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How Equine Assisted Therapy Can Improve the Quality of Life for Individuals Diagnosed with Autism, Ages 2-18

Haley M. Haggerty
The College at Brockport

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Cover Page Footnote

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Introduction

Horses play a vital role in human healing—physically and mentally—because of the horse's capability to serve as an accommodating partner in the process. There has been no other animal throughout history that has been so closely intertwined with human life and culture than the horse. Horses have the unique ability to remind humans of their connection to nature, the simplicities of life, and the innate rhythms and cycles of life. When riding a horse, the rider leaves the commonplace world, even if just for a moment, to fuse herself with the horse; setting free her body and spirit. A horse's extreme sensitivity and fine-tuned communication with humans provides a worthwhile, fascinating experience and sensation for children with disabilities who do not have the option to participate in sports or have the capabilities to connect with another human.

The connection between horse and rider is a merging of both the mind and the body, which awakens the human spirit to new and unique perceptions of the world. Walter Prescott Webb wrote that horses, both in a literal and symbolic sense, raise the status of people who ride and use them:

> The horse has always exerted a peculiar emotional effect on both the rider and the observer: he has raised the rider above himself, has increased his power and sense of power, and has aroused a sense of inferiority and envy in the humble pedestrian…Through long ages the horse has been a symbol of superiority, of victory, and triumph…A good rider on a good horse is as much above himself and others as the world can make him. (Engel, 1992, p. 1)

As an intimidating and powerful animal, the horse represents a contradiction because his strength can easily be guided and controlled by the gentle hands of a rider. Horses are known for adapting their behavior to the particular rider and situation that they find themselves in, even if it is a child with disabilities who needs the support of a gentle ride. It cannot be explained how or why the bond between human and horse exists, but when mounted on a horse the rider feels a sense of "heightened awareness that is an essential component of any type of healing process" (Engel, 1992, p. 2). Whatever weakness the individual may have, a horse is willing to look past and become the rider's tool to overcoming her disability.

In this paper, I will discuss the general characteristics of children who have been diagnosed with autism and the treatments that are currently being used to combat the symptoms of this disability. I will then describe the new and upcoming disability treatment called Equine Assisted Therapy, the variations within the treatment programs, and the certifications required to run an Equine Assisted Therapy barn. As evidence of the successfulness of these programs, I will give examples of personal cases where this therapy has proven effective with

children diagnosed with autism. Finally, I will discuss in depth, the benefits of Equine Assisted Therapy for children with autism within four sub-categories: physical benefits, emotional benefits, psychological benefits, and educational benefits. This paper will prove the efficacy of Equine Assisted Therapy for children with autism in comparison and in conjunction with other therapies.

What is autism?

Autism and autism spectrum disorder are both blanket terms used to describe a group of complex disorders that affect brain development. These disorders are characterized by difficulties with social interaction, verbal and non-verbal communication, and repetitive behaviors. They can also be associated with intellectual disabilities, difficulties in motor coordination and attention, and physical health issues such as insomnia and gastrointestinal disturbances (Autism Speaks Inc., 2014). In the publication of the DSM-5 diagnostic manual in May 2013, all autism disorders were merged under one diagnosis of autism spectrum disorder. Prior to this manual there were distinctive sub-types of autism disorders including autistic disorder, childhood disintegrative disorder, pervasive developmental disorder- not otherwise specified (PDD-NOS), and asperger syndrome (Autism Speaks Inc., 2014). This disorder can be very frightening for a family and some of the ways to improve the outcomes of these situations are to continue to fund research on effective methods for earlier diagnosis, to invest in early interventions with proven behavioral therapies, and to increase autism awareness. When parents first receive the diagnosis that their child has autism, the first few months can be emotional, confusing, and challenging. Parents should not blame themselves for the diagnosis but should proceed by educating themselves about the disability and becoming an integral part in their child's journey.

What does it mean to be "on the spectrum"?

Each individual with autism is unique and is placed somewhere on the wide continuum of the spectrum based on her individual strengths and needs. Some children may be high functioning and have exceptional abilities in visual skills, music, and academic skills. According to Autism Speaks Inc. (2014), approximately 40 percent of children diagnosed with autism have average to above average intellectual abilities. On the other end of the spectrum, many children may have significant disability and are unable to live independently. Autism Speaks Inc. (2014) also states that about 25 percent of children diagnosed with autism are nonverbal but can learn to communicate by other means. Some parents wonder if it is ever possible for a child to move off the spectrum. Growing evidence suggests that a small minority may progress to the point where they no longer meet the criteria for the diagnosis of autism spectrum disorder. There are various theories that explain why this happens including an initial misdiagnosis, maturation out of certain forms of autism and the possibility of successful treatment producing outcomes that no longer meet the criteria for diagnosis.

Development and delivery of more effective treatments that can address significant challenges or increase acceptance, respect, and support can significantly improve the lives of all children on the spectrum, no matter where they are placed.

How autism is diagnosed?

There is no medical test that has the ability to diagnose autism instead, specially trained physicians and psychologists administer behavioral evaluations that are specific to the disability. Parents are usually the first to notice that their child is exhibiting unusual behaviors such as failing to make eye contact, not responding to his or her name, or playing with toys in unusual or repetitive ways. The Modified Checklist of Autism in Toddlers (M-CHAT) is a list of informative questions that can indicate whether the child should be further evaluated based on the frequency of the answers. This checklist is a 2-stage parent-report screening tool to assess the risk for the disorder, which can be administered and scored as a part of a routine doctor visit (Robbins, Fein, & Barton, 2009). The primary goal in this assessment is to maximize sensitivity in order to detect as many cases as possible of autism spectrum disorder. Although a significant number of children who screen positive may not actually be diagnosed with autism they may be at a high risk for other developmental disorders and should be tested further.

Parents should be aware that doctors who are unfamiliar with diagnosing autism might dismiss their concerns or delay diagnosing their child, which can result in a decreased opportunity for early intervention therapies. Parents should involve a multi-disciplinary team of doctors including, a pediatrician, a psychologist, a speech and language pathologist, and an occupational therapist, in order to get a proper screening that can highlight the child's strengths and needs. Although a diagnosis of autism may be difficult to hear for some parents, it can also bring relief to those who have for a long time observed their child struggle with "relating socially while not understanding the source of their difficulties" (Autism Speaks Inc., 2014). The diagnosis of autism can also open access to a variety of therapies and assistive technologies that can not only improve functioning in the areas of difficulty, but also can improve the overall quality of the child's life.

What causes autism and what are its symptoms?

Just like there is no one type of autism, there is also no one cause of autism or one complete set of symptoms. Over the last several years, researchers have identified several rare gene changes, or mutations, that are sufficient in themselves to cause autism. The majority of autism cases, however, are caused by a combination of the risk genes and environmental factors influencing early brain development. These autism risk factors according to Autism Speaks Inc. (2014) involves events before and during birth such as advanced parental age at the time of conception, maternal illness during the pregnancy, and difficulties during birth

that cause oxygen deprivation to the baby's brain. These factors alone do not cause autism but rather increase the risk when in combination with genetic risk factors.

Autism cannot be definitively diagnosed until around 18-24 months, although parents may see early warning signs in children as young as 8-12 months. Autism spectrum disorders are characterized by self-preoccupation, communication dysfunction, basically normal physical development with abnormal repetitive movement actions, perseveration, or sameness, assumed appearance of deafness or blindness, intelligent in specific skills with generally an excellent memory, and functioning can vary from hour to hour or day to day (Engel, 1992, p. 228). All of these characteristics, which can vary in their severity and frequency, are categorized into three core areas of social interaction difficulties, communication challenges, and a tendency to engage in repetitive behaviors. While autism is usually a life-long condition, all children can benefit from interventions or therapies that can reduce the symptoms and increase their skills and abilities throughout life.

How is autism treated?

Because children with autism are unique, their autism intervention plan should be unique as well; tailored to address the specific needs of the child. The treatment of autism focuses on symptom management (Taylor, Kielhofner, Smith, Butler, Cahill, Ciukaj, & Gehman, 2009, p. 193) which can involve behavioral treatments, medicines, or both. This intensive intervention involves the child's entire family working closely with a team of professionals to deliver services within the home by a therapist or parent leading therapy session, or within a specialized center, classroom, or preschool. Different interventions and supports become appropriate as a child develops and acquires social and learning skills, especially when entering school, a child may benefit from targeted social skills training and specialized approaches to teaching (Autism Speaks Inc., 2014).

How common is autism?

Autism has topped the charts as the fastest-growing serious developmental disability in the United States. According to Autism Speaks Inc. (2014), the United States Centers for Disease Control and Prevention maintain that approximately 1 in every 68 children are diagnosed as being on the autism spectrum, which is a "ten-fold increase in prevalence in 40 years." This increase is partly explained by improved diagnosis and awareness of the disease and environmental influences, much like the recent dramatic increase in the diagnosis of celiac disease which affects 1 in every 100 people and is four times more likely now than 60 years ago (Murray, 2010). Studies also show that autism is four to five times more common among boys as an estimated 1 out of 42 boys and 1 in 189 girls are diagnosed in the United States. Autism spectrum disorder affects over 2 million individuals in the United States alone and tens of millions of

people worldwide as prevalence rates have increased 10 to 17 percent annually (Autism Speaks Inc., 2014). With a diagnosis of autism comes the expense as this disease costs a family an average of $60,000 a year. Even though family budgets have stretched, the National Institute of Health (NIH) funding has not. autism receives less than 5 percent of the available research funding in comparison to many less prevalent childhood diseases, which receive significantly more. Out of the total National Institute of Health funds at $30.86 billion, only $169 million goes directly to autism research which represents 0.55 percent of the total NIH funding (Autism Speaks Inc., 2014).

What therapies are presently being used to treat autism?

Treatment for autism is usually a rigorous, inclusive undertaking that involves the child's entire family and a team of professionals. These treatment programs may combine multiple therapies for both core symptoms and associated symptoms in order to tailor the treatment to the child's specific needs and strengths.

One widely used treatment method is Applied Behavior Analysis (ABA) which teaches communication, play, social, academic, self-care, work and community living skills, and methods that reduce problem behaviors in learners with autism (Autism Speaks Inc., 2010, pg. 35). ABA methods use the following three step process to teach these skills: (1) antecedent, which is a verbal or physical stimulus such as a command or request that may come from the environment, another person, or internal to the subject, (2) behavior, which is the child's response or lack of response to the antecedent, (3) consequence, which is the reaction given to the child, whether positive reinforcement or no reaction, based on the behavior. In ABA, the programs are highly structured with each skill being broken down into small steps and prompts until there is mastery of the steps without the prompt. Support can be given to the child in the school setting with a one-to-one aid to target the transfer of the skills to a school environment so that the child learns how to learn in a natural environment. The specialists that provide this service and analyze its results are board certified behavior analysts and individual therapists called "trainers" who work directly with the child on a day to day basis for 2-3 hours long at an intense 25-40 hours per week (Autism Speaks Inc., 2010, p. 36). Every aspect of this intervention is customized to each learner's needs, preferences, interests, skills, and family situations.

Another treatment method is Pivotal Response Treatment (PRT), developed by Dr. Robert L. Koegel, Dr. Lynn Kern Koegel, and Dr. Laura Shreibman, PRT is based on the principles of ABA and used to teach language, decrease disruptive/self-stimulatory behaviors, and increase social, communication and academic skills by focusing on critical, "pivotal," behaviors that affect a wide range of behaviors (Autism Speaks Inc., 2010, p. 36). In simpler terms, the primary "pivotal" behaviors of a child with autism are motivation and

initiation of communications with others. PRT is child-directed with the reinforcement and motivational strategies coming from psychologists, special education teachers, speech therapists, and other providers who are specifically certified in PRT. Each program is tailored to meet the goals and needs of the child and is designed to fit into the family routines so that children can be exposed to language, play, and social skills within structured and unstructured environments. PRT programs involve 25 or more hours per week with everyone in the child's life involved and the sessions are subject to change in order to accommodate more advanced goals and changing needs (Autism Speaks Inc., 2010, p. 37).

Verbal Behavior (VB) therapy uses B.F. Skinner's analysis of "operant conditioning" (Autism Speaks Inc., 2010, p. 34) as a basis for teaching language and shaping behavior. VB is designed to motivate a child to learn language by developing a connection between a word and its value through "mands," "echoics," "tacts," and "intraverbals" otherwise known as word reinforcement, echoing, labeling visuals, and responses to questions from another person. VB therapy is provided by VB-trained psychologists, special education teachers, speech therapists, and other certified individuals who schedule therapy for 30 or more hours per week.

The Early Start Denver Model (ESDM) is a developmental, relationship-based intervention approach that employs teaching techniques consistent with ABA in order to foster social gains—communicative, cognitive, and language—and to reduce atypical behaviors associated with autism (Autism Speaks Inc., 2010, p. 38). The content of intervention for ESDM comes from a comprehensive curriculum checklist that covers cognitive skills, language, social behavior, imitation, fine and gross motor skills, self-help skills and adaptive behavior and has been shown to be effective for increasing IQ, language and social skills, and adaptive behavior. ESDM is designed to be provided by ESDM-trained behavior analysts, special education teachers, speech therapists, and other certified providers who create a treatment that is highly engaging and enjoyable for the child because skills are taught within the natural play-based environment (Autism Speaks Inc., 2010, p. 39).

Floortime is based on the Developmental Individual Difference Relationship Model (DIR) which is a therapeutic technique created by Dr. Stanley Greenspan in which an adult can help a child "expand his circles of communication by meeting him at his developmental level and building on his strengths" (Autism Speaks Inc., 2010, pp. 39-40). Therapy is incorporated into play activities on the floor to help the child reach six developmental milestones: self-regulation and interest in the world, intimacy or a special love for the world of human relations, two-way communication, complex communication, emotional ideas, and emotional thinking, which contributes to emotional and intellectual growth. This therapy is child-led as the parent engages the child at the level she

currently enjoys and enters into activities with mutually shared commitment to the task. Floortime does not separate and focus on the therapy aspects of the session, it rather addresses these areas through an emphasis on "opening and closing circles of communication" (Autism Speaks Inc., 2010, p. 40). Floortime is typically provided by parents or caregivers who have been trained, but it can also be provided by floortime-trained psychologists, special education teachers, speech therapists, and occupational therapists who deliver the session in a low stimulus environment ranging from 2-5 hours per day.

Some of the therapies that may be more commonly recognized and are used as a treatment for the biological and medical conditions associated with autism are speech-language therapy (SLT), occupational therapy (OT), sensory integration (SI), physical therapy (PT), and the gluten free-casein free diet (GFCF). Speech-language therapy is delivered by a speech-language pathologist conducted one-on-one, in a small group, or in a classroom setting and is designed to coordinate the mechanics of speech and the meaning and social value of language (Autism Speaks Inc., 2010, p. 44). Occupational therapy, administered by a certified occupational therapist, is conducted for about 30 minutes to 1 hour as needed and brings together cognitive, physical, and motor skills to enable the individual to gain independence and to participate more fully in life. Sensory integration is often part of OT and PT programs and is designed to identify disruptions in the way that children's brains process movement, touch, smell, sight, and sound Sensory Integration helps to identify the help that the child needs to process these senses in a more productive way. Physical therapy is delivered by a certified physical therapist in 30 minute to one-hour sessions with the goal to address any problems with movement that may cause functional limitations such as challenges with motor skills, poor muscle tone, and limited balance and coordination. Finally, the gluten free-casein free diet is a dietary and nutritional intervention that is helpful for reducing some symptoms. Proteins, such as gluten or casein, are absorbed differently and some children may experience physical symptoms or behavioral issues when consuming them. Some families have stated that the removal of these proteins has helped regulate their child's bowel habits, sleep activity, habitual behaviors, and contributed to the overall progress or their children (Autism Speaks Inc., 2010, p. 46). It is important that parents make sure that their children are still receiving adequate nutrition, which is now even more possible to achieve with the expansion of the gluten free products and recipes available in today's society.

Where did Equine Assisted Therapy originate?

Riding was used throughout history as a form of therapy as far back as early mythology in ancient writings. Aesculapius, who was described as both a god and a man in early mythology, is said to have given horses to the world to "those afflicted with wounds and disease that could not be healed" (Stuler, 1993,

p. 8). Another use of horses in history as a form of therapy was by Chassigne in Paris 1875 when he studied riding and concluded that it was beneficial for the treatment of people with disabilities, particularly those with neurological disabilities. The first established therapeutic riding programs were not officially established until the 1950s when several individuals made the therapeutic effects of horseback riding internationally recognized. Liz Hartel earned silver in the Grand Prix Dressage at the Olympic Games in Helsinki, Finland despite being diagnosed with a weakness caused by poliomyelitis. Her success sparked an interest in therapeutic riding, which increased in North America in the late 1960's. Formal therapeutic riding programs were organized in 1969 with the establishment of the North American Riding for the Handicapped Association (NARHA) (Stuler, 1993, p. 9).

Therapeutic riding in the United States evolved from a combination of two different programs; the British Riding for the Disabled programs and the German and Swiss clinical model. The two models differ in that the British model promotes physical and mental well-being through riding as a recreational sport, whereas the German and Swiss model relies on a medicinal orientation, which stresses postural alignment and symmetry as goals of an equestrian activity (Engel, 1992, p. 19). The model that is used by the United States has an added emphasis on educational goals and combines all three techniques to compliment and support each other. The United States program highlights the important pieces of all three programs to create a rewarding learning activity while simultaneously attaining the best physical and functional levels possible. Students learn "the rules of a sport, the techniques of horsemanship, and methods of controlling their bodies to make the human-to-horse interaction meaningful" (Engel, 1992, p. 19).

What are the therapeutic riding programs' similarities and differences?

Animal Assisted Therapy (AAT)

The very root of therapeutic riding programs comes from Animal Assisted Therapy, which is the "introduction of an animal into an individual's or group's immediate surroundings, with therapeutic intent" (Kunstler & Daly, 2010, p. 194). This type of therapy is expansive in its potential to help people with disabilities because it involves events such as pet visits, having resident pets or animals in a facility, taking care of pets, or incorporating animals into a specific goal-oriented intervention. People who do not want to have direct contact with the animals can still benefit from looking at the animals, watching movies or television shows about them , reading stories involving animals, or looking at paintings, drawings, or sculptures about animals. Animal Assisted therapy provides numerous benefits to children with disabilities, but there are also some potential physical risks attached to the therapy. Horseback riding is perceived by some as a risky activity although there are extremely low incidences of injury at therapeutic riding

centers. There are also the emotional risks as people become emotionally attached to an animal. If the animal were to suddenly leave or die, clients may possibly experience loss and grief.

Interacting with animals is a rewarding experience, especially for children whose lives are controlled by an illness, disability, or life circumstance, that can help a child to develop a sense of responsibility, feelings of love and nurturance, and better coping strategies. When dealing with a disability, Animal Assisted therapy studies prove that children who were exposed to this program sometimes found more support from animals than from people, were more motivated to interact, and were better able to deal with stress (Kuntsler & Daly, 2010, p. 195). In one in-depth study of three children with autism, the children displayed behaviors towards their pets that they rarely showed towards their families: they hugged their pets, confided in them, and took comfort from their presence. Yet all of these behaviors are contrary to the criteria used to diagnose a child with autism. When interacting with animals, these children became new people, as they were more playful, more energetic, more focused, and more aware of their environment.

Equine Assisted Therapy (EAT)

Equine Assisted therapy is a treatment that uses both equine activities and the equine environment to achieve rehabilitative goals that are directly related to the patient's needs and the medical professional's standards of practice (Professional Association of Therapeutic Horsemanship International, 2014b). When a person can understand and be understood by a large animal, communication with people becomes easier and more rewarding, and the horse becomes a tool for the emotional growth and learning of the rider (Nelson, n.d., p. 1). Equine Assisted therapy is a collaborative effort between therapist and horse professional in an effort to teach participants to learn about themselves and others by participating in activities with the horses, and then processing these feelings, behaviors, and patterns. Equine Assisted therapy is about life skills and development more so than symptom reduction. Several tools that are utilized by this therapy program to achieve goals are nonverbal communication, assertiveness, creative thinking, problem solving, leadership, confidence, teamwork, relationships, attitude, and taking responsibility (Nelson, n.d., p. 2).

In comparison with Animal Assisted therapy, Equine Assisted therapy is believed to offer several advantages over other AATs in the treatment of children who have been diagnosed with autism spectrum disorder. To begin with, the act of riding the horse has the benefit of engaging and motivating the child. Theories of neural functioning in autism are highlighting functional underconnectivity, a lower degree of synchronization in the brain, as a general characteristic of the functional changes that accompany autism (Van den Hout & Bragonje, 2010, p. 3). Secondly, it has been suggested that the act of riding brings about continuous

postural challenges to the rider through the movements induced by the horse, which requires bilateral coordination to stay seated. Improving bilateral coordination is thought to stimulate new neural connections between the hemispheres in the brain and could possibly result in reversing the underconnectivity. Lastly, it is theorized that the physical exercise reduces the levels of stress hormones that can interfere with brain development and can be a factor that reverses the underconnectivity (Van den Hout & Bragonje, 2010, p. 3).

Equine Facilitated Learning (EFL) and Equine Facilitated Psychotherapy (EFP)

Equine Facilitated Learning and Equine Facilitated Psychotherapy are experimental forms of psychotherapy and learning that involve the use of horses as a segue to the patient. EFL is an educational approach to equine assisted activities with the primary intent to facilitate personal growth and development of life skills; whereas EFP is an interactive process, co-directed by a licensed mental health professional and a credentialed equine professional, to address the psychotherapy goals set for the student by the mental health professional and the child. (Professional Association of Therapeutic Horsemanship International, 2014b).

The reason that mental health professionals believe that horses might be helpful or healing to people struggling with disabilities is based on the notion that horses are extremely sensitive to changes in the human being because reactions and responses are directly related to their rider's emotional states. Horses are like large biofeedback machines providing the parents and therapist with information regarding the child's moods and changes in moods (Professional Association of Therapeutic Horsemanship International, 2014a). This generates a plethora of information and skill building opportunities for the child, parents, and therapist during the lesson, at home, or in public. In relation to education, Equine Facilitated Learning provides opportunities to teach critical life and communication skills because horses offer modesty, empathy, and challenge which are all critical elements to supporting self-growth and awareness. Like some of their riders, horses mainly use non-verbal communication, which can help students to better understand and learn how their non-verbal communication may be influencing others in their lives. Horses are also a living animal with a mind and feelings of their own that demand that the rider be aware of her surroundings at all times and are present in her body; remaining focused and attentive. Riders gain a strong work ethic when taking care of their horses. They also gain a strong sense of self-esteem and self-confidence while learning how to work with such a large, powerful creature. These skills learned through horseback riding and barn maintenance can transfer to their daily lives (Professional Association of Therapeutic Horsemanship International, 2014b).

Hippotherapy

The American Hippotherapy Association Inc. defines Hippotherapy as "a physical, occupational or speech therapy strategy that utilizes equine movement" (Professional Association of Therapeutic Horsemanship International, 2014a). Hippotherapy, in a literal sense, means treatment with the help of a horse, and more specifically the movement of a horse. The use of the movement of a horse is a treatment strategy that is commonly used by physical therapists, occupational therapists, and speech-language pathologists to attend to impairments, functional limitations, and disabilities in patients with neuromotor or sensory dysfunction. The role of the child is not to influence or control the horse in this case, as this is a passive form of riding (Stuler, 1993, p. 10), but simply to respond by accommodating to the horse's movement with their body positioning. With each step of the horse, the rider's center of gravity is continually displaced, causing the rider to accommodate to these changes with "muscular activity and control to remain centered on his mount" (Engel, 1992, p. 20). This therapy is used as part of an integrated treatment program is used to achieve functional goals set for the rider and also to allow the rider to become more engaged in her treatment, recovery, and life.

Therapeutic Riding

Therapeutic riding is an equine assisted activity that contributes positively to the cognitive, physical, emotional, and social well-being of individuals with special needs (Professional Association of Therapeutic Horsemanship International, 2014b). The aim of therapeutic riding is to develop a lesson plan that addresses the capabilities of each rider with a combination of interesting and challenging experiences that makes the therapy beneficial to motivation (Engel, 1992, p. 20). The participants' awareness of accomplishment and happiness in their own achievement and progress are vital to the success of the therapy and to the attainment of meaningful self-realization. This therapy is highly successful because it has the ability to hide the therapeutic techniques within the riding skills so that the participant does not connect the recreational activity of riding with therapy. This in turn eliminates any negative attitude about the program and thus the rider may be more enthusiastic, make a greater effort within the program, and benefit more from the self-motivated therapy (Stuler, 1993, p. 2). Because therapeutic riding is an umbrella term that refers to riding in a setting which is specially equipped to handle people with special needs, the instructors who deliver this program are specifically trained not only in horsemanship but also in particular skills to effectively treat or remediate many types of disabilities. Some of these particular skills include the ability to understand problems presented by each disability with a great degree of comfort, to develop teaching techniques that accommodate special needs, to train horses specifically to carry disabled riders, to use special equipment to compensate for disabilities, and to be knowledgeable

with the safety factors unique to people riding with disabilities (Engel, 1992, p. 36).

Contrary to what people may believe, there are hundreds of therapeutic riding facilities in the United States, and even across the world, that offer these beneficial opportunities for children and adults who struggle with physical, developmental, and emotional difficulties. While riding a horse, people are free from their adaptive devices and equipment which may keep them from participating in certain activities, and they also improve their self-concepts as they "gain a sense of mastery over their fears of being on horseback and begin to perceive that they have been successful at a sport activity that is thought to be risky" (Kunstler & Daly, 2010, p. 198). Overcoming their fears of horseback riding, riders have experienced feelings of empowerment and increased self-esteem, which have led to significant changes within their lives. This new learning environment reduces the rider's awareness of her disability as this program seems more like play than therapy and it provides all of the benefits and motivation of any other recreational experience along with the added benefits of the "hidden" therapy (Kunstler & Daly, 2010, p. 198).

What are the certifications needed to run an Equine Assisted Therapy program?

The North American Riding for the Handicapped Association (NARHA) is a "membership organization that fosters safe, professional, ethical, and therapeutic equine activities through education, communication, standards, and research for people with and without disabilities" (National Center on Health, Physical Activity, and Disability, 2014). There are more than 650 NARHA programs in the United States and Canada and these centers serve approximately 30,000 individuals with disabilities. Originating in 1969, NARHA has ensured that therapeutic riding is both safe and accessible for children and adults in need of this program. NARHA also embodies an increasing number of equine assisted therapies and activities including recreational riding for individuals with disabilities: hippotherapy, equine assisted psychotherapy, driving, vaulting, competition and other therapeutic and educational interactions with horses (National Center on Health, Physical Activity, and Disability, 2014). NARHA takes pride in providing opportunities for people with various disabilities to challenge themselves, both physically and emotionally, and to set obtainable goals for themselves to improve their quality of life through the positive impact of the human/animal bond. Other traditional forms of therapy and associations for disabilities such as the American Occupational Therapy Association, the American Physical Therapy Association, the Muscular Dystrophy Association, the Multiple Sclerosis Society, the Special Olympics, the Spina Bifida Association, and the United Cerebral Palsy Association, have all come to recognize therapeutic riding as an essential tool to use in the path for

rehabilitation or remediation of disabilities (National Center on Health, Physical Activity, and Disability, 2014).

In order to become officially certified as a NARHA instructor, people must complete an intensified series of courses, exams, and practicums. The prerequisites for the exams are a documented knowledge of horsemanship including stable management, equine systems and disorders, and equine physiology and performance. It is also required that instructors have documented riding skills at an intermediate level which includes skills at the walk, trot, canter, simple lead changes, correct leads and diagonals, ground poles, basic suppling exercises, and lateral work. The rider must also be CPR and First Aid certified. Students are also eligible for the NARHA registered instructor exam once they have completed the required courses and practicums with a minimum of 85 hours of hands-on work including at least 25 hours of instruction under supervision. Once students pass the exam they become a certified NARHA registered instructor, which provides certification for teaching riders with both physical and cognitive disabilities (National Center on Health, Physical Activity, and Disability, 2014).

What are some local success stories with Equine Assisted Therapies?

GallopNYC

Alicia Kershaw is the director of GallopNYC, which is a therapeutic horseback riding organization that is based in Brooklyn, NY. The instructors at GallopNYC are certified by the Professional Association of Therapeutic Horsemanship International (PATH Intl.) and it is their belief that horses have the ability to calm riders with autism, allowing them to focus, think, and accept training (Autism Speaks Incorporated, 2014). GallopNYC uses a program called Therapeutic Horsemanship to help riders to connect with the horses and people, walk, use verbal communication, behave appropriately, and learn necessary life skills that can inspire each child to live their lives as fully, productively, and independently as possible. Alicia Kershaw stated “rather than ‘riding,’ we refer to this work as ‘horsemanship’ because we teach our riders how to care for horses in addition to riding them. The responsibility of handling a horse can help our students see the world from a different standpoint—the horse’s perspective.” Individual goals to work on skills, like speech, socialization, and physical fitness, are set for each rider. Each participant learns some measure of riding and horse skills, and some riders become quite accomplished in the equestrian sport. Some of the most frequent comments heard from parents and teachers watching the sessions, according to Alicia Kershaw, is “I didn’t know my child could DO that!” and “Our family is still beaming and glowing after seeing my son on a horse. It’s a dream come true. I have never seen him so responsive to any therapy so immediately.” (Autism Speaks Incorporated, 2014) Teachers have told GallopNYC that the benefits the children have experienced, which are measured

at each session for each rider, are beginning to extend to the classroom long after the riding session is over.

Lothlorien Therapeutic Riding Center

Lothlorien Therapeutic Riding Center is a certified PATH intl. riding facility located in East Aurora, NY and is available to children with varying disabilities (Hand, 2012). When families arrive at this facility, the students have the ability to interact with their horses in the pastures and barns as well as during their riding lessons and parents are encouraged to participate in the therapy sessions. In addition to the horses that are used in the lessons, there are also small Shetland or miniature ponies called "snow ponies," that are free to move in a small arena for the children to touch and interact before the lessons. An important sense of pride for Lothlorien stables is that they provide a sport in which children with disabilities can participate and increase their self-image as they tell their peers that they are participating in a sport just like the children who are involved in other sports (Hand, 2012).

Denise Clark, a client at Lothlorien, has a daughter who rides at the center despite her physical disability and her 5 surgeries (Hand, 2012). After starting her lessons, Denise Clark has seen an improvement in her daughter's mobility of her legs and hips and an improvement in self-esteem and confidence because she believes there are no limits to what she can do. Another client, Lynn McGuiver, has a daughter with severe developmental disabilities and wanted to find a fun activity in which her daughter could participate and one that was adaptable to her needs (Hand, 2012). Ms. McGuiver immediately noticed a big difference in her daughter's self-esteem and confidence on and off the horse. Thomas Hunt, a volunteer and client at Lothlorien, also has a daughter with physical and developmental disabilities who was receiving physical therapy and occupational therapy prior to the program (Hand, 2012). The effects of the therapeutic riding for Thomas Hunt's daughter are visible off the horse. Both of her other therapists are thrilled with the results, so much so that she is losing OT contingent upon her continuation of the program. Wendy Conti has a daughter with physical and developmental disabilities who is a part of Lothlorien's Hippotherapy program and when she started the program she was only able to sit on the horse for a maximum time of 10 minutes, and now her physical endurance has allowed her to ride for about an hour (Hand, 2012). Ms. Conti's daughter is receiving speech therapy, occupational therapy, and physical therapy all in one session, which has allowed her to improve on her physical, mental, and emotional well-being. This has also helped in better control of her seizures.

Franklin County, Pennsylvania Therapeutic Riding Center

Franklin County Therapeutic riding center, directed by Leah Good, provides a specialized autism program for riders age 3 to age 25 (Ejcarl9, 2010). The program mainly teaches riding and horsemanship skills, but also covers

behavior management, socialization, communication, and other skills that parents want their children to develop. Much like other treatment programs, the instructors tailor each program to the individual child based on the environment she needs and her behavioral needs. All instructors are certified in either phase one or two of the Pennsylvania Council Therapeutic Horsemanship and NARHA certifications. Unlike many of therapeutic riding programs, Franklin County Therapeutic riding center is one of the few facilities that receive grant funding to support families in need that cannot afford the riding program (Ejcarl9, 2010).

Caring for Colton: News 4 headline story

Today Colton looks like a normal child but three years ago when Colton was 18 months old receiving his immunizations he "disappeared" inside himself and some unconventional treatments brought him back (Tamita66, 2009). Because Colton displayed symptoms such as not talking, refusing to respond, and no longer making eye contact, the doctors diagnosed him with severe autism and said that he may never talk again and would require a lifetime of care. Colton was also exhibiting symptoms of sensory overload, meaning he could not be in crowds or have a lot of noise and people around him, sensitivity to touch, and even an uncontrollable compulsion to lick strange surfaces. One of Colton's doctors suggested that the family should try homeopathic remedies and chiropractic work to rid his body of toxins. Therapeutic horseback riding became another one of the unconventional therapies that the family tried in order to stop Colton's sensory issues with crowds and textures. Tamara Tanner developed a method of therapeutic riding specifically for Colton that used the unique walking patterns of a Missouri Fox Trotter to help stimulate Colton's brain. Colton now responds to his family and riding instructor and even comprehends a sense of humor, which is rare for children with autism. This humor was evident as he teased his riding instructor on video. After seeing this magical story, many people are trying to get scholarships, grants, and non-profit organizations to sponsor children with disabilities in the riding program because the lessons are not covered by insurance (Tamita66, 2009).

High Hurdles Therapeutic Riding

High Hurdles Therapeutic Riding facility, located in Sardinia, New York, was developed in 1997 by a committee of parents, educators, and professionals and now serves hundreds of riders with developmental disabilities from age three to eighty-three (Suburban Adult Services Incorporated, 2014). High Hurdles offers people with cognitive, emotional, and physical disabilities a unique opportunity for growth and development as a team of instructors and volunteers work together to help the students achieve challenging yet attainable goals while learning to care for and ride horses. With a person-centered philosophy customized lesson plans based on the goals and desires of each rider are created. Unlike some arenas that offer therapeutic riding programs, High Hurdles has a

state-of-the-art SureHands lift which allows riders who use wheelchairs to have a more dignified transfer to horseback, giving those individuals who may not otherwise have a chance to ride the opportunity to do so. High Hurdle's instructor, Megan Stapley, has a background in psychology, work experience in the human services field, and over 30 years' experience with horses. It is her belief that great instructors over the years have instilled strong fundamentals within her, which she then passes on to all of her students even though she believes the best instructors will always be the horses. The eight horses at High Hurdles are a unique mix ranging from a Percheron mare named Babe, to a Quarter horse gelding named Max, to a Haflinger mare named Crickett, all with a distinctive set of skills compatible to the unique riders that come into the program (Suburban Adult Services Incorporated, 2014).

Overall, despite all of the success stories, it is important for an instructor to "Respect who you are, the skills you possess, the profession you represent, and give your clients the most you can within the limits of your training" (Engel, 1992, p. 38) because that is all anyone can ask for.

What are the benefits of Equine Assisted Therapy for children with autism?

Physical Benefits

The physical benefits that a child with autism can gain through Equine Assisted therapy can include, but are not limited to fine and gross motor skills, manual dexterity, grasping, reaching, and sensory stimulation (Kunstler & Daly, 2010). While grooming horses and participating in other experiential activities, such as pushing to remove dirt from the horse's coat and hooves, that are therapeutic, hands-on learning activities, students have the ability to improve strength, coordination, sensory processing, neuromuscular function and self-control (Nelson, n.d., pg. 6). Neurological reflexes are essential to normal development. A neurological reflex defined as "an involuntary movement or exercise of function in a part excited in response to a stimulus applied to the periphery, the outer limits of an object, or viscera, the internal organs, and transmitted to the nervous centers in the brain or spinal cord" (Engel, 1992, p. 203). Primitive, early developed, reflexes gradually diminish so that higher patterns like the body's response to gravity and balance may appear, but when inhibitory control of higher brain functions are disrupted or delayed, like in children with autism, the primitive patterns dominate (Engel, 1992, p. 203). Children with disabilities ordinarily have very little access to the quality of exercise that riding a horse provides. Riding a horse involves all of the muscles in the body, strengthens respiration, and in addition stimulates all of the body systems (Engel, 1992, p. 37). The three dimensional swinging gait of the horse physically benefits the rider because it causes the rider's pelvis, trunk, and shoulder girdle to react in similar ways to those produced by walking. Balance is

also an active, constant process while riding as the horse gently shifts the rider off balance side to side, back and forth, and up and down movements (Engel, 1992, p. 37). Other physical benefits that Equine Assisted Therapy provides are postural adjustment, trunk stability, reduced spasticity, increased range of motion, weight bearing capabilities and motor planning (Stuler, 1993, pp. 13, 14, 44). Through Equine Assisted Therapy, children with disabilities are now capable of performing movements that would be impossible if they were on the ground.

Emotional Benefits

Equine Assisted therapy focuses on using the "horse as a medium through which to exert positive changes in the behavior of children" who have a disability like autism (Stuler, 1993, p. 11). People diagnosed with autism, who experience difficulty in creating and sustaining relations, seem to relate more easily and quickly to horses because of the animal's ability to offer the child non-threatening, non-judgmental, and essentially unconditional attention and affection. This emotional bridge between animal and human creates an access point that reawakens the child's enthusiasm for interpersonal relations as they acquire an increased sensitivity to non-verbal communication and a greater ability to recognize feelings in others (Nelson, n.d., p. 5). Sandy Dota, an Olympic rider on the United States disabled equestrian team, stated, "Being able to ride a horse, independently, was the crossroad of my life. Here I was, with no feeling in my legs or seat [after her fall off her horse], balancing on a horse, trotting over small jumps, and feeling great! I knew that if I could do this, I could do anything" (Stuler, 1993, p. 10). Due to a common interest in riding, people with and without disabilities can bond as well as compete in the sport of riding, essentially mainstreaming children with autism into a social environment. The emotional benefits of Equine Assisted therapy are some of the most important, but least understood benefits and are measured by physical appearance and attitudes, anxiety, intellectual and school status, behavior, popularity, and happiness and satisfaction (Engel, 1992, p. 206). The healing effect of positive emotions and laughter upon the human body can be seen through the child's determination, hope, faith, and purpose as progress within the program comes easier to the rider (Engel, 1992, p. 37).

Psychological Benefits

Serving people in Equine Assisted therapy programs can be a way of enhancing an individual's competency that will allow children with autism to function as independently as possible in their environment. Barbara Christian, a therapeutic riding instructor at Ember Ranch, accounts, "the confidence and self-esteem that comes from being able to control a powerful, 1,000 pound animal is just immeasurable" because horseback riding can provide a means to controlling one's future, as well as allow mobility beyond previous capabilities (Stuler, 1993, p. 1). In order for children to perform adequately in daily life, each hemisphere of

the brain must develop fully and there must be effective communication between both sides (Engel, 1992, p. 192). Many children with disabilities have a low self-concept, although assumptions should not be made for all. One method of improving self-concept is involvement in physical activities that can offer an opportunity for excitement and can provide challenge for individuals with disabilities who live within sheltered and risk-free environments (Stuler, 1993, p. 19). Activities performed in the natural environment and contain certain elements of danger have the ability to give children a perceived sense of overcoming challenges while attaching a healthy amount of risk (Stuler, 1993, p. 20). Other psychological benefits that children may reap from Equine Assisted therapy are a sense of frustration control, tolerance in dealing with failure, and the flexibility to change (Stuler, 1993, p. 50).

Educational Benefits

According to the Individual with Disabilities Educational Act of 1990, every child, whether he or she has disabilities or not, deserves access to a free and appropriate education funded by the government in a mainstream or special education classroom (Autism Speaks Incorporated, 2014). When an educator has a student in her classroom who is diagnosed with autism, that teacher should treat the individual according to the degree of her disability, approach the individual slowly and without demands, help make the individual comfortable with tasks that are tailored to her level and bring joy, and do not force or expect interaction including eye contact (Engel, 1992, p. 228). In an Equine Assisted therapy session with a focus on educational skills and abilities, most children tend to improve in at least one of the four essential areas of education: language skills, math skills, motor skills, and social skills (Stuler, 1993, p. 15). After the riding session, children with autism take the emotional, cognitive, and psychological work back to everyday life where they have the opportunity to practice and integrate new ways of being because of the "in the moment" demands that horses require (Nelson, n.d., p. 6). Children who receive speech-language therapy in a structured therapeutic horseback riding setting seem to facilitate better language structure and better use of the language for educational purposes (Stuler, 1993, p. 15). Other benefits from Equine Assisted therapy include increased work ethic, responsibility, assertiveness, communication, ability to follow verbal directions, change in locus of control, self-confidence, positive behavior, vocabulary, motivation, comprehension, self-soothing techniques, and ability to stay focused and on-task (Nelson, n.d., p. 5, & Stuler, 1993, pp. 11, 44, 50).

Special education students are served in a variety of ways including pull-out programs, partial integration or full inclusion in a general education classroom, and in special day-classes. Equine Assisted therapy can provide a wide spectrum of learning opportunities for special education students, enhancing existing services by complementing and extending other special learning

programs such as speech and language, adapted physical education, occupational or physical therapy, and psychological services (Engel, 1992, p. 520). The National Center for Therapeutic Riding (NCTR) in Washington, D.C. was the first educational riding program to be fully funded by a school district (Stuler, 1993, p. 15). The implementation of an Equine Assisted therapy program within a school district will give general education students the opportunity to gain disability awareness in addition to equestrian skills. For special education students, all activities are considered to be suited to the interests, capacities and limitations of the students who cannot safely or successfully participate actively in a regular education program (Engel, 1992, p. 521).

Conclusion

Research on the benefits of Equine Assisted therapy is often difficult to conduct due to the lack of available tools for assessment because riding programs often serve a diverse population and tools need to be developed for use in a variety of programs with differing client characteristics (Stuler, 1993, p. 15). Increased awareness of the need to design effective assessment tools is necessary as is more research using available instrumentation because the knowledge of the benefits of Equine Assisted therapy "among health, recreation, and educational professionals, and private and public agencies is vital for the therapeutic riding [program] to survive and thrive" (Stuler, 1993, p. 16). Equine Assisted therapy is both effective and beneficial to children with autism because it addresses all of the necessary areas that children need to treat or remediate the disability in one single activity. The equine related activities have been proven to be effective as a treatment by itself or in conjunction with other therapies presently being used with the specific child. Not only are the Equine Assisted therapy programs tailored to meet the individual's specific needs, the physical, emotional, psychological, and educational benefits and skills can be transferred and effectively used in daily life to control the symptoms that affect children with autism. Many therapists and instructors conclude that Equine Assisted therapy is an excellent intervention for all riders, disabled or not (Stuler, 1993, p. 20). The human-horse bond is very difficult to explain, let alone to document, yet it is becoming one of the most successful treatments for children with disabilities, including autism. Success stories from this amazing therapy need to be spread all over the world so that families know that they have options for dealing with the diagnosis of autism beyond traditional treatment methods.

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