E for the interview questions). The focus of the interviews was to determine if aspects of self-efficacy were present in the therapeutic riding drill team. The interviews took place during the last week of the intervention, week 16. Four participants were interviewed along with one caregiver for each participant (i.e., eight interviews total). Questions specifically focused on the four parts of self-efficacy such as

mastery experiences (e.g. “Can you think of examples of your child accomplishing something in the therapeutic riding drill team they didn’t think they could?”), vicarious experiences (e.g. “Did your child try something after watching another child perform it first?”), verbal persuasion (e.g. “What feedback did the instructor give your child?”), and physiological signs (e.g. Did your child show any signs of nervousness before and/or after the program sessions?). The children were asked similar questions that were appropriate for their cognitive level. The children’s questions were also specifically focused around the four parts of self-efficacy such as mastery experiences (e.g. “What new things did you try at the therapeutic riding drill team?”), vicarious experiences (e.g. “Was it helpful to watch other kids do hard things first?”), verbal persuasion (e.g. “Did the instructor help you in any way?”), physiological signs (e.g. “Did you get nervous while at the therapeutic riding drill team?”).

Participants completed the satisfaction questionnaire during the last week of the program (see Appendix C for the satisfaction questionnaire). The PATH instructor chose what components were on the satisfaction questionnaire based on areas included in the program to be therapeutic and/or enjoyable for the participants. Participants were asked to rate components of the therapeutic riding drill team on a three point Likert scale with a corresponding emoticon and picture of the component to help the child understand the question. A score of one was “did not like it” with an emoticon with a frown. A score of two was “whatever (neutral)” with an emoticon with neither a frown nor smile. A score of three was “liked it” with an emoticon with a smile. The researcher read questions to the participants to address the participants’ difficulties with reading.

Caregivers completed a retrospective IPA based on components of the therapeutic riding drill team program (see Appendix D for IPA). The PATH instructor and researcher discussed and chose the components based on what areas the instructor sought evaluations and what areas she believed caregivers would view as important. An IPA is a technique used to determine what components of a program are important to participants and how well the program performed for these components (Martilla & James, 1977). The evaluation information was collected retrospectively, meaning the IPA was completed at the last session and caregivers were asked to reflect back to before they began the program to determine the importance of components (Sibthorp, Paisley, Gookin, & Ward, 2007). The caregivers then rated components based performance during the program (Martilla & James, 1977).

### **Data Analysis**

Analysis of the interview data began with the researcher transcribing the audio-recorded interviews. Next, the researcher completed a directed content analysis. This deductive approach is used in studies that have a validated theory to determine a relationship between variables (Hsieh & Shannon, 2005). When coding, predetermined labels were used and words were highlighted based on the code that fits in the labels regarding self-efficacy. These predetermined labels were the four aspects of self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological signs (Hsieh & Shannon, 2005). Once categories were established, the researcher had a peer review the interview transcripts for reliability, which refers to the agreement of the two coders when analyzing the data (Creswell & Plano Clark, 2011).

The peer was given the explanation of the categories used along with a chart (see Appendix F). The chart was divided into each label of self-efficacy and how many codes the researcher determined were a fit into each label. The peer reviewer placed a tally mark in the corresponding table if he agreed with the researchers decision. The number of times the peer review agreed with the researcher was used to determine Cohen's Kappa (i.e. percentage agreement).

The satisfaction questionnaire was compiled using components of the program designed to benefit the participants. Calculation of satisfaction scores consisted of taking the mean of the scores for each item on the five questionnaires to give the average satisfaction score for each item. An overall mean was then calculated from the individual averages. This information helped understand participant satisfaction with various components of the program.

Once the caregivers completed the retrospective IPA, the researcher determined the mean scores for each pair of importance and performance traits. These traits were then plotted on a two dimensional scatterplot using SPSS with importance on the Y-axis and performance on the X-axis. The upper left quadrant was labeled "concentrate here" and has areas marked as high importance and low performance. The top right quadrant was labeled "keep up the good work" and includes traits that are high in importance and high in performance. The bottom left quadrant was labeled "low priority" and includes traits that are low in importance and low in performance. The bottom right quadrant was labeled "possible overkill" and includes traits of low importance but high performance

(Kennedy, 1986). The IPA graph gave the researcher and CLEAT program visible feedback on what the program should work on and what is going well.

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## CHAPTER FOUR

### ARTICLE

#### **Abstract**

Research supports therapeutic riding for children with Autism Spectrum Disorder (ASD), however, the effect of specific sub-types of therapeutic riding (e.g., therapeutic riding drill team) has been under investigated. Furthermore, the underlying theories supporting therapeutic riding programs have not been well supported, especially among children with ASD. This study used qualitative data from interviews to determine if Bandura's aspects of self-efficacy were present among participants in a therapeutic riding drill team program. Results provided evidence of the presence of self-efficacy among participants during the program. Results of this study may be used by recreational therapists to target the aspects of self-efficacy in therapeutic programs for children with ASD as a way to increase self-efficacy.

## **Introduction and Literature Review**

Individuals with Autism Spectrum Disorder (ASD) may have deficits in: (a) social communication; (b) social interaction; (c) maintaining relationships; (d) repetitive patterns such as self-stimulating behaviors; and (e) sensory input (American Psychiatric Association, 2013). Although individuals with ASD may have deficits in these areas, many treatments and therapies have been developed to assist these individuals with leading fulfilling lives. Commonly recognized therapies for ASD include social skills training (Smith, Lochman, & Daunic, 2005), applied behavior analysis (Hollister Sandberg & Spritz, 2013), and pharmaceuticals (Posey, Stigler, Erickson, & Mcdougale, 2008). Some parents may not feel comfortable giving their child with ASD pharmaceuticals and therefore, may seek other therapies such as therapeutic riding services. Therapeutic riding is an approach that recreational therapists can use in their programs for children with ASD.

### **Therapeutic Riding**

Therapeutic riding is a growing therapeutic approach for children with ASD. Therapeutic riding is commonly associated with equine assisted therapy and the two terms are sometimes used interchangeably; however, there are distinctions between these therapeutic approaches. Therapeutic riding and equine assisted therapy (EAT) are sub-categories of equine assisted activities and therapies. EAT focuses on rehabilitation while therapeutic riding is “an equine-assisted activity for the purpose of contributing positively to the cognitive, physical, emotional and social well-being of individuals with special needs” (PATH, 2015). Previous research with equine therapies, including

therapeutic riding and EAT with children with ASD, has reported increased social functioning, communication (Bass, Duchowny, & Llabre, 2009), self-regulation (Gabriels et al., 2012), sociability (Memishevikj & Hodzhikj, 2010), gross motor skills (Hawkins, Ryan, Cory, & Donaldson, 2014), core strength and coordination (Holm et al., 2014), and overall quality of life (Lanning, Baier, Ivey-Hatz, Krenek, & Tubbs, 2014).

### **Theoretical Foundation**

The research on therapeutic riding programs is often atheoretical. Integrating theory into recreational therapy practice can greatly inform program design and effectiveness (Birckmayer & Weiss, 2000). Additionally, understanding a theory that is used to build a program can give the recreational therapist a greater depth of knowledge of the implementation, identify possible program outcomes, and can guide program evaluation (Birckmayer & Weiss, 2000). Although this lack of clarity exists, therapeutic riding and EAT may be structured around the theoretical framework of self-efficacy (Bandura, 1989). Many aspects of therapeutic riding and EAT conceptually support self-efficacy building.

Self-efficacy is someone’s belief of their capabilities to accomplish a task along with the skillset they may have. A person must have the skillset and belief that they can accomplish a goal in order to do so (Bandura, 1997). According to Bandura, four aspects of self-efficacy include mastery experiences, vicarious experiences, verbal persuasion, and physiological signs. Table 1.1 explains the aspects of self-efficacy.

Table 1.1	
<i>Explanation of aspects of self-efficacy</i>	
Aspect	Meaning

Mastery experiences	The act of someone performing an activity thus, demonstrating his or her capabilities (Kruger & Serpell, 2006).
Vicarious experiences	Similar to modeling by watching a peer perform an activity first (Bandura, 1997).
Verbal persuasion	Specific and directed feedback from someone more experienced (Bandura, 1997).
Physiological signs	Autonomic nervous responses to stressors (Wise, 2002).

We hypothesized that the four aspects of self-efficacy may be evident in therapeutic riding programs. In therapeutic riding, an individual may perform new activities such as riding a horse, leading the horse, and performing activities on the horse. These experiences may increase mastery experiences through providing opportunities to learn and master new horsemanship skills. Additionally, therapeutic riding is commonly performed with a small group of children, hence, watching their peers perform an activity before attempting themselves could promote vicarious experiences. By encouraging the child, the therapeutic riding instructor or the other participant's may affect one's self-efficacy via verbal persuasion. Lastly, if a therapist comments on physiological signs in the individual and processes these signs with them, the individual's self-efficacy could be affected.

Although it seems likely that self-efficacy might explain some of the success of therapeutic riding, no research has made a link between self-efficacy to the development and evaluation of therapeutic riding programs. To address this gap in research, this study

determined if and to what extent self-efficacy was present among participants in a therapeutic riding drill team program.

### **Methods**

The university's Institutional Review Board approved this research. Qualitative interviews were employed to determine if aspects of self-efficacy were present in a therapeutic riding drill team program and determine if the theory of self-efficacy is applicable in therapeutic riding. Interviews were performed with participants and caregivers on the last day of the therapeutic riding drill team program. This study addressed the following research question: What aspects of self-efficacy were present among participants in the therapeutic riding drill team program, if at all?

### **Setting**

The therapeutic riding drill team program took place at a university equine center, which houses an equine assisted therapy program, and was lead by a PATH certified instructor. All sessions took place outdoors in a riding arena over the course of 16 weeks.

### **Intervention**

The therapeutic riding drill team consisted of participants in pairs riding horses and leading them through synchronized movements with their partner set to music (Davis, 2008). Each participant had one volunteer who acted as a side walker during the sessions to ensure safety and assist with the drill team movements. Each session took place once a week for approximately 1½ hours (unless cancelled due to inclement weather). At the final session, participants took part in a therapeutic riding drill team performance for friends and family.

## **Participants**

Four children ages seven to 11 participated in the therapeutic riding drill team and all participated in this study. Some children and caregivers were recruited by another recreational program for children with ASD, while others were recruited by word-of-mouth via caregivers who knew each other previously.

## **Measures**

The Childhood Autism Rating Scale (CARS) was used to determine severity of Autism in the participants. A demographic information form was also used and included questions such as age of participants, other therapies the participant was in, medications, and medication changes. Additionally, interviews with questions regarding the four aspects of self-efficacy were performed at the last session.

## **Procedure**

Each caregiver completed the CARS to provide information on the severity of ASD symptoms and behaviors in addition to completing a demographic information form. The CARS was completed at the first session and demographic information was completed at the last session. Qualitative data was collected through semi-structured interviews with the participants and one caregiver for each participant. The focus of the interviews was to determine if aspects of self-efficacy were present in participants in the therapeutic riding drill team. The interviews took place during the last week of the intervention, week 16. Four participants were interviewed along with one caregiver for each participant (i.e., eight interviews total). Examples of questions used for caregivers are in table 1.2. Examples of questions used for participants are in table 1.3.

Table 1.2	
<i>Example of interview questions for caregivers</i>	
Aspect of self-efficacy	Question
Mastery experiences	“Can you think of examples of your child accomplishing something in the therapeutic riding drill team they didn’t think they could?”
Vicarious experiences	“Did your child try something new after watching another child perform it first?”
Verbal persuasion	“What feedback did the instructor give your child?”
Physiological signs	“Did your child show any signs of nervousness before and/or after the program sessions?”

Table 1.3	
<i>Example of interview questions for participants</i>	
Aspect of self-efficacy	Question
Mastery experiences	“What new things did you try at the therapeutic riding drill team?”
Vicarious experiences	“Was it helpful to watch other kids do hard things first?”
Verbal persuasion	“Did the instructor help you in any way?”
Physiological signs	“Did you get nervous while at the therapeutic riding drill team?”

### **Data Analysis**

Analysis of the interview data began with the researcher transcribing the audio-recorded interviews. Next, the researcher completed a directed content analysis. This deductive approach is used in studies that have a validated theory to determine a relationship between variables (Hsieh & Shannon, 2005). When coding, predetermined

labels were used and words and phrases in text were highlighted based on their fit with labels. These predetermined labels were the four parts of self-efficacy, which served as a-priori labels in the directed content analysis. In the narratives, mastery experiences were interpreted by the researcher as the act of someone performing an activity that challenged them, thus, perhaps increasing their self-efficacy. Vicarious experiences were interpreted as seeing a peer do something first and the participant trying the same activity which can lead to an increase in self-efficacy. Verbal persuasion was interpreted as feedback given to the participant by the instructor and/or volunteer. This interpretation focused on feedback being used to increase or decrease an individual's self-efficacy (Bandura, 1997). Physiological signs was coded using the term "expressive reactions" which is described as visible reactions an adult interprets in children (Bandura, 1997). The processing of physiological signs, such as expressive reactions, can influence self-efficacy.

After initial analysis, the researcher had a peer review the interview transcripts for reliability to estimate the agreement of the two coders (Creswell & Plano Clark, 2011). The peer was given the explanation of aspects of self-efficacy used, along with a table with number of codes the researcher counted for each aspect. The peer reviewer read through interviews and marked in a coding reliability table if he agreed or disagreed with the decision for each code (coding reliability table available upon request). Cohens' Kappa (i.e. percentage agreement) was calculated from the number of times the peer review agreed with the researcher's analysis (Wood, 2007).



## Results

Each child scored mild to moderate on the Childhood Autism Rating Scale (CARS) except for one child who, despite having an ASD diagnosis, scored in the low or “Non-Autistic” range. However, this child scored a moderately abnormal rating on the intellectual functioning subscale. The demographic information form indicated three out of four of the children were on medications related to controlling symptoms associated with ASD and there were no changes in medication during the study. Additionally, three out of four children had some experience with horses before the study and none participated in a CLEAT program prior to the study.

After the directed content analysis was complete, all aspects of self-efficacy were present, as perceived by the participants in this study. Evidence of physiological signs was most prevalent, while vicarious experiences had the least prevalence. Table 1.4 shows the distribution of codes and labels from interviews. Peer-review resulted in a Cohen’s Kappa (i.e. percentage agreement) of 0.96 or 96%, strong reliability (Wood, 2007).

Self-efficacy labels	Total number of code in interviews
Physiological signs	16
Mastery experiences	9
Verbal persuasion	4
Vicarious experiences	1
Total	30

### Physiological Signs

All participant narratives had at least one statement related to physiological signs by stating they felt nervous, excited, and scared while attending the program. Three of the participants stated they were nervous and scared about performing activities on the horse and all stated they were excited about riding the horse. Caregivers also witnessed expressive reactions in their children as shown by one caregiver stating, “She’s always excited to come. All the time,” And another stating, “Oh she loves it, there will be days that we hear about Tucker (horse) at least every half hour.”

### **Mastery Experiences**

Regarding mastery experiences, the caregivers were asked if their child performed an activity the caregiver did not think the participant could perform. Caregivers made the following statements that supported this notion of mastering equine-related tasks: “She started to be able to ride Tucker with no guide. The guide wasn’t holding the lead rope.” “Today he could do some things (regarding the performance) without the volunteer’s help.” These quotes demonstrate that participants were attempting and accomplishing new activities.

### **Verbal Persuasion**

Regarding verbal persuasion, each caregiver stated that the instructor gave their participant verbal feedback and it was helpful for the setting. However, two caregivers stated their child typically responds better to visual feedback. This is demonstrated by one caregiver stating, “Yeah I mean he’s definitely a visual person as well but it (verbal feedback) seemed to work in this setting.”

### **Vicarious Experiences**

Vicarious experiences were least present in interviews with only one label identified. One participant stated it was helpful to watch others try activities he did not know how to perform. The same participant stated that he was more likely to try something after watching a peer try the activity first. These statements support that a vicarious experience via modeling from a peer helped increase the child's likelihood to try something new.

### **Discussion**

As previously stated, therapeutic riding and equine assisted therapy can be used with children with ASD to increase social functioning and communication (Bass, Duchowny, & Llabre, 2009), self-regulation (Gabriels et al., 2012), sociability (Memishevikj & Hodzhikj, 2010), gross motor skills (Hawkins, Ryan, Cory, & Donaldson, 2014), core strength and coordination (Holm et al., 2014), and overall quality of life (Lanning, Baier, Ivey-Hatz, Krenek, & Tubbs, 2014). Although research supports the use of therapeutic riding with children with ASD, there is no previous research using a theory to support the outcomes of therapeutic riding and children with ASD. This study used qualitative interviews to determine if the theory of self-efficacy was applicable to a therapeutic riding drill team. Although this program was not intentionally designed based on a particular theory, there was evidence of the four aspects of self-efficacy in the program.

Physiological signs were the most prevalent aspect of self-efficacy in the participants' experiences, which suggest physiological signs were the most influential aspect of self-efficacy in the program. To possibly increase physiological signs, a

recreational therapist could assist participants with processing and interpreting his or her emotions. If participants gain a better understanding of what these reactions mean, there could be an increase in the presence of self-efficacy related to physiological signs.

Mastery experiences were the second-most prevalent in participant and caregiver narratives. The activities in the therapeutic riding drill team gave the participants immediate feedback about their capabilities that they may not have otherwise known. A recreational therapist could include activities with the horse such as riding, leading, and grooming to increase the presence of self-efficacy via mastery experiences.

Verbal persuasion was the third most prevalent aspect of self-efficacy in participant narratives. All participants and caregivers stated that verbal feedback was helpful, however, two caregivers stated their child typically responded better to visual stimuli. Although there was evidence of this aspect of self-efficacy, incorporating visual feedback would benefit participants and further promote self-efficacy building. When developing programs for children with ASD, recreational therapists should be aware of the possible communication constraints and plan accordingly. Although Bandura (1997) only mentions verbal persuasion, it is the recreational therapist's job to match their participant's level of functioning and modify the program as needed. For instance, having both verbal and visual aids for the participant could help the participant communicate more effectively and understand feedback better.

Vicarious experiences only appeared once in the interviews. This data suggests that children with ASD may not wish to interact with others in programs likely due to their potential social and communication deficits (American Psychiatric Association,

2013). Since there was little evidence that vicarious experiences affected the participants in this program, recreational therapists could provide one-on-one sessions for children to work more on increasing mastery experiences, verbal persuasion, and physiological signs. Likewise, recreational therapists could have sessions in small groups and encourage modeling to potentially increase vicarious experiences. Since many children with ASD participate in therapeutic programs to promote interpersonal skill development, placing more emphasis on vicarious experience will likely improve social outcomes in addition to self-efficacy.

This study supports that the aspects of self-efficacy can be evident in therapeutic riding for children with ASD. These findings also support that the theory of self-efficacy can be an appropriate theory to build a therapeutic riding program. It is likely that a therapeutic riding program purposely built with self-efficacy as its theoretical foundation, the presence of self-efficacy would be greater which could lead to improved functioning in areas such as communication, social interaction, and building relationships.

### **Conclusion**

This study supports that therapeutic riding programs can be built around the theory of self-efficacy. Further assessment of theory-based programs could give the recreational therapist a basis to develop programs along with another way to evaluate the program by giving more direction on what to evaluate (Birckmayer & Weiss, 2000). Recreational therapy programs that are designed to support the four aspects of self-efficacy can possibly increase self-efficacy of participants in the program. Physiological signs need to be processed with the recreational therapist and interpreted by the

participant for them to gain a better understanding of their reactions, thus affecting self-efficacy. Having participants attempt new activities and encouraging them to attempt activities from the past can increase mastery experiences. Verbal persuasion can be used to encourage participation and give specific and directed feedback. Vicarious experiences can be used by encouraging peer modeling when working in groups.

### **Limitations and Suggestions for Future Research**

This study is limited by a small sample size due to the small number of participants included in the program. Since children with ASD sometimes have communication and social deficits, interviewing proved difficult at times which may have led to a decrease in information gathered. These two limitations reduced the robustness of the qualitative data. In future studies, researchers should formulate a plan to address these communication barriers to get the most data possible such as including pictures or other visual aids in the interview process. Since the research displayed indicators that self-efficacy was present in the therapeutic riding drill team program and did not measure actual change in self-efficacy, more research should be performed to determine the effect therapeutic riding has on self-efficacy in children with ASD.

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CHAPTER FIVE  
TECHNICAL REPORT

# Therapeutic Riding and Children with Autism Spectrum Disorder: A Program Evaluation



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## **Abstract**

Therapeutic riding is a commonly used therapeutic approach for children with Autism Spectrum Disorder (ASD). Research supports therapeutic riding for children with ASD; however, the effect of specific sub-types of therapeutic riding (e.g., therapeutic riding drill team) has been under investigated. Furthermore, the role of self-efficacy and other programmatic components (e.g., interaction with horses, interaction with other participants, etc.) of therapeutic riding programs have not been studied, especially among children with ASD. This study evaluated a therapeutic riding drill team for children with ASD to determine if and to what extent self-efficacy and other program components were present. Three forms of data were collected including a retrospective Important Performance Analysis (IPA), satisfaction questionnaire, and interviews with the participants and their caregiver. The results showed high performance on the retrospective IPA, high satisfaction on the program components, and indicators of the presence of self-efficacy among participants in the therapeutic riding program.

## **Introduction**

Individuals with ASD may have deficits in: (a) social communication; (b) social interaction; (c) maintaining relationships; (d) repetitive patterns such as self-stimulating behaviors; and (e) sensory input (American Psychiatric Association, 2013). Although individuals with ASD may have deficits in these areas, many treatments and therapies have been developed to assist these individuals with leading fulfilling lives. Commonly recognized therapies for ASD include social skills training (Smith, Lochman, & Daunic, 2005), applied behavior analysis (Hollister Sandberg & Spritz, 2013), pharmaceuticals (Posey, Stigler, Erickson, & Mcdougale, 2008), and therapeutic riding. Some parents may not feel comfortable giving their child with ASD pharmaceuticals and therefore, may seek other therapies such as therapeutic riding services.

There are many therapeutic techniques that can be performed with a horse such as riding, grooming, feeding, and communicating with the therapist while near the horse. Therapeutic outcomes include improved self-esteem, independence, and trust (Rothe et al., 2005) along with gross motor skill improvement (Hawkins, Ryan, Cory & Donaldson, 2014). Since horses tend to react to behaviors of the rider, participants' interactions with a horse can cause the participant to realize the effects of their actions (Rothe et al., 2005).

## **Theoretical Foundation**

The connection between theory and therapeutic riding program's therapeutic outcomes is often unreported in research literature. Although this lack of clarity exists, therapeutic riding and equine assisted therapy (EAT) may be structured around the

theoretical framework of self-efficacy (Bandura, 1989). Many aspects of therapeutic riding conceptually support self-efficacy building.

Self-efficacy is someone’s belief of their capabilities to accomplish a task along with the skillset they may have. A person must have the skillset and belief that they can accomplish a goal in order to do so (Bandura, 1997). According to Bandura, four aspects of self-efficacy include mastery experiences, vicarious experiences, verbal persuasion, and physiological signs. Table 5.1 explains the aspects of self-efficacy.

**Table 5.1**

*Explanation of aspects of self-efficacy*

<b>Aspect</b>	<b>Meaning</b>
<b>Mastery experiences</b>	The act of someone performing an activity thus, demonstrating his or her capabilities (Kruger & Serpell, 2006).
<b>Vicarious experiences</b>	Similar to modeling by watching a peer perform an activity first (Bandura, 1997).
<b>Verbal persuasion</b>	Specific and directed feedback from someone more experienced (Bandura, 1997).
<b>Physiological signs</b>	Autonomic nervous responses to stressors (Wise, 2002).

**Methods**

This study evaluated a therapeutic riding drill team, with children with ASD. It also determined if self-efficacy was present during the program, and to what extent, among children with ASD who participated in the therapeutic riding drill team. A retrospective important-performance analysis (IPA) was given to caregivers to evaluate the program components (see all program components in table 5.2) along with a satisfaction questionnaire that was given to participants to rate their overall satisfaction

with the program. Additionally, qualitative data from interviews were used to determine if there was a presence of self-efficacy among participants in the therapeutic riding drill team program.

---

**Table 5.2**

***Program Components***

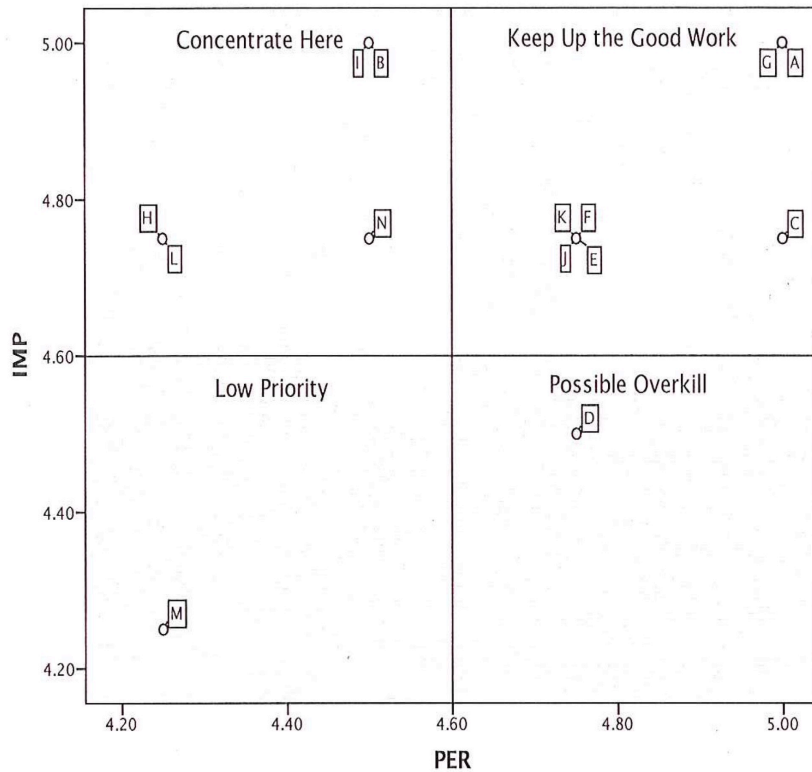
- |   |  |
|---|--|
| A | Safety precautions were taken for my child (i.e. helmets worn, volunteers helped child)        |
| B | The program was run by a PATH certified instructor   |
| C | The price of the program was affordable  |
| D | The program had therapeutic outcomes for my child  |
| E | The instructor worked well with my child   |
| F | My child could participate in an activity with other individuals with Autism Spectrum Disorder |
| G | My child was able to interact with horses  |
| H | My child participated in a performance   |
| I | My child learned horsemanship skills   |
| J | My child had to communicate with others  |
| K | My child had fun at the program  |
| L | Registration for the program   |
| M | Parental participation in the program  |
| N | Communication with staff of the program  |
- 

**Results**

**Retrospective IPA**

The IPA scores were calculated using SPSS and the points were graphed using a scatterplot. It is important to note that all the points were above average, falling in the “keep up the good work” quadrant. However, for the purpose of this research study and to give feedback to the instructor, the points were graphed using 4.60 as the average for performance and 4.20 as the average for importance. Using the new averages for the axis, areas for improvement were determined. The IPA graph is located below in figure A. Table 5.3 shows a breakdown of each component of the retrospective IPA along with which quadrant each component was located.

**Figure A.**



**Table 5.3**

***Breakdown of IPA Components***

Quadrant	Component
<b>Concentrate Here</b>	The program was run by a PATH certified instructor
	My child participated in a performance
	My child learned horsemanship skills
	Registration for the program
<b>Keep up the good work</b>	Communication with staff of the program
	Safety precautions were taken for my child
	The price of the program was affordable
	The instructor worked well with my child
	My child could participate in an activity with other individuals with ASD
	My child was able to interact with horses
	My child had to communicate with others
	My child had fun at the program
<b>Low priority</b>	Parental participation in the program
	<b>Possible overkill</b>
	The program had therapeutic outcomes for my child

**Satisfaction Questionnaire**

For the satisfaction questionnaire, a score of one represented “did not like the activity,” a score of two represented “whatever (neutral),” and a score of three represented “liked it”. The overall score of 2.80 shows the participants were satisfied with activities in the therapeutic drill team program. Overall, the participants were most satisfied with riding the horse and the drill team performance. Table 5.4 shows the average scores.

**Table 5.4**

***Satisfaction Questionnaire Scores***

How did you feel about the following	Average score
--------------------------------------	---------------



activities?	
Riding the horse	3.00
Drill team performance	3.00
Brushing the horse	2.75
Learning about the horse	2.75
Talking to other kids	2.50
Overall satisfaction score	2.80

## Interviews

After the directed content analysis was complete, all aspects of self-efficacy were present. Table 5 shows the distribution of codes and labels from interviews.

**Table 5.5**

*Distribution of codes and labels from interviews*

Self-efficacy labels	Total number of code in interviews
Physiological signs	16
Mastery experiences	9
Verbal persuasion	4
Vicarious experiences	1
<b>Total</b>	<b>30</b>

All participant narratives had at least one statement related to physiological signs by stating they felt nervous, excited, and scared while attending the program. Three of the participants stated they were nervous and scared about performing activities on the horse and all stated they were excited about riding the horse. Caregivers also witnessed expressive reactions in their children as shown by one caregiver stating, “She’s always excited to come. All the time,” And another stating, “Oh she loves it, there will be days that we hear about Tucker (horse) at least every half hour.”

Regarding mastery experiences, the caregivers were asked if their child performed an activity the caregiver did not think the participant could perform. Caregivers made

the following statements that supported this notion of mastering equine-related tasks:

“She started to be able to ride Tucker with no guide. The guide wasn’t holding the lead rope.” “Today he could do some things (regarding the performance) without the volunteer’s help.” These quotes demonstrate that participants were attempting and accomplishing new activities.

Regarding verbal persuasion, each caregiver stated that the instructor gave their participant verbal feedback and it was helpful for the setting. However, two caregivers stated their child typically responds better to visual feedback. This is demonstrated by one caregiver stating, “Yeah I mean he’s definitely a visual person as well but it (verbal feedback) seemed to work in this setting.”

Vicarious experiences were least present in interviews with only one example. One participant stated it was helpful to watch other’s try activities he did not know how to perform. The same participant stated that he was more likely to try something after watching a peer try the activity first. These statements support that a vicarious experience via modeling from a peer helped increase the child’s likelihood to try something new.

### **Implications and Recommendations**

Since the four aspects of self-efficacy were present in the program, it is reasonable to believe if a program were purposefully built around the theory, self-efficacy would be present at a greater capacity. To increase the likelihood of physiological signs being present, the instructor could look for signs of excitement, nervousness, and fear and process these with the participants. This could be done by

asking about feelings of excitement, nervousness, and fear to help the participant acknowledge and normalize these feelings. Mastery experiences could be increased by including more activities for the participants to attempt such as new moves on the horse. Encouraging volunteers to give their participant specific and directed feedback could increase verbal persuasion. Vicarious experiences could be increased by having participants try new activities one at a time while encouraging them to watch each other.

Although the main purpose of interviews was to determine if aspects of self-efficacy were present in the program, several practical implications were apparent. As stated in interviews, two caregivers mentioned their child typically does better with visual feedback. Since children with ASD often have communication deficits (American Psychiatric Association, 2013), including visual aids could increase communication and understanding with the participants. One way to address these communication deficits would be to include large diagrams with movements drawn on them in the arena. This could help participants understand what move or turn to perform. Another way to address communication deficits would be to create a visual schedule using a white board. This schedule could have a section for each participant and be hung in the barn or other easily accessible area. Activities such as grooming the horse, putting tack on the horse, riding, cleaning, feeding, etc. could be included and marked off when participants complete them.

One area for improvement that appeared in an interview was communication between staff and caregivers. One way to improve this would be to have a designated person, such as a volunteer, send an e-mail blast once a week with an update on the

session and what will be covered that week. A format of a newsletter could increase caregiver's interest in the program and help them feel included. This person could also call caregivers once a week to remind them of sessions and make sure they will attend.

Several caregivers made comments regarding the number of sessions that had to be rescheduled due to inclement weather. These caregivers stated that a covered arena would help tremendously and would allow their child to participate in more sessions, thus, possibly improving the impact of the program.

Two caregivers stated they heard about the therapeutic riding drill team via TOPS programs. If the instructor wishes to grow the program, advertising through TOPS again is recommended. Additionally, it is recommended to partner with a local school to bring children to the farm or send flyers home with children for recruitment. Another organization to partner with is the Early Autism Project located in Greenville, South Carolina. This program could reach out to more families with children with ASD that are in the area.

### **Conclusion**

Overall, the program had above average score on the satisfaction questionnaire and above average scores on the retrospective IPA. This study supports that the aspects of self-efficacy can be evident in therapeutic riding for children with ASD. Additionally, these findings support that the theory of self-efficacy can be an appropriate theory to build a therapeutic riding program. It is likely that a therapeutic riding program purposely built with self-efficacy as its theoretical foundation, the presence of self-

efficacy would be greater which could lead to improved functioning in areas such as communication, social interaction, and building relationships.

In interviews, some implications were apparent that would improve and advance the program. It is recommended that the therapeutic riding drill team include visual aids to help communicate with children with ASD and send out a weekly e-mail to communicate with caregivers. An outdoor covered arena would allow the program to have more sessions in undesirable weather. Lastly, partnering with schools or other organizations may allow the program to grow and more children receive the services.

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## CHAPTER FIVE

### REFLECTION

The intent of this research was to evaluate a therapeutic riding drill team program and to determine if aspects of self-efficacy were present. This study used a satisfaction questionnaire, a retrospective IPA, and interviews for program evaluation. Additionally, interviews were used to determine if self-efficacy was present in the program. Results revealed that there was an overall high score on the satisfaction questionnaire and IPA. Additionally, there were indicators that self-efficacy was present during the program by the four aspects of self-efficacy being represented. A deductive approach was taken for the analysis of the interviews due to the nature of having a predetermined theory.

This study provides knowledge for recreational therapists along with PATH instructors on how to build a program to potentially influence self-efficacy for individuals with ASD. Additionally, the IPA allows us to determine what program components caregivers' value. Thus, a recreational therapist could construct a program focusing on these components to satisfy caregivers. The satisfaction questionnaire allowed us to determine what aspects of a therapeutic riding program the participants are most satisfied by. As seen with mastery experiences, if a program has a high possibility of an activity participants both enjoy and master, self-efficacy may be present. Furthermore, since most therapeutic riding programs are not based on theory, using a theory to support the program could benefit the participants. Using a theory can be a basis to build a program and possibly explain outcomes.

As a future recreational therapist, this thesis was extremely influential in my development as a soon-to-be professional. I learned a great deal about recreational therapy and how to conduct a research project from my classes, which prepared me for this immense task. I believe I learned several valuable lessons from my thesis for when I am a practitioner. First, I now realize how important it is to evaluate programs.

Although this is something we learn about in classes and should be doing as recreational therapists, I think this last step is sometimes overlooked. Evaluating a program can be a fairly simple task, depending on the method, and gives the practitioner an abundance of information. This is important as recreational therapists if we want to base our program around our client's needs. Additionally, from my thesis and class, I have seen how important it is to implement evidence-based practice. If we want to be taken seriously in the health field, recreational therapy needs to prove that what we do works. Additionally, basing our programs around theories can give us explanations as to why we get certain outcomes. This can allow us to explain our outcomes to other health care workers or clients with a validated theory. When I am a recreational therapist I fully intend on using the skills I have learned from my graduate career and thesis to evaluate programs frequently and use evidence-based practice with theory driven approaches.

This research experience taught me a lot about myself such as my work ethic, interests, and desires as a future recreational therapist. The methods of this research changed several times and I had to learn to be flexible and do what the data determined was best. Also, I learned that I work well best under deadlines. Coming into graduate school I thought I might want to pursue equine assisted therapy full-time. Although I am



still extremely interested, since preceptorships and an internship, I have found another passion in mental health. Graduate school has helped me grow both personally and professionally in ways I did not imagine two years ago. I am so thankful for the experience to grow along side some of the top scholars in our field and to have had the experiences I did at Clemson University. Leaving our program I feel like I have a second family and that is something I will always be thankful for.

## APPENDICES

Appendix A

Childhood Autism Rating Scale

# C·A·R·S

## The Childhood Autism Rating Scale

Eric Schopler, Ph.D., Robert J. Reichler, M.D.,  
and Barbara Rothen Renner, Ph.D.

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Los Angeles, CA 90025-1251  
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Name: \_\_\_\_\_ Sex: \_\_\_\_\_

ID Number: \_\_\_\_\_

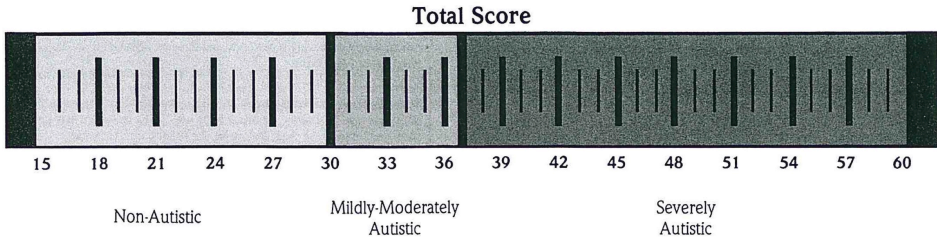
Test Date: Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Birth Date: Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Chronological Age: Years \_\_\_\_\_ Months \_\_\_\_\_

Rater: \_\_\_\_\_

Category Rating Scores																
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total Score	



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W-231A

# • CARS Rating Sheet •

**Directions:** For each category, use the space provided below each scale for taking notes concerning the behaviors relevant to each scale. After you have finished observing the child, rate the behaviors relevant to each item of the scale. For each item, circle the number which corresponds

to the statement that best describes the child. You may indicate the child is between two descriptions by using ratings of 1.5, 2.5, or 3.5. Abbreviated rating criteria are presented for each scale. See chapter 2 of the Manual for detailed rating criteria.

## I. RELATING TO PEOPLE

- 1** No evidence of difficulty or abnormality in relating to people • The child's behavior is appropriate for his or her age. Some shyness, fussiness, or annoyance at being told what to do may be observed, but not to an atypical degree.
- 1.5
- 2** Mildly abnormal relationships • The child may avoid looking the adult in the eye, avoid the adult or become fussy if interaction is forced, be excessively shy, not be as responsive to the adult as is typical, or cling to parents somewhat more than most children of the same age.
- 2.5
- 3** Moderately abnormal relationships • The child shows aloofness (seems unaware of adult) at times. Persistent and forceful attempts are necessary to get the child's attention at times. Minimal contact is initiated by the child.
- 3.5
- 4** Severely abnormal relationships • The child is consistently aloof or unaware of what the adult is doing. He or she almost never responds or initiates contact with the adult. Only the most persistent attempts to get the child's attention have any effect.

Observations:

## III. EMOTIONAL RESPONSE

- 1** Age-appropriate and situation-appropriate emotional responses • The child shows the appropriate type and degree of emotional response as indicated by a change in facial expression, posture, and manner.
- 1.5
- 2** Mildly abnormal emotional responses • The child occasionally displays a somewhat inappropriate type or degree of emotional reactions. Reactions are sometimes unrelated to the objects or events surrounding them.
- 2.5
- 3** Moderately abnormal emotional responses • The child shows definite signs of inappropriate type and/or degree of emotional response. Reactions may be quite inhibited or excessive and unrelated to the situation; may grimace, laugh, or become rigid even though no apparent emotion-producing objects or events are present.
- 3.5
- 4** Severely abnormal emotional responses • Responses are seldom appropriate to the situation; once the child gets in a certain mood, it is very difficult to change the mood. Conversely, the child may show wildly different emotions when nothing has changed.

Observations:

## II. IMITATION

- 1** Appropriate imitation • The child can imitate sounds, words, and movements which are appropriate for his or her skill level.
- 1.5
- 2** Mildly abnormal imitation • The child imitates simple behaviors such as clapping or single verbal sounds most of the time; occasionally, imitates only after prodding or after a delay.
- 2.5
- 3** Moderately abnormal imitation • The child imitates only part of the time and requires a great deal of persistence and help from the adult; frequently imitates only after a delay.
- 3.5
- 4** Severely abnormal imitation • The child rarely or never imitates sounds, words, or movements even with prodding and assistance from the adult.

Observations:

## IV. BODY USE

- 1** Age appropriate body use • The child moves with the same ease, agility, and coordination of a normal child of the same age.
- 1.5
- 2** Mildly abnormal body use • Some minor peculiarities may be present, such as clumsiness, repetitive movements, poor coordination, or the rare appearance of more unusual movements.
- 2.5
- 3** Moderately abnormal body use • Behaviors that are clearly strange or unusual for a child of this age may include strange finger movements, peculiar finger or body posturing, staring or picking at the body, self-directed aggression, rocking, spinning, finger-wiggling, or toe-walking.
- 3.5
- 4** Severely abnormal body use • Intense or frequent movements of the type listed above are signs of severely abnormal body use. These behaviors may persist despite attempts to discourage them or involve the child in other activities.

Observations:

V. OBJECT USE	
1	<b>Appropriate use of, and interest in, toys and other objects</b> • The child shows normal interest in toys and other objects appropriate for his or her skill level and uses these toys in an appropriate manner.
1.5	
2	<b>Mildly inappropriate interest in, or use of, toys and other objects</b> • The child may show atypical interest in a toy or play with it in an inappropriately childish way (e.g., banging or sucking on the toy).
2.5	
3	<b>Moderately inappropriate interest in, or use of, toys and other objects</b> • The child may show little interest in toys or other objects, or may be preoccupied with using an object or toy in some strange way. He or she may focus on some insignificant part of a toy, become fascinated with light reflecting off the object, repetitively move some part of the object, or play with one object exclusively.
3.5	
4	<b>Severely inappropriate interest in, or use of, toys or other objects</b> • The child may engage in the same behaviors as above, with greater frequency and intensity. The child is difficult to distract when engaged in these inappropriate activities.
Observations:	

VI. ADAPTATION TO CHANGE	
1	<b>Age appropriate response to change</b> • While the child may notice or comment on changes in routine, he or she accepts these changes without undue distress.
1.5	
2	<b>Mildly abnormal adaptation to change</b> • When an adult tries to change tasks the child may continue the same activity or use the same materials.
2.5	
3	<b>Moderately abnormal adaptation to change</b> • The child actively resists changes in routine, tries to continue the old activity, and is difficult to distract. He or she may become angry and unhappy when an established routine is altered.
3.5	
4	<b>Severely abnormal adaptation to change</b> • The child shows severe reactions to change. If a change is forced, he or she may become extremely angry or uncooperative and respond with tantrums.
Observations:	

VII. VISUAL RESPONSE	
1	<b>Age appropriate visual response</b> • The child's visual behavior is normal and appropriate for that age. Vision is used together with other senses as a way to explore a new object.
1.5	
2	<b>Mildly abnormal visual response</b> • The child must be occasionally reminded to look at objects. The child may be more interested in looking at mirrors or lighting than peers, may occasionally stare off into space, or may also avoid looking people in the eye.
2.5	
3	<b>Moderately abnormal visual response</b> • The child must be reminded frequently to look at what he or she is doing. He or she may stare into space, avoid looking people in the eye, look at objects from an unusual angle, or hold objects very close to the eyes.
3.5	
4	<b>Severely abnormal visual response</b> • The child consistently avoids looking at people or certain objects and may show extreme forms of other visual peculiarities described above.
Observations:	

VIII. LISTENING RESPONSE	
1	<b>Age appropriate listening response</b> • The child's listening behavior is normal and appropriate for age. Listening is used together with other senses.
1.5	
2	<b>Mildly abnormal listening response</b> • There may be some lack of response, or mild overreaction to certain sounds. Responses to sounds may be delayed, and sounds may need repetition to catch the child's attention. The child may be distracted by extraneous sounds.
2.5	
3	<b>Moderately abnormal listening response</b> • The child's responses to sounds vary; often ignores a sound the first few times it is made; may be startled or cover ears when hearing some everyday sounds.
3.5	
4	<b>Severely abnormal listening response</b> • The child overreacts and/or underreacts to sounds to an extremely marked degree, regardless of the type of sound.
Observations:	

IX. TASTE, SMELL, AND TOUCH RESPONSE AND USE	
1	<b>Normal use of, and response to, taste, smell, and touch</b> • The child explores new objects in an age appropriate manner, generally by feeling and looking. Taste or smell may be used when appropriate. When reacting to minor, everyday pain, the child expresses discomfort but does not overreact.
1.5	
2	<b>Mildly abnormal use of, and response to, taste, smell, and touch</b> • The child may persist in putting objects in his or her mouth; may smell or taste inedible objects; may ignore or overreact to mild pain that a normal child would express as discomfort.
2.5	
3	<b>Moderately abnormal use of, and response to, taste, smell, and touch</b> • The child is moderately preoccupied with touching, smelling, or tasting objects or people. The child may either react too much or too little.
3.5	
4	<b>Severely abnormal use of, and response to, taste, smell, and touch</b> • The child is preoccupied with smelling, tasting, or feeling objects more for the sensation than for normal exploration or use of the objects. The child may completely ignore pain or react very strongly to slight discomfort.
Observations:	

X. FEAR OR NERVOUSNESS	
1	<b>Normal fear or nervousness</b> • The child's behavior is appropriate both to the situation and to his or her age.
1.5	
2	<b>Mildly abnormal fear or nervousness</b> • The child occasionally shows too much or too little fear or nervousness compared to the reaction of a normal child of the same age in a similar situation.
2.5	
3	<b>Moderately abnormal fear or nervousness</b> • The child shows either quite a bit more or quite a bit less fear than is typical even for a younger child in a similar situation.
3.5	
4	<b>Severely abnormal fear or nervousness</b> • Fears persist even after repeated experience with harmless events or objects. It is extremely difficult to calm or comfort the child. The child may, conversely, fail to show appropriate regard for hazards which other children of the same age avoid.
Observations:	

XI. VERBAL COMMUNICATION	
1	Normal verbal communication, age and situation appropriate.
1.5	
2	Mildly abnormal verbal communication • Speech shows overall retardation. Most speech is meaningful; however, some echolalia or pronoun reversal may occur. Some peculiar words or jargon may be used occasionally.
2.5	
3	Moderately abnormal verbal communication • Speech may be absent. When present, verbal communication may be a mixture of some meaningful speech and some peculiar speech such as jargon, echolalia, or pronoun reversal. Peculiarities in meaningful speech include excessive questioning or preoccupation with particular topics.
3.5	
4	Severely abnormal verbal communication • Meaningful speech is not used. The child may make infantile squeals, weird or animal-like sounds, complex noises approximating speech, or may show persistent, bizarre use of some recognizable words or phrases.
Observations:	

XIII. ACTIVITY LEVEL	
1	Normal activity level for age and circumstances • The child is neither more active nor less active than a normal child of the same age in a similar situation.
1.5	
2	Mildly abnormal activity level • The child may either be mildly restless or somewhat "lazy" and slow moving at times. The child's activity level interferes only slightly with his or her performance.
2.5	
3	Moderately abnormal activity level • The child may be quite active and difficult to restrain. He or she may have boundless energy and may not go to sleep readily at night. Conversely, the child may be quite lethargic, and need a great deal of prodding to get him or her to move about.
3.5	
4	Severely abnormal activity level • The child exhibits extremes of activity or inactivity and may even shift from one extreme to the other.
Observations:	

XII. NONVERBAL COMMUNICATION	
1	Normal use of nonverbal communication, age and situation appropriate.
1.5	
2	Mildly abnormal use of nonverbal communication • Immature use of nonverbal communication; may only point vaguely, or reach for what he or she wants, in situations where same-age child may point or gesture more specifically to indicate what he or she wants.
2.5	
3	Moderately abnormal use of nonverbal communication • The child is generally unable to express needs or desires nonverbally, and cannot understand the nonverbal communication of others.
3.5	
4	Severely abnormal use of nonverbal communication • The child only uses bizarre or peculiar gestures which have no apparent meaning, and shows no awareness of the meanings associated with the gestures or facial expressions of others.
Observations:	

XIV. LEVEL AND CONSISTENCY OF INTELLECTUAL RESPONSE	
1	Intelligence is normal and reasonably consistent across various areas • The child is as intelligent as typical children of the same age and does not have any unusual intellectual skills or problems.
1.5	
2	Mildly abnormal intellectual functioning • The child is not as smart as typical children of the same age; skills appear fairly evenly retarded across all areas.
2.5	
3	Moderately abnormal intellectual functioning • In general, the child is not as smart as typical children of the same age; however, the child may function nearly normally in one or more intellectual areas.
3.5	
4	Severely abnormal intellectual functioning • While the child generally is not as smart as the typical child of his age, he or she may function even better than the normal child of the same age in one or more areas.
Observations:	

XV. GENERAL IMPRESSIONS	
1	No autism • The child shows none of the symptoms characteristic of autism.
1.5	
2	Mild autism • The child shows only a few symptoms or only a mild degree of autism.
2.5	
3	Moderate autism • The child shows a number of symptoms or a moderate degree of autism.
3.5	
4	Severe autism • The child shows many symptoms or an extreme degree of autism.
Observations:	

Appendix B

Demographic Information Form

Your name: \_\_\_\_\_ Your child's name: \_\_\_\_\_

Age of your child: \_\_\_\_\_

Medications your child takes:

---

---

Have any medications changed while participating in the therapeutic riding drill team?

YES/NO

If yes, please describe:

---

---

What other therapies does your child participate in?

---

---

Have any of these therapies changed/started/stopped during the therapeutic riding drill team?

YES/NO

If yes, please describe:

---

---

Has your child been around horses before the therapeutic riding drill team?

YES/NO

If yes, please describe:

---

---

Has your child participated in the Clemson Equine Assisted Therapy (CLEAT) program before the therapeutic riding drill team?

YES/NO

If yes, please describe:

---

---

Additional information you feel is important for us to know:

---

---








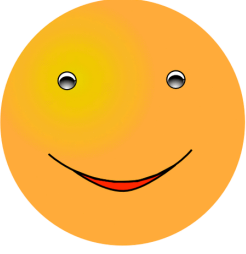


Appendix C

Participant Satisfaction Questionnaire

How did you feel about the following activities?

Please circle one emoticon.

 <p>Brushing the horse</p>	 <p>Did <b>NOT</b> like it 1</p>	 <p>Whatever (Neutral) 2</p>	 <p>Liked it 3</p>
 <p>Riding the horse</p>	 <p>Did <b>NOT</b> like it 1</p>	 <p>Whatever (Neutral) 2</p>	 <p>Liked it 3</p>



Drill team performance



Did **NOT**  
like it  
1



Whatever  
(Neutral)  
2



Liked  
it  
3



Talking to other kids



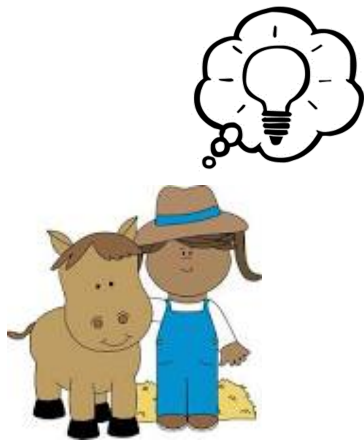
Did **NOT**  
like it  
1



Whatever  
(Neutral)  
2



Liked  
it  
3



Learning about horses



Did **NOT**  
like it  
1



Whatever  
(Neutral)  
2



Liked  
it  
3

Appendix D  
Retrospective Importance Performance Analysis

Think back to before you came to CLEAT’s Therapeutic Riding Drill Team (TRDT). How **important** were these components of the TRDT to you?

Use the following scale.  
Please circle the appropriate number.

<b>How important was...?</b>	<b>Not important at all (1)</b>	<b>Somewhat unimportant (2)</b>	<b>Neither important nor unimportant (3)</b>	<b>Somewhat important (4)</b>	<b>Extremely important (5)</b>
Safety precautions were taken for my child (i.e. helmets worn, volunteers helped child)	1	2	3	4	5
The program was run by a PATH certified instructor	1	2	3	4	5
The price of the program was affordable	1	2	3	4	5
The program had therapeutic outcomes for my child	1	2	3	4	5
The instructor worked well with my child	1	2	3	4	5
My child could participate in an activity with other individuals with Autism Spectrum Disorder	1	2	3	4	5
My child was able to interact with horses	1	2	3	4	5

My child participated in a performance	1	2	3	4	5
My child learned horsemanship skills	1	2	3	4	5
My child had to communicate with others	1	2	3	4	5
My child had fun at the program	1	2	3	4	5
Ease of registration for the program	1	2	3	4	5
Parental participation in the program	1	2	3	4	5
Communication with staff of the program	1	2	3	4	5

Is there anything that we forgot? Please tell us below and rate it on the same scale (1-5).

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Now that you've participated in the TRDT, tell us **how we performed** on the following program components.

Use the following scale.  
Please circle the appropriate answer.

How was the performance of...?	<b>Terrible performance</b>  <b>(1)</b>	<b>Below average performance</b>  <b>(2)</b>	<b>Neither good nor bad performance</b>  <b>(3)</b>	<b>Above average performance</b>  <b>(4)</b>	<b>Excellent performance</b>  <b>(5)</b>
Safety precautions were taken for my child	1	2	3	4	5

(i.e. helmets worn, volunteers helped child)					
The program was run by a PATH certified instructor	1	2	3	4	5
The price of the program was affordable	1	2	3	4	5
The program had therapeutic outcomes for my child	1	2	3	4	5
The instructor worked well with my child	1	2	3	4	5
My child could participate in an activity with other individuals with Autism Spectrum Disorder	1	2	3	4	5
My child was able to interact with horses	1	2	3	4	5
My child participated in a performance	1	2	3	4	5
My child learned horsemanship skills	1	2	3	4	5
My child had to communicate with others	1	2	3	4	5
My child had fun at the program	1	2	3	4	5
Ease of registration for the program	1	2	3	4	5
Parental participation in	1	2	3	4	5

the program					
Communication with staff of program	1	2	3	4	5

Please tell us how we performed on the items we forget (What you listed on the importance questionnaire). Please rate these on the same scale (1-5).

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Appendix E  
Interview Questions for Caregivers and Participants

<b>CLEAT Therapeutic Riding Drill Team Caregiver Interview Questions</b>	
<b>Narrative</b>	<b>Notes</b>
<p>“I would like to ask you some questions about your experience with the TRDT and your child’s experiences with the TRDT.</p> <p>Why did you sign your child up for this program?</p> <p>Did you watch every session?”</p>	
<p style="text-align: center;"><b>Mastery experiences</b></p> <p><b>Q1: Can you think of any examples of your child accomplishing something in the TRDT that they didn’t think they could?</b></p> <ul style="list-style-type: none"> <li>• What changes, if any, did you see in your child’s ability to communicate during the drill team?</li> <li>• What changes, if any did you see in your child’s riding ability during TRDT?</li> </ul>	
<p style="text-align: center;"><b>Vicarious Experiences</b></p> <p><b>Q2: What did your child learn from participating with others in the program?</b></p> <ul style="list-style-type: none"> <li>• Who did your child learn from the most and why?</li> </ul> <p><b>Q3: Did your child try a new activity</b></p>	

<p><b>after seeing another child perform a similar activity?</b></p> <ul style="list-style-type: none"> <li>• If yes, what activities did they try?</li> <li>• Why do you think they chose these activities?</li> </ul> <p><b>Q4: Do you believe your child learned anything from the horses that he/she worked with?</b></p>	
<p style="text-align: center;"><b>Verbal Persuasion</b></p> <p><b>Q5: What type of feedback did your child respond to best during TRDT?</b></p> <p><b>Q6: What type of feedback did the instructor give your child?</b></p> <ul style="list-style-type: none"> <li>• Would you consider this feedback beneficial? <u>Why</u> or why not?</li> </ul> <p><b>Q7: What type of feedback did the volunteer give your child?</b></p> <ul style="list-style-type: none"> <li>• Would you consider this feedback beneficial and why or why not?</li> </ul>	
<p style="text-align: center;"><b>Physiological Signs</b></p> <p><b>Q8: Did your child show any signs of nervousness before and/or after the program sessions?</b></p> <ul style="list-style-type: none"> <li>• If so, what were these signs?</li> </ul> <p><b>Q9: Did your child show any signs of being excited before and/or after the program sessions?</b></p> <ul style="list-style-type: none"> <li>• If so, what were these signs?</li> </ul> <p><b>Q10: Did your child show any signs of fear before and/or after the program sessions?</b></p> <ul style="list-style-type: none"> <li>• If so, what were these signs?</li> </ul>	<p>Physiological signs can include sweating, increased heart rate, shaking, etc.</p>



<b>CLEAT Therapeutic Riding Drill Team Participant Interview Questions</b>	
<b>Narrative</b>	<b>Notes</b>
<p>“I would like to ask you some questions about the therapeutic riding drill team.</p> <p>Why did you want to come to Drill Team?</p> <p>Did you enjoy Drill Team?</p> <p>What was your favorite part of the Drill Team?”</p>	
<b>Mastery Experiences</b>	Example of things they may have tried.
<p><b>Q1: What new things did you do at the TRDT?</b></p> <p><b>Q2: Did you think you would be able to do these things before you started?</b></p> <ul style="list-style-type: none"> <li>• Can you tell me a story of something you didn't think you would be able to do before the program?</li> </ul>	<p>Riding the horse</p> <p>Brushing the horse</p> <p>Leading the horse</p> <p>Performance</p>
<b>Vicarious Experiences</b>	Helpful to watch other kids do things such as:
<p><b>Q3: Was it helpful to watch other kids do hard things first, such as...?</b></p> <ul style="list-style-type: none"> <li>• What things did you watch other kids do first?</li> </ul> <p><b>Q4: Were you more likely to try something after another kid tried?</b></p> <ul style="list-style-type: none"> <li>• What was something you tried after someone else?</li> </ul>	<p>Riding horse</p> <p>Leading horse</p> <p>Brushing horse</p> <p>Talking to other kids</p>
<b>Verbal Persuasion</b>	Examples of how they may have been helped.
<b>Q5: Did Meredith (instructor) help you</b>	

<p><b>in any way?</b></p> <ul style="list-style-type: none"> <li>• What ways did Meredith help you?</li> <li>• Can you share a story of a time she helped by talking to you?</li> </ul> <p><b>Q6: Did the volunteer help you in any way?</b></p> <ul style="list-style-type: none"> <li>• What ways did a volunteer help you?</li> <li>• Can you share a story of a time a volunteer helped by talking to you?</li> </ul>	<p>Talking to them Encouraging them Showing them</p>
<p style="text-align: center;"><b>Physiological Signs</b></p> <p><b>Q7: Did you get nervous while at the TRDT?</b></p> <ul style="list-style-type: none"> <li>• If so, can you tell me a story about what happened when you got nervous?</li> </ul> <p><b>Q8: Did you get scared while at the TRDT?</b></p> <ul style="list-style-type: none"> <li>• If so, can you tell me a story about what happened when you were scared?</li> </ul> <p><b>Q9: Did you get excited while at the TRDT?</b></p> <ul style="list-style-type: none"> <li>• If so, can you tell me a story about what happened when you were excited?</li> </ul>	
<p>Q10: Why should other kids do Drill Team?</p> <p>Q11: What else do you want to tell me about the TRDT?</p>	

Appendix F  
Reliability Chart

**Instructions for Reliability Test**

- The labels are listed below with corresponding colors.
- Read through the interviews.
- For each code, decide if you agree or disagree with my coding.
- Mark in the box for that code (mastery experiences, verbal persuasion, etc.) if you agree or disagree with a tally mark.
- When you are finished, I will go through and perform Cohen's Kappa Reliability test to get the reliability for each label and an overall reliability.

**Labels**

1. **Mastery experiences**- Perceived efficacy depends on “preconceptions of their capabilities, the perceived difficulty of tasks, the amount of effort they expend...the temporal pattern of their successes and failures...” (Bandura, 1997)
  - a. Brenna's label interpretation-the act of someone performing an activity they did not think they could. This experience gives the participant immediate feedback. Successes build belief in one's abilities.
2. **Vicarious experiences**-Vicarious experiences are similar to modeling except a peer typically performs the task first. Vicarious experiences allows the individual to compare their abilities to those of their peers which can affect self-efficacy (Bandura, 1997).
  - a. Brenna's label interpretation- seeing a peer do something first, then trying the activity
3. **Verbal persuasion**-specific and directed encouragement from someone more experienced. Additionally, it is important that verbal persuasion be realistic (Bandura, 1997).
  - a. “Persuatory efficacy information is often conveyed in the evaluative feedback given to performers. It can be conveyed in ways that undermine a sense of efficacy or boost it.” (Bandura, 1997)
  - b. Brenna's label interpretation-specific and directed feedback given to participant from someone more experienced such as the instructor and/or volunteer. Did not look just for “persuasion.”
4. **Physiological signs**-“People rely partly on somatic information conveyed by physiological and emotional states.” (Bandura, 1997)
  - a. Use term “Expressive reactions” which is described as “visible expressive reactions signifying positive or negative experiences” and “adults must infer the presence of the internal affective state in young children from their expressive reactions and from environmental elicitors known to produce particular types of emotions.” (Bandura, 1997)
  - b. Brenna's label interpretation-Response to program as told to interviewer by child or child's caregiver
  - c. Only coded when the question yielded a “yes” response regarding expressive reactions.

## Reliability Test

	Agree	Disagree	Total
<b>Mastery Experiences</b>			<b>9</b>
<b>Vicarious Experiences</b>			<b>1</b>
<b>Verbal Persuasion or Feedback</b>			<b>4</b>
<b>Physiological Signs (Expressive Reactions)</b>			<b>16</b>
<b>Total</b>			<b>30</b>

Figure A: IPA Graph

