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# Social Skills Improvement for an Adolescent Engaged in Equine Assisted Therapy: A Single Subject Study

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# Social Skills Improvement for an Adolescent Engaged in Equine Assisted Therapy: A Single Subject Study

## **Abstract**

The use of animals for therapeutic purposes has been documented for centuries. There is much anecdotal literature touting the benefits of animal assisted therapy; however, there are few controlled studies supporting these claims. Therapy animals are often used with the child/adolescent population. The few controlled studies in this area suggest that there are benefits to children/adolescents when using animals in therapy. One benefit seen is an improvement in social skills; however, this has only been investigated in two studies. The following dissertation is a single subject study of an adolescent's social skills during her engagement in 6 weeks of equine assisted therapy. The adolescent's parent completed the Social Skills Rating Scale each week, before, during, and after her treatment. In contrast to the available studies, the results suggest that there were no positive or stable changes observed in the adolescent's social skills during treatment, compared to her baseline scores. Reasons for this contradiction are examined and future research is recommended.

## **Degree Type**

Dissertation

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SOCIAL SKILLS IMPROVEMENT FOR AN ADOLESCENT ENGAGED IN EQUINE  
ASSISTED THERAPY: A SINGLE SUBJECT STUDY

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

PACIFIC UNIVERSITY, HILLSBORO, OREGON

BY

JENNIFER E. CARTINELLA

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

December 11, 2009

## Abstract

The use of animals for therapeutic purposes has been documented for centuries. There is much anecdotal literature touting the benefits of animal assisted therapy; however, there are few controlled studies supporting these claims. Therapy animals are often used with the child/adolescent population. The few controlled studies in this area suggest that there are benefits to children/adolescents when using animals in therapy. One benefit seen is an improvement in social skills; however, this has only been investigated in two studies. The following dissertation is a single subject study of an adolescent's social skills during her engagement in 6 weeks of equine assisted therapy. The adolescent's parent completed the Social Skills Rating Scale each week, before, during, and after her treatment. In contrast to the available studies, the results suggest that there were no positive or stable changes observed in the adolescent's social skills during treatment, compared to her baseline scores. Reasons for this contradiction are examined and future research is recommended.

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All of my supportive family members and friends!



## Introduction

Animals have been recognized for their therapeutic value in human lives since the 18<sup>th</sup> century. In 1792, it was first documented that patients were given small rabbits and fowl to care for to learn self-control in England (Mallon, 1992). In the 19<sup>th</sup> century, Florence Nightingale made claims that a bird could be the primary source of pleasure for persons confined to the same room for medical problems (Nimer & Ludahl, 2007). During this time it was also documented that animals were used therapeutically with patients with epilepsy in Germany. It wasn't until the mid to late 20<sup>th</sup> century that the therapeutic use of animals was documented in the United States following the publication of several case studies (Mallon, 1992). Since that time, several other studies (e.g., Anderson & Olsen, 2006; Daly & Morton, 2006; Lukina, 1999; Martin & Farnum, 2002; Poresky, 1997; Vidovic, Stetice, & Bratko, 1999) have been published documenting the benefits of owning animals and using animals therapeutically.

Animal-assisted activities (AAA) and animal-assisted therapy (AAT) are the two main terms used regarding the therapeutic interaction between humans and animals in the literature. AAA involves the use of animals to enhance quality of life and can be delivered in a wide variety of environments (e.g., schools, hospitals, nursing homes) by professionals, paraprofessionals, and/or volunteers. AAT is an intervention that uses animals to meet specific goals in a treatment plan and is delivered by a health/human service provider in the context of his/her professional practice (Souter & Miller, 2007). Although AAT and AAA are different by definition, in practice they are not clearly differentiated. The literature on AAA and AAT also reflects this lack of clear differentiation. Thus, for the purpose of this literature review, the two terms will be combined (i.e., AAA/AAT) when discussing human-animal therapeutic interaction.

Overall, the literature on AAA/AAT lacks empirically sound research methods. The majority of AAA/AAT literature consists of case studies and anecdotal reports that do not provide empirically sound results and leave the results open to considerable bias. This fact has been touched upon in AAA/AAT literature reviews for over 20 years. Brickel (1986) conducted a literature review of the range and benefits of “Pet-facilitated therapy” (PFT), which is another term for AAA/AAT. The article provided a review of both the anecdotal and research literature on PFT. Brickel concluded the majority of research has many methodological weaknesses, yet indicated that PFT appears to have benefits.

Mallon (1992) also completed a review of animal-assisted therapy literature with regard to its use as an intervention with children and adolescents. The author examined the findings of multiple studies investigating the benefits of contact with animals and the positive influence of animals in a co-therapist role. In doing this, Mallon (1992) highlighted several gaps in the literature and suggested future areas of research. Specifically, he noted the tendency in the literature to “interpret data defensively and to disregard that which is considered negative or nonsupportive of the value of animal facilitated therapy” (p. 63). Mallon (1992) indicated there is a need for appropriate research controls, longitudinal studies, more sensitive non-reactive measures, fiscal accountability and risk management among animal-assisted therapy programs, a definition of therapeutic gain, and more research examining the role of animals in facilitating nurturing behavior in male children.

Fawcett and Gullone (2001) conducted a literature review of human-animal interaction involving both adults and children and concluded that the majority of the literature is “flawed or empirically unsophisticated” (p. 128) and that most of the results involve anecdotal evidence or descriptions instead of empirical evaluations of the outcomes. As with the aforementioned

literature reviews, the authors called for more empirically sound research to determine the benefits of animal-human interaction.

The few meta-analyses examining the effectiveness of AAT/AAA interventions have also reported a lack of empirically sound studies in this area. Souter and Miller (2007) conducted a meta-analysis of the AAA/AAT literature to determine animal-assisted interventions' effectiveness for reducing depressive symptoms. The authors located the studies included in this meta-analysis by searching 18 databases using 21 search terms, searching websites on AAA and AAT, searching university websites, and searching the reference lists of the collected papers. Selection criteria for inclusion in this meta-analysis were: English language, random assignment, inclusion of a control group, exposure to some form of AAA or AAT, use of a self-report measure for depression, and sufficient detail to calculate effect size. The literature search led to 165 articles and, of these, only 5 met selection criteria. The authors chose the standardized mean difference between the treatment and control groups of each study to determine the effect size. The mean effect size found was in the medium range and was statistically significant. The authors concluded that despite the small number of studies that met inclusion criteria, the results of this meta-analysis supported AAA/AAT as effective interventions for alleviating depression.

Although the AAA/AAT literature has only a few well-controlled studies, the results of the uncontrolled studies may still support the effectiveness of AAA/AAT. For example, Nimer and Lundahl (2007) conducted a meta-analysis of the body of AAT literature (excluding AAA studies) to assess the average effect of AAT, investigate the stability of this effect, and to evaluate if variation in implementation of AAT influence outcomes. The results of the meta-analysis found high range effect sizes for autistic spectrum disorders, moderate range effect sizes for behavioral and medical indicators, and low to moderate range effect sizes for emotional well-

being indicators. Studies that used control groups did not significantly differ from those that did not, suggesting results from uncontrolled studies were representative of the effectiveness of AAT. The authors looked at studies that compared AAT with traditional interventions and found AAT was as effective as, or more effective than, other interventions. The authors concluded the results of their meta-analysis supported the use of AAT.

The benefits of owning an animal and including an animal in therapy are touted by animal-lovers worldwide. The enthusiasm of AAA/AAT researchers for human-animal interaction has been demonstrated in many subjective reports and case studies, which has also contributed to the lack of strict research protocol in the AAA/AAT literature. The small number of well-controlled studies in the AAA/AAT literature supports human-animal interaction as an effective intervention for individuals with a wide range of disorders. Yet, more empirically sound research is needed to determine what specific AAA/AAT interventions are most effective, what different types of animals bring to AAA/AAT interventions, and which populations benefit most from AAA/AAT. For the purpose of this review, the AAA/AAT literature regarding the child/adolescent population will be examined further, as well as the specific use of horses in AAA/AAT literature.

#### *AAA /AAT with Children and Adolescents*

Contact with animals is commonly said to be beneficial for children by researchers and clinicians (Mallon, 1992; Oliver & McLaughlin, 1995). Research has shown that simply owning a pet can be beneficial for children and adolescents. These benefits included an increase in empathy, pro-social skills, and attachment; yet the benefits are dependent on the child's attachment with the pet, attitude towards the pet, the type and preference of pet owned, and the gender and age of the child (Daly & Morton, 2006; Poresky, 1997; Vidovic et al., 1999). The

literature also suggests that there is a relationship between a child's attachments to his/her pet based on the child's parental-status (i.e., single, divorced, or married) and the child-parent attachment (Bodsworth & Coleman, 2001). However, one study found that pet ownership did not have a significant relationship with self-esteem for children (Arambasic, Kuterovac-Jagodic, & Vidovic, 1999) and that only some significant findings of pet ownership with children were found to be long-term (Paul & Serpell, 1996). Pet ownership research contributes to the notion that animal interaction is beneficial for children, dependent on the type of interaction and demographics of the child. The research regarding pet ownership is sparse and a number of the research studies had empirical weaknesses; thus, further research on the benefits of pet ownership with children is needed.

Similar to the pet ownership literature, the research regarding the use of AAA/AAT interventions with the child and adolescent population is in need of further empirical investigation. However, the majority of the recent research that has been conducted suggests that AAA/AAT with children can be beneficial. According to a literature review by Mallon (1992), researchers have concluded that common benefits children obtain from contact with animals include: companionship, affection, communication, humor, support, and anxiety relief. Regarding AAA/AAT with children, Mallon (1992) discussed that the animal, as a co-therapist, helps prepare children for later life experiences (sexual behavior, love, parenting, birth, and death), serves as the attachment figure, speeds up the therapeutic process, facilitates the relationship between child and therapist, and serves as a socializing agent. Oliver and McLaughlin (1995) reviewed the literature with regard to the value of therapy pets in the lives of children with special needs. The authors found that therapy pets can be beneficial for children with special needs including those who are mentally retarded, deaf and hard of hearing, speech

impaired, autistic, visually impaired, seriously emotionally disturbed, orthopedically impaired, and multi-handicapped. The reported benefits to these children include: increased socialization, increased attention and language skills, provision of safety and greater independence, improved behavioral control, and improved motor coordination. Although these research findings appear promising, Mallon (1992), and Oliver and McLaughlin (1995) concluded that the majority of the studies reviewed were based on anecdotal and qualitative evidence, and further empirical research is needed.

*Qualitative research of AAA/AAT with children.* As mentioned previously, the majority of AAA/AAT research studies with both adults and children have relied heavily on anecdotal evidence, which in turn leaves the results open for considerable bias. Although these qualitative studies may lack empirical soundness, the general conclusions drawn from these studies appear promising and can be a guide for further empirical research in this area. The general findings in the qualitative studies indicate that AAA/AAT may be helpful in decreasing anxiety in children as well as improving emotional well-being, behavior, social skills, speech and language abilities, and self-concept in children and adolescents. These findings will be discussed in more detail below.

Several qualitative AAA/AAT studies have been conducted regarding emotional well-being benefits for children and adolescents. Banman (1995) conducted an observational study involving AAT with children in a psychiatric facility. The author observed the children holding, petting, cuddling, and talking to the animals frequently and concluded that AAT is emotionally and spiritually beneficial for children in psychiatric settings based on her individual observations. The author went on to argue that it is beneficial for all humans, of all ages, to have animal contact to be physically, emotionally, and spiritually healthy. Although this article

provided good qualitative information about the behavior change seen in children when exposed to animals, the study lacked scientific design and the author over-generalized the results of this study to many other populations. Anderson and Olsen (2006) also conducted a case study regarding general emotional well-being. The authors reported both the child and the parents' thoughts about, and behaviors toward, the dog. These case summaries indicated that the majority of the parents and children believed the dog was helpful in increasing the children's emotional well-being. The authors concluded that having a dog placed in a special education classroom serving children with behavioral problems had a positive emotional effect on all six of the students. Other qualitative studies regarding emotional well-being have indicated that children seek out animal contact when upset or angry and that their interactions with the animals have a soothing effect on them and make them feel better emotionally (Mallon, 1994a; Mallon, 1994b). Mallon (1994a) concluded that children use farm animals as companions and confidants, and that talking to them helped them feel better. It was also found that latency-aged children (ages 8-12) benefited from these interactions with animals more than adolescents (Mallon, 1994a; Mallon 1994b). Therefore, the aforementioned qualitative research suggests there may be benefits to a child/adolescent's emotional well-being when engaged in AAA/AAT.

Another conclusion drawn from a qualitative study is that AAA/AAT may be helpful in decreasing anxiety for children. Reichert (1998) investigated the use of AAA/AAT for sexually abused children from her personal observations while being a counselor at Project Against Sexual Abuse of Appalachian Children. The author gave case examples of how a dog can be used to help a counselor establish a relationship with a child and set the child at ease. Reichert (1998) concluded that an animal can serve as a bridge between the counselor and the child by lowering the child's anxiety, helping the child to disclose abuse, and helping the child express

feelings. Although this author provided interesting suggestions of how a dog can be used in therapy with children who have been sexually abused, the study lacked scientific design or the use of standardized measures; thus, the results may have been influenced by the researcher's bias. This study suggests that AAA/AAT may be helpful in decreasing anxiety for children.

AAA/AAT has also been reported to be helpful in improving child/adolescent behavior (i.e., respect and compliance) and social skills (i.e., communication and empathy) in exploratory research. Anderson and Olsen (2006) reported that having a dog placed in a special education classroom (serving children with behavioral problems) had a positive effect on the six students in their case study. They concluded that the presence of a dog provided each participant with lessons in respect, responsibility, and empathy. They indicated that each student demonstrated each of these behaviors through their interactions with their peers. Ewing, MacDonald, Taylor, and Bowers (2007) also looked at behavior and social skills by conducting a case study to determine the effects Equine Assisted Activities has with four children. The authors concluded that the qualitative data (mainly based on interviews of their experiences) indicates there was varying positive effects for the individual participants. These effects include an increase in empathy, communication, social skills, and behavioral compliance. In a related study, Zasloff, Hart, and Weiss (2003) examined the effects AAA/AAT had on children's social skills and behavior. They examined the effects of a 3-week dog-training violence prevention program on pet care knowledge, violent behavior, and self-attitudes of six boys and girls aged 11 to 13 years. The authors conducted open-ended interviews with the participants. The participants reported an increase in interpersonal skills, conflict management, and attitude toward adults and peers. The authors concluded that learning and implementing the skills of training a dog could instill an increased sense of mastery and empathy for living things. Thus, the qualitative research indicates



the AAA/AAT may be helpful in increasing behavioral and social skills in children and adolescents.

Another finding in one qualitative research study is that AAA/AAT can be helpful in improving a child/adolescent's speech and language. In study by Macauley and Gutierrez (2004), the effectiveness of Hippotherapy (using equine movement as a treatment strategy) versus traditional therapy was examined for three boys, ages 9, 10, and 12 years, with language-learning disabilities. The qualitative data from this study were based on reports from parents and children. The parents reported their children made greater improvements in speech and language abilities, following Hippotherapy in comparison to traditional therapy. However, the children believed they made greater improvement following traditional therapy. The authors suggested this discrepancy may have been the result of the children not being aware of the relationship between the Hippotherapy activities and their language abilities, and suggested that further empirical research was needed to determine if Hippotherapy was helpful in improving children's language abilities.

Lastly, the qualitative research indicates that AAA/AAT is helpful in increasing child/adolescent confidence and self-concept. In a case study by Zasloff et al. (2003), child participants reported an increase in confidence and self-esteem. The authors concluded that learning and implementing the skills of training a dog could instill an increased sense of mastery and self-esteem. In a case study by Macauley and Gutierrez (2004), the child participant's parents reported their children made greater improvements in motivation and self-concept following a Hippotherapy program in comparison to traditional therapy. Thus, the exploratory research in this area suggests that there may be benefits of AAA/AAT to a child's confidence and self-concept.

The conclusions of the aforementioned exploratory research indicates that there are many possible benefits of AAA/AAT with children and adolescents, including decreased anxiety and improved emotional well-being, behavior, social skills, speech and language abilities, and self-concept. These findings appear promising, yet further empirical research is needed to support the existence of the positive effects of AAA/AAT with children.

*Empirical research of AAA/AAT with children.* The empirical research in the area of AAA/AAT with children is sparse, even though researchers have repeatedly called for more empirical studies in this area. The results of the empirical studies that have been conducted thus far indicate that AAA/AAT has benefits for children in a number of areas, including behavior, communication, mood, anxiety, sense-of-self, and social skills. The specific findings in these areas will be covered further below.

Regarding behavioral benefits, researchers have found significant changes in child behavior as a result of being involved in AAA/AAT. These benefits include increased self-control, attentiveness, and purposeful behavior. Lukina (1999) reported that following a dolphin-assisted therapy program, the child participants showed an increase in self-control, attentiveness, and purposeful behavior as reported via a parent questionnaire. Yet, this study had several weaknesses including the author not giving descriptions of the dependent variables and measures used. In another study looking at behavioral benefits, Macauley and Gutierrez (2004) reported that following a 6-week Hippotherapy program, the child participants showed an increase in motivation to attend and actively participate in therapy, as reported by their parents in a satisfaction questionnaire. Yet the sample size was small in this study (n=3) and standardized measures were not used. Nathanson and de Faria (1993) reported that children with mental retardation had a higher motivation to complete learning trials when they interacted with a

dolphin in the water versus playing solely with water toys. Limond, Bradshaw, and Cormack (1997) reported that following a 6-week animal AAT program, children with Down Syndrome showed significantly different behaviors when they were in the presence of a real dog versus an imitation dog. These behaviors included being more attentive to the animal and therapist, and less distractibility regarding extraneous variables (e.g., noise from other rooms). Yet, the weaknesses of this study include the authors not describing the behavioral coding methods and a small sample size (n=8). Thus, there appears to be some empirical evidence that AAA/AAT programs have a significant effect on child behaviors, including self-control, attentiveness, and purposeful/motivated behavior, yet further empirical research is needed in this area.

Regarding communication benefits, several researchers have found significant differences in speech and communication behaviors for children involved in AAA/AAT. Martin and Farnum (2002) found that interactions with a live dog has positive communication benefits for children with Pervasive Development Disorders in comparison to their interactions with a stuffed dog. The author reported that the child participants were more likely to communicate with a live dog and engage the therapist in discussions compared to being in the presence of a stuffed dog (Martin & Farnum, 2002). In another study, Nathanson and de Faria (1993) reported that children with mental retardation had a higher verbal response rate to learning trials when they interacted with a dolphin in the water versus playing in the water solely with toys. Nathanson (1998) conducted a later study to determine the long-term effectiveness of a dolphin-assisted therapy program on speech and communication. The author reported that the results of the questionnaires returned by the participant's parents indicated that after 2-3 years the participants showed improvements in their performance in speech therapy and in their ability to make social greetings after being part of the program. This study had a number of empirical

weaknesses, including the confounds of self-selection in returning the survey, and history and maturation confounding variables. In another study investigating communication benefits, Limond et al. (1997) reported that following a 6-week AAT program, children with Down Syndrome showed significantly different communication behaviors when they were in the presence of a real dog versus an imitation dog. These behaviors included being more verbally and non-verbally responsive to the therapist in a dog's presence. Yet, weaknesses seen in this study include the authors not describing the behavioral coding methods used and the sample size was small (n=8). In another study, Sams, Fortney, and Willenbring (2006) reported that children with autism engaged in significantly greater language use in animal assisted occupational therapy sessions versus traditional occupational therapy sessions. Although, a weakness observed in this study was the therapist was not blind to the purpose of the study, thus the possibility of bias affecting the results cannot be ruled out. In summary, empirical research supports that significant changes in speech and communication behavior can occur for children following involvement in AAA/AAT, yet further empirical research is needed in this area

A number of researchers have found significant changes in mood and anger symptoms in children and adolescents involved in AAA/AAT. Lukina (1999) reported that following a dolphin-assisted therapy program; child participants showed a significant decrease in depression symptoms and improved sleep as reported via a parent questionnaire. Yet, this study had several weaknesses including the author not giving descriptions of the dependent variables and measures used. In another study, Hanselmann (2001) reported that adolescent participants had a significant decrease in state and trait anger after an animal-assisted anger management group. This study had a number of empirical weaknesses including an overall lack of clarity regarding the methods used and a small sample size. In another study, Kaiser, Spence, Lavergne, and Vanden Bosch

(2004) reported that following 5-day therapeutic riding camp, the child and adolescent participants showed a significant decrease in their anger, as measured by the Children's Anger Inventory (Nelson & Finch, 2000). This study was limited in that it had a small sample size (n=16). Taken together, these empirical studies indicate that there are significant improvements in mood and anger symptoms for children and adolescents involved in AAA/AAT, yet further empirical research is needed in this area.

Regarding anxiety benefits, researchers have found that children involved in AAA/AAT show improvements in anxiety symptoms; yet, other researchers have reported no significant changes in anxiety levels. Hansen, Messinger, Baun, and Mengel (1999) reported that younger children (ages 2-6) showed significantly lower behavioral distress while undergoing a physical examination when a dog is present, compared to children who do not have a dog present during a physical examination. Although this study had a solid empirical design, one weakness observed was the author did not describe the reliability of the observational measures used. In another study examining the effects of AAA/AAT on anxiety, Havener et al. (2001) reported that there was no significant difference in peripheral skin temperature or behavioral distress for children undergoing dental procedures with a dog present, compared with children who did not have a dog present. The authors concluded that these results are likely due to the fact that the majority of the children undergoing the procedures did not have an increased level of distress at baseline. There were empirical weaknesses in this study that could have affected the results, including the physiological assessments were not valid measures to use with children, and that the children were physically restrained. Thus, their scores on the behavioral distress observations could be skewed due to being prevented from moving. In another study, Lukina (1999) reported that following a dolphin-assisted therapy program, child participants who have symptoms of

phobia, enuresis, and stammering showed a significant decrease in night phobias and hysteria, as reported via a parent questionnaire. Yet, this study had several weaknesses including the author not giving descriptions of the dependent variables and measures used. In conclusion, the current research suggests that AAA/AAT is helpful in reducing anxiety symptoms, yet this applies to children with a heightened level of anxiety at baseline. Further empirical research is needed in this area.

Another benefit of AAA/AAT that has been supported by a small number of empirical studies is that of sense-of-self improvement for children. Macauley and Gutierrez (2004) reported that following a 6-week Hippotherapy program; the child participants' parents reported them to have made improvements in self-concept following the Hippotherapy in comparison to traditional therapy. Yet weaknesses observed in this study include a small sample size (n=3) and that standardized measures were not used. In another study related to sense-of-self, Kaiser et al. (2004) reported that following 5-day therapeutic riding camp, there was no significant difference between the child and adolescent participant scores on the Self Perception Profile for Children, which measures self-competence. The results of these two studies, in combination with the aforementioned qualitative studies regarding sense-of-self indicate that AAA/AAT has some beneficial impacts on child/adolescent sense of self; yet, more empirical research is needed in this area.

Similarly to the research of AAA/AAT and children's sense-of-self, a very small number of empirical studies have been conducted regarding social skill improvement for children involved in AAA/AAT. The aforementioned qualitative research regarding AAA/AAT and social skills, and the empirical studies that have been done thus far in this area, indicate that improvement in social skills are seen in children involved in AAA/AAT. The reported benefits to

social skills in the empirical research include improved social interaction, increased social greeting initiations, and maintaining eye contact. Nathanson (1998) conducted a study to determine the long-term effectiveness of a dolphin-assisted therapy program for children. The author reported that the results of questionnaires returned by the participant's parents indicated that after 2-3 years the participants showed maintained improvements in maintaining eye contact and initiating social greetings after being part of the program. Although, this study had a number of empirical weaknesses, including the confound of self-selection in returning questionnaires, and history/maturation confounding variables. In another study regarding social skills and AAA/AAT, Sams et al. (2006) reported that children with autism engaged in significantly greater social interaction in animal assisted occupational therapy sessions versus traditional occupational therapy sessions. A weakness observed in this study was that the therapist was not blind to the purpose of the study; thus, the possibility of bias affecting the results cannot be ruled out. The results of these two studies, in combination with the aforementioned qualitative studies regarding social skills indicate that AAA/AAT has some beneficial impacts on child/adolescent social skills. However, more empirical research is needed in this area to determine if there are social skill improvements with children involved in AAA/AAT.

In conclusion, the empirical research of AAA/AAT with children and adolescents is sparse, even though researchers have repeatedly called for more empirical studies to be conducted in this area. It is also apparent that many of the empirical studies done thus far are beset with empirical weaknesses, and some of these studies have failed to report significant differences. Although there are very little empirical research studies in most of the aforementioned areas regarding AAA/AAT, the area regarding AAA/AAT and social skills has very little empirical research. Therefore, further empirical research is still needed to determine if

AAA/AAT is indeed beneficial for children in a number of areas, especially regarding social skill improvement.

#### *AAA/AAT with Horses*

Another area in which there is very little AAA/AAT research, and which is of particular pertinence to this dissertation, is the use of a horse as the therapeutic agent. Although there are many types of animals used in AAA/AAT (e.g., dogs, rabbits, dolphins, cows, birds), horses offer a unique type of therapeutic interaction that other animals do not. Horses are prey animals and are constantly scanning the environment for danger. They are highly attuned to their handlers and mirror their handlers' emotions and behaviors. Working with a horse requires its handler to develop a trusting relationship, to set consistent and firm boundaries, and to carry an air of confident competence. Forming a relationship with, handling, and riding a large animal such as a horse offers a sense of empowerment to the individual that is difficult to reproduce in a traditional treatment setting. Additionally, the physical nature of grooming a horse, riding a horse, and engaging in the natural environment of a stable offer added experiential, physiological, and social benefits to treatment. Thus, the research of using a horse as a therapeutic agent appears warranted, as it seem to offer a number of different benefits compared to using other animals.

There are a number of terms for using a horse therapeutically, and they are used interchangeably in field of AAA/AAT. These terms include equine-assisted therapy (EAT), equine facilitated psychotherapy (EFP), riding therapy (RT), and equine-assisted experiential therapy (EAET). For the purpose of this section, EAT will be the general term used to refer to using a horse therapeutically.



Consistent with the majority of the AAA/AAT research, EAT research also lacks rigorous, empirically sound methods. The majority of research on EAT is composed of subjective theoretical reports or qualitative studies, which provide some helpful information about EAT but are not empirically sound and open to bias. The theoretical articles in the literature mainly provide information about EAT, observations about possible benefits, and suggestions of how to facilitate it effectively. Rothe et al. (2005) authored one such theoretical paper in which they examined the process of EFP and presented their opinions about its utility with children. The authors stated the objectives of EFP with children are to develop motor coordination, communication skills, assertiveness, self-efficacy, creativity, problem solving, responsibility, and relationships. The authors suggested children with anxiety, behavioral problems, mood disorders, autism, and post-traumatic stress disorder would benefit from EFP. The authors recommend EFP therapists work with a horse professional when conducting EFP in a farm or stall setting. Rothe et al. (2005) suggested that during therapy the therapist and horse professional model communication, respect, and decision-making while normalizing the child's responses to the horse. The authors gave examples of how traditional therapies (e.g., CBT, play-therapy) could be adapted to EFP and recommended creating a treatment plan for child and horse. The authors concluded that EFP is a beneficial treatment modality for people who ordinarily shun emotional and physical closeness. Vidrine, Owen-Smith, and Faulkner (2002) authored another subjective theoretical paper regarding EAT. The authors presented a report of the value of therapeutic vaulting as an intervention for children based on their personal experiences at Horse Time, an EFP practice at a 120-acre horse farm. The authors defined therapeutic vaulting as an activity based on competitive vaulting techniques and structure with an emphasis on teamwork, communication, self-expression, and developmental sequence. The

authors reported the benefits of the Horse Time therapeutic vaulting model among its clients included: organizational skills, spatial relations, body awareness, appropriate threat appraisal and help-seeking behavior, trust, positive interpersonal interactions, behavior self-modulation, empathy, and appropriate physical affection. The authors suggested these benefits resulted from the development trusting relationships with the horses, staff, and clients at Horse Time, the structured nature of vaulting, the symbolism of the configuration of vaulting with the therapist at the center controlling the horse, unconditional positive regard from the horses, and the therapist providing a role-model for limit-setting. The authors concluded that more quantitative evidence is needed in order for it to gain acceptance by the mainstream American medical community.

In addition to the aforementioned subjective theoretical papers published, a few qualitative studies have been conducted regarding EAT. The results of these studies suggest that EAT may be helpful in improving self-efficacy, self-esteem, confidence, social interaction. One such study, conducted by Bizub, Joy, and Davidson (2003) involved EAT with five participants who had primary diagnoses in the schizophrenia spectrum and were in a psychiatric rehabilitation program. The authors used a qualitative analysis to describe how the program was helpful for each of the participants. The authors summarized that there are numerous benefits to therapeutic horseback riding for people with psychiatric disabilities. Common benefits reported by participants included increased self-efficacy and self-esteem. Burgon (2003) also conducted a qualitative case study over a 6-month period to determine if participants benefited from RT with horses in terms of confidence, self-esteem, and social-interaction skills. The participants were six Caucasian women between the ages of 30 and 40 with mental health conditions, such as depression and schizophrenia, who received RT on a weekly basis. The participants were interviewed and given pilot questionnaires about their experiences. Common benefits reported by

the participants included improved confidence, improved self-concept, and aiding in social stimulation. Christian (2005) conducted a case study of a 26-year-old woman with anorexia nervosa in a Christian residential treatment center for eating disorders. After taking part in only two RT sessions, the participant was reported to have an improved attitude and behavior at the center after her EAT sessions. She was reported to engage in all her therapeutic activities and appeared to be working towards her recovery by the end of her stay there. The author concluded that the EAT is a way to reach clients in a way that talk therapy cannot. The author suggested that the EAT activities helped the participant gain insight into her problems and learn to use her support systems. Thus, the results in these few qualitative studies suggest that EAT may be helpful in improving self-efficacy, self-esteem, confidence, social interaction.

Although qualitative studies have suggested EAT has the aforementioned positive benefits, the few quantitative studies done in this area have shown mixed results of EAT's benefits. Ewing, MacDonald, Taylor, and Bowers (2007) conducted a qualitative and quantitative research study to determine the effects Equine-Facilitated Learning has on sense of self, empathy, internal locus of control, depression, and loneliness in youths with severe emotional disorders. The participants of the study were 28 youths, ages 10-13, from an alternative day school. The participants consisted of both male and females, were from various ethnic backgrounds, and had IQ's in the average range. The participants were engaged in EAT for two 2-hour sessions, for a total of 9 weeks. The program consisted of each participant being assigned to a horse and engaged in riding lessons and care-taking activities with the horse and a volunteer. Both groups were given pre-tests and post-tests, which consisted of the Self-Perception Profile for Children, The Empathy Questionnaire, The Locus of Control Scale, the Children's Depression Inventory (CDI), the Children's Loneliness Questionnaire. The authors

found no significant differences between the groups on all of the measures given. The authors suggested further research be conducted to determine the effects of AAA/AAT.

While the above study did not find significant results of their quantitative analyses, some studies have done so. The findings in the empirical EAT research suggest that EAT may help reduce anger, decrease psychological distress, and increase psychological well-being. Kaiser et al. (2004) conducted a pilot study to examine the effect of a 5-day therapeutic riding day camp on children's anger, quality of life and perceived self-competence. The participants were 16 children and adolescents (ranging from 7-17 years old) with no known physical or psychological problems. The participants were given measures prior to riding on day 1 and after riding on day 5. The measure for anger was the Children's Anger Inventory (CAI) and was reported to have good reliability. The measure of quality of life was the Peds Quality of Life scale (PedsQL 4.0), and was reported to have good reliability. The measure of self-competence was the Self Perception Profile for Children and was reported to have adequate reliability. The participants took part in a 5-day therapeutic riding camp that consisted of five full days of riding instruction and other horse related activities. The results indicated that there was a significant decrease in the overall scores on the Children's Anger Inventory after the five days of the riding camp. The authors did not find a significant difference between the scores on the PedsQL or the Self Perception Profile for Children. The authors concluded that five days of therapeutic horse camp can help reduce anger in able-bodied children. In another quantitative study, Klontz, Bivens, Leinart, and Klontz (2007) examined the effectiveness EAET with adults. The participants were 31 men and women (age range between 23-70) in a residential treatment facility who took part in 8 EAET group treatment programs in an 8-month period. The measures included the Brief Symptom Inventory (BSI) to measure psychological symptoms patterns, and the Personal

Orientation Inventory (POI) to measure self-actualization. The participants were given the measures before the program, immediately following completing the program, and 6-months following the completion of the program. The results indicated that there was a significant decrease in the Global Severity Index scores of the BSI from pretest to post-test, but no significant difference between post-test and 6-month follow up. The results also indicated that there was a significant increase in the POI scores from pretest to post-test, but no significant difference between post-test and 6-month follow up. The authors concluded that the participants showed significant and stable reductions in overall psychological distress and enhancements in psychological well-being from pretest to post-test and follow up. The authors indicated that due to lack of control in their study their results should be interpreted with caution and used as a guide for further research studies.

The aforementioned studies reflect both the potential and the lack of sufficient empirical support of EAT. The qualitative research conducted suggests that EAT may help improve self-efficacy, self-esteem, confidence, social interaction. Other qualitative studies suggest the EAT may also be helpful in improving empathy, communication, social skills, and behavioral compliance in youth. However, only significant improvements in psychological well-being and reductions in psychological distress for adults, and reductions in anger for children, are supported by quantitative data. Thus, more quantitative research is needed to support EAT as an effective intervention for both adult and child populations.

AAA/AAT literature indicates there is a need for further empirical research in many areas of AAA/AAT. One specific area that has very little empirical support is that of social skill improvement for children and adolescents involved in AAA/AAT. Another area that has very little empirical support is the use of horses as the therapeutic agent in AAA/AAT programs.

Therefore, an empirical investigation of social skills improvement for children/adolescents involved in an EAT program is warranted at this time. The purpose of this dissertation is to determine if an adolescent's social skills improve after taking part in an EAT program.

### *Hypothesis*

The hypothesis for this study was based on the results of the research regarding AAA/AAT, which has indicated that children and adolescents show improved social skills after being involved in AAA/AAT (Nathanson, 1998; Sams et al., 2006). It was therefore hypothesized that the participant's parent would rate them as having a positive and stable increase in their Social Skills raw scores on the SSRS – Parent Form after engaging in EAT (B) compared to their baseline scores on the SSRS – Parent Form (A).

### Method

#### *Participant*

The participant for this study was a 13-year-old Caucasian female. The participant was selected from a wait list for the EAT program (Sport Riding) at the Forward Stride Center for Therapeutic Recreation (FSCTR) in Beaverton, Oregon. The exclusion criteria for the Sport Riding program at FSCTR included children/adolescents with severe developmental or cognitive disabilities. There were no other exclusion criteria for this study. The participant was selected based on the fact that she was the only adolescent on the wait list for the EAT program (Sport Riding) at FSCTR. Her parents reported that she had difficulties with anxiety and social skills; therefore she was deemed appropriate to enroll in the study. During the enrollment process at FSCTR, the participant's parents were asked to read and sign an informed consent form (Appendix A) to be in the study, before they were asked to complete the initial SSRS form. The participant was asked to sign an assent form as well (Appendix B).

### *Measure*

*Social Skills Rating System (SSRS)*. Gresham and Elliot (1990) created the SSRS to broadly assess social skills in children and adolescents. The SSRS is a standardized, norm-referenced instrument designed to measure a child's social behavior in school and family settings. The authors included academic competence and problem behavior domains to this instrument as information from these two domains is critical in determining social skill problems as well (Benes, 2008). The SSRS offers three methods of evaluation: Student Form, Parent Form, and Teacher Form. The parent and teacher forms are divided into three developmental levels (preschool, K-6<sup>th</sup> grade, and 7<sup>th</sup>-12<sup>th</sup> grade) and have an item range between 49-55. The student forms are divided into two developmental levels: Elementary Level (3<sup>rd</sup>-6<sup>th</sup> grade) and Secondary Level (7<sup>th</sup>-12<sup>th</sup> grade) and have an item count of 34 and 39 respectively. The items on all forms are written in behavioral terms; thus very little inference is required of the rater when responding to the items. As the Parent and Student Forms will be used in this study, the Teacher Form will not be reviewed further in this section.

The SSRS Parent Form can be filled out by either a parent or guardian and consists of items that ask for the frequency of a specified behavior on a 3-point scale (0, Never; 1, Sometimes; 2, Very Often). The parent is also asked the importance of the behavior on a 3-point scale (0, Not Important; 1, Important; 2, Critical). The Parent Form produces four Social Skill Subscale raw scores (Cooperation, Assertive, Responsibility, and Self Control) and a Social Skill Scale total raw score. In addition to these, the Parent Form also produces two Problem Behaviors Subscale raw scores (Externalizing and Internalizing) and a Problem Behavior Scale total raw score. The Social Skill and Problem Behavior Scale raw score totals are converted in to Standard Scores. The SSRS Student Forms are based on self-ratings. The response format for the

Secondary Level Student Form is similar to the Parent Form, yet the Elementary Level Student Form only asks for a frequency rating of the behavior only. Additionally, the Student Forms have an Empathy subscale instead of the Responsibility subscale seen in the Parent Form. The Student Forms also do not have Problem Behavior Scales.

The standardization sample for the SSRS included 4,170 self-ratings of children and youth, 1,027 parents, and 259 teachers; had approximately the same number of male and female students; and represented a sufficient number of children/youth from each grade level (i.e., preschool, K-6<sup>th</sup> grade, and 7<sup>th</sup>-12<sup>th</sup> grade) (Benes, 2008). The student sample included both regular education and special education students (i.e., Mentally Handicapped, Learning Disabled, Behaviorally Disordered, and “Other”). The sample was reported to have a slight over-representation of whites and blacks, and a slight under-representation of Hispanics. The standardization sample was drawn from 18 states in Northeast, North Central, Southern, and Western regions of the United States. The sample also represented individuals from urban, suburban and rural communities (Benes, 2008).

The authors reported the coefficient alpha for all forms ranged from .83 to .94 in regards to the Social Skills Scale and from .73 to .88 for the Problem Behavior Scale (Benes, 2008). The test-retest reliabilities were computed for a 4-week period. The correlations for the Parent ratings were .87 for the Social Skills scale and .65 for the Problem Behavior scale. The correlations for the student ratings were .68 for the Social Skills scale. Regarding the measure’s construct validity, Benes (2008) reported that the construct validity of the Parent form was supported by moderate to high loading on factor analyses using the normative sample. However, the Elementary Student Form contains 10 subscale items with factor loadings below .30, these items are on the Cooperation and Assertion subscales. Benes (2008) suggested that these subscales



should be interpreted individually with caution. Regarding the measure's criterion-related validity, Benes (2008) reported that in a number of studies the SSRS correlated highly with other somewhat similar measures of social skills (e.g., Social Behavior Assessment, Harter Teacher Rating Scale, Piers-Harris Children's Self-Concepts Scale, and the Child Behavior Checklist). Benes (2008) reported that the results of the criterion-related validity and construct validity studies present strong evidence in support of the validity of the SSRS.

### *Procedure*

This study utilized a single subject case design. Single subject case experiments have been shown to be an efficient and empirically validated method of behavioral investigation (Hersen & Barlow, 1976). This method provides a clear evaluation of the effectiveness of an intervention by applying and removing a specific treatment with an individual. The effects of adding or changing the treatment can be immediately recorded and compared to the participant's baseline behavior as a control. The use of single case methodology also has the advantage of making the effects more visible, which otherwise would be hidden if an experimenter were to average them across a larger number of subjects.

The SSRS Social Skills raw scores from the Parent Forms served as the data for this study. The form filled out by the participant's parent during the enrollment process served as the first baseline data point (A). A SSRS form was given to the participant's parent to fill out each week prior to the participant's EAT program start date, and again on the first day of the participant's EAT program. A total of three baseline points were obtained. To maximize reliability, the same parent (the participant's father) who rated the participant at the baseline continued to be the rater during the entire experiment.

After the baseline data was collected, the participant started the EAT program (Sport Riding) at FSCTR. The Sport Riding classes at FSCTR are in offered as a group format once a week for approximately 50 minutes each session. Specially trained and certified instructors teach the Sport Riding classes, which involve teaching the child how to groom and do other caretaking (groundwork) activities with the horse. The first time students are then taught balanced seat horseback riding and the basics of horsemanship.

Once the participant began the EAT program, her father was given a SSRS Parent Form to complete each week at home, prior to her riding session. The data were plotted and analyzed weekly to determine if and when change occurred. In addition to this analysis, the researcher interviewed her father each week to note any changes in her routine or differences in her EAT sessions. This was done to provide supplemental information that could later explain possible differences in the data.

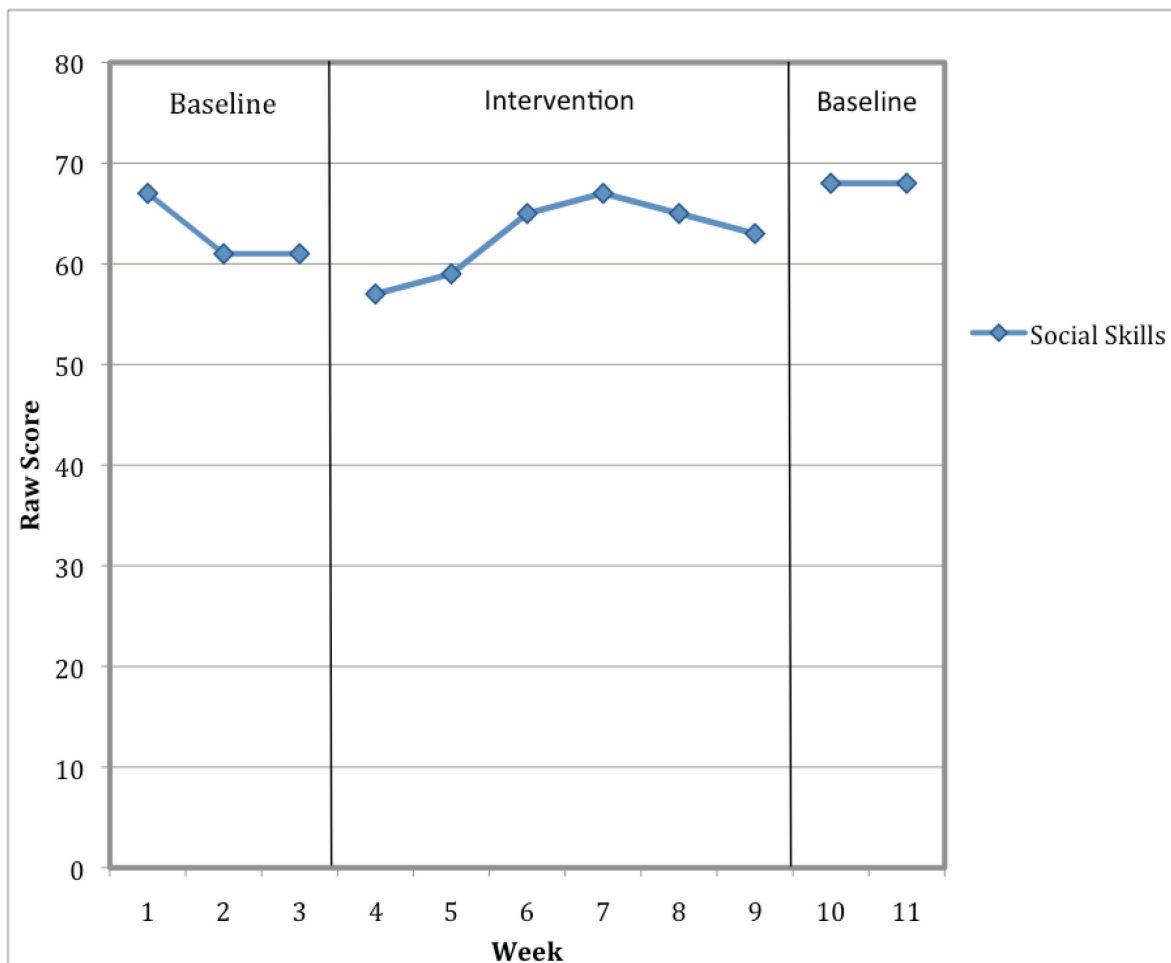
According to the previously reviewed research regarding social skills improvement and AAA/AAT, change was been seen within a 2-month period. Therefore, it was reasonable to assume that change would occur during an 8-session time frame; thus, the data for this research study were planned to be collected for a maximum of 8 sessions from the beginning of the participant's program. However, due to financial difficulties, the participant had to withdraw from the treatment after her 6<sup>th</sup> session. Her parent was asked to complete the SSRS forms the days of the participant's missed her last two EAT sessions. This changed the study from an AB design to an ABA design.

## Results

It was expected that after engaging in EAT, the participant would show a positive and stable increase in her social skill raw scores on the SSRS – Parent Form. This hypothesis was based on similar positive results seen in AAA/AAT studies (Nathanson, 1998; Sams et al., 2006). In review of the trend of the data collected for this study (See Figure 1), it appears that prior to the EAT intervention, the participant showed a downward trend in her social skills. After the EAT intervention began; the participant's social skills raw scores showed a gradual upward trend, suggesting an increase in social skills from baseline. After the fourth session, however, the participant's social skills raw scores evidenced a downward trend. It should be noted that around this time the participant's parents had told her that she would have to quit the EAT program due to familial financial hardship. At the second baseline (A), one can see that the participant's social skills raw scores increased compared to her intervention scores (B). In addition to this, her second baseline scores are equivalent to her first baseline score. Finally, there were no intervention data points that exceeded her baseline data points. Therefore, there was no positive or stable change observed in the participant's social skills raw scores during the EAT intervention compared to her baseline scores.

Figure 1

Social Skills Baseline and Intervention Line Chart



## Discussion

The purpose of this study was to investigate whether an adolescent's social skills would improve after engaging in an EAT program. It was hypothesized that the participant's social skills raw scores on the SSRS – Parent Form would show a positive and stable increase after engaging in EAT compared to her baseline scores. Analysis of the data did not indicate a positive and stable increase in the participant's intervention scores compared to her baseline scores. In fact, the participant's intervention scores were lower than the initial baseline data and final baseline data. This means that her father rated her social skills to be lower while she was involved in the EAT program compared to when she was not involved in the program. Upon examining the data, it appears that during the first 4 weeks of the program the participant's social skills were lower than her baseline, but gradually improved. One hypothesis of why the participant's raw scores were lower during the first few weeks of the intervention could be due to the anxiety that occurred for the participant during the first part of the program. The participant was expected to learn many new skills, including riding a horse and learning how to groom and care for the horse. During this time, the participant's father also reported that she had a saddle that did not fit well, which he reported made learning to ride more difficult for her. Therefore, the anxiety experienced by the participant during the first sessions could have impacted her evidenced social skills.

One hypothesis of why there was no difference seen in the participant's raw scores was due to the high level of social skills she evidenced at baseline. During the enrollment process, the participant's parents verbally reported that she had difficulty with social skills. However, her baseline scores on the SSRS were in the non-clinical range when compared to the normative sample. Therefore, it is hypothesized that the participant's skills did not show a positive and

stable change because her skills were already at an age appropriate level. Another reason the participant's raw scores began to decrease during the intervention (See Figure 1 – week 8) could be due to her parents telling her she was being withdrawn from the treatment due to familial financial hardship. This knowledge could have affected her involvement in treatment and her level of social skills. It is also hypothesized that if the participant continued treatment, her raw scores would have continued to follow the original positive trend, and eventually increased over baseline.

This study has several limitations; thus caution will need to be taken when interpreting the findings. The data analyzed came from one participant, meaning this study has a very small sample size. The lack of a larger sample size makes it difficult to establish reliability, which creates limitations to the generalizability of the results. Thus, populations outside of the one represented in this dissertation (i.e., adolescents of a different demographic background and in different EAT programs than the participant) may not benefit from the results of this dissertation research. Another limitation in this study is the use of an other-rater (parent report) measure to assess for social skills problems, offering only a subjective report of this construct. A more objective measure could have been having an observer code her social behaviors in a natural setting, such as school or home. Finally, another limitation of this study is that the data were taken within a brief period of time; therefore, long-term effects could not be analyzed in this study.

Future researchers may want to replicate this study by using another measure of social skills. Although the participant in this study was observed to have difficulties with social skills by her parents and by the researcher, the results of the SSRS – Parent Forms indicated that she had average social skills compared to other adolescents her age. Therefore, another measure of

social skills that is less subjective (direct observation) may be more appropriate for this study. It is recommended that when replicating this study, the design include more intervention sessions to determine if positive effects are seen after a longer period of time. It may also be helpful to utilize an ABAB design to determine if the participant's social skills change during times of no EAT intervention.

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## Appendix A



Pacific University IRB

## Parental Informed Consent Form

### 1. Study Title

Social Skills Improvement for an Adolescent Engaged in Equine Assisted Therapy: A Single Subject Study

### 2. Study Personnel

	Primary Investigator	Primary Research Advisor	
<b>Name</b>	Jennifer Cartinella, M.A.	Catherine Miller, Ph.D.	
<b>Institution</b>	Pacific University	Pacific University	
<b>Program</b>	School of Professional Psychology	School of Professional Psychology	
<b>Email</b>	jcartinella@pacificu.edu	milllerco@pacificu.edu	
<b>Telephone</b>	(503) 358-3733	(503) 352-7324	

### 3. Study Location and Dates

Forward Stride Center for Therapeutic Recreation (FSCTR) in Beaverton, Oregon.

December 2008 – March 2009

### 4. Study Invitation and Purpose

Your child is invited to participate in a research study on the relationship between social skills and equine assisted therapy. The results of this study will be used to inform health and equine assisted therapy professionals about the effects of equine assisted therapy.

### 5. Study Materials and Procedures

Once agreeing to have your child participate in this study, you will be asked to complete a social skills form in which you will answer questions about your child's social skills for screening purposes. This form takes approximately 10-15 minutes to complete. Only one adolescent participant will be enrolled in this study based on his/her level of social skills

determined by the social skills parent form. If your child is not enrolled in this study, we will notify you of this, and you will not be asked to perform any other activities for this study. Please note that if your child is not enrolled in this study, this in no way indicates that your child has social difficulties or other concerns. We are looking for a particular level of social skills for this study, and are selecting one participant based on that level of social skills.

If your child is selected to be in the study, the researcher will contact you and provide you with additional social skills forms to complete. For this study, you will be asked to complete one social skills form each week prior to your child beginning the Sport Riding program at FSCTR. Once your child begins the program, you will be asked to complete one form each week, for a total of eight weeks. You will be given this form to complete by the researcher, or a research assistant, during or after your child's riding class in the FSCTR office. If for any reason your child is absent from his or her riding class, we will ask you to complete a social skills form the day your child misses his or her class and bring it to the researcher the following week. After the eight weeks are complete, you will no longer be asked to perform any other activities for this research study.

## **6. Participant Characteristics and Exclusionary Criteria**

For your child to qualify to be in this study, he/she must be enrolled in the Sport Riding program at FSCTR, be between the ages of 13-17, and can be of any gender or ethnic background.

## **7. Anticipated Risks and Steps Taken to Avoid Them**

There are minimal risks for you and your child while taking part in this study. One potential risk is that you and your child may endure some stress if you are not enrolled in this study. Please note that if your child is not selected to participate in this study this in no way reflects that your child is having difficulties. We are choosing one child to participate in this study based on a particular level of social skills, yet this does not indicate that your child has significant concerns.

Another potential risk is that you may endure some stress or strong emotional reactions while completing the Social Skills Rating System measure about your child, or from having to take extra time to complete the measure each week. The researchers will attempt to minimize your stress by having you fill out this measure in a low stress environment and will be accommodating to meet you and your child's needs and any time constraints during this process.

You or your child may also experience stress or strong emotional reactions in being identified as a participant of a psychological study. Much effort will be taken to protect you and your child's confidentiality. For instance we are having you meet the researcher in a more private area (the office) at FSRTC as opposed to the stable where the EAT activities take place. This will help prevent other students and instructors from knowing you and your child are involved in a research study.

## **8. Anticipated Direct Benefits to Participants**

You and your child will not receive any direct benefits from participating in this study.

**9. Clinical Alternatives (i.e., alternative to the proposed procedure) that may be advantageous to participants**

Not Applicable

**10. Participant Payment**

None

**11. Medical Care and Compensation In the Event of Accidental Injury**

During your participation in this project it is important to understand that you and you child are not a Pacific University clinic patient or client, nor will you or your child be receiving complete mental health care as a result of your participation in this study. If you or your child are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

**12. Adverse Event Reporting Plan**

If you or your child experience an adverse event related to this study, please contact the primary investigator and/or the primary research advisor immediately. Complete contact information for the researchers is noted on the first page of this form. Any adverse event will be reported to Pacific University's Institutional Review Board.

**13. Promise of Privacy**

All of you and your child's personal information will be kept private. This involves not including full names on any forms filled out during the study, and the forms will be kept in a confidential location. This consent form will be kept in a separate confidential location by the primary investigator. If your child is not enrolled in the study, all the forms you and your child complete will be immediately disposed of in a confidential manner. If your child is enrolled in the study, all the forms you and your child complete will be disposed of in a confidential manner once the study is completed.

**14. Voluntary Nature of the Study**

Your decision whether or not to allow your child to participate will not affect you or your child's current or future relations with Forward Stride Center for Therapeutic Riding or Pacific University. If you decide to allow your child to participate, you and your child are free to not answer any question or withdraw at any time without prejudice or negative consequences.

**15. Contacts and Questions**

The researcher(s) will be happy to answer any questions you may have at any time during the course of the study. Complete contact information for the researchers is noted on the first page of this form. This study is a student project; therefore please contact the primary research advisor if you have any concerns. If you are not satisfied with the answers you receive,

please call Pacific University's Institutional Review Board, at (503) 352 – 2112 to discuss your questions or concerns further. All concerns and questions will be kept in confidence.

### 16. Statement of Consent

I have read and understand the above. All my questions have been answered. I am (write your child's name here) \_\_\_\_\_'s parent or legal guardian and I give my child permission to participate in the study. I understand that my child will additionally grant his or her assent to participate by signing an assent form as well. I have been offered a copy of this form to keep for my records. I allow the researchers to contact me via telephone, mail, or e-mail regarding this research project.

\_\_\_\_\_  
Child's Full Name: Please Print

\_\_\_\_\_  
Child's date of birth

\_\_\_\_\_  
Parent/Guardian's Name: Please Print

\_\_\_\_\_  
Parent/Guardian's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Investigator's Signature

\_\_\_\_\_  
Date

### 17. Participant contact information

This contact information is required in case any issues arise with the study and participants' families need to be notified and/or to provide participants' families with the results of the study, if they wish.

Would you like to have a summary of the results after the study is completed? \_\_\_Yes \_\_\_No

Street address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_



## Appendix B



Pacific University IRB

### Adolescent Assent Form

#### 1. Study Title

Social Skills Improvement for an Adolescent Engaged in Equine Assisted Therapy: A Single Subject Study

#### 2. Study Personnel

	Primary Investigator	Primary Research Advisor	
<b>Name</b>	Jennifer Cartinella, M.A.	Catherine Miller, Ph.D.	
<b>Institution</b>	Pacific University	Pacific University	
<b>Program</b>	School of Professional Psychology	School of Professional Psychology	
<b>Email</b>	jcartinella@pacificu.edu	milllerco@pacificu.edu	
<b>Telephone</b>	(503) 358-3733	(503) 352-7324	

#### 3. Study Location and Dates

Forward Stride Center for Therapeutic Recreation (FSCTR) in Beaverton, Oregon.  
December 2008 – March 2009

#### 4. Study Invitation and Purpose

You are being asked to participate in a scientific study about the relationship between working with horses and social skills. The results of this study will help people who work in the health fields and horse fields to understand the benefits of working with horses

#### 5. Study Materials and Procedures

You will not be asked to do anything extra if you choose to participate in this study. Your parent will be asked to fill out a form about you, which asks questions about your social skills. Based on your parents' answers on this form, we may ask you to be part of this research study. If you are invited to be part of this study, your parent will be asked to fill out one form a week until you start your riding program at Forward Stride, and then to fill out the same form for the first

eight weeks of your riding program. After the eight weeks is complete, your parent will not need to do anything else for this study.

#### **6. Participant Characteristics and Exclusionary Criteria**

The only requirements for you to participate in this study are that you are between the ages of 13 – 17 and that you are enrolled in the Sport Riding program at Forward Stride.

#### **7. Anticipated Risks and Steps Taken to Avoid Them**

There are some risks for you and your parent if you are part in this study. One risk is that you and your parent may have some stress about not being enrolled in this study. If you are not chosen to be in this study that does not mean there is a problem with you or your social skills.

Another risk is that your parent may have some stress or difficult feelings while filling out the form each week. You or your parent may also have some stress or difficult feelings about being in a research study. The researcher will try to prevent these risks to you by being very careful to protect your privacy. The researcher will protect your privacy by having your parent fill out the form in a more private area (the Forward Stride office) while you are in your riding class. This will keep other students and instructors from knowing you are involved in a research study.

#### **8. Anticipated Direct Benefits to Participants**

You and your parent will not receive any direct benefits from being part of this study.

#### **9. Adverse Event Reporting Plan**

If you have anything negative happen to you that is related to this study, please tell your parent and have them contact the researcher immediately. The contact information for the researchers is on the first page of this form.

#### **10. Promise of Privacy**

All of your personal information will be kept private. Your full name will not be on any of the forms your parent fills out about you and this form will be kept in private location by the researcher. If you are not enrolled in the study, all of your forms will be disposed of confidentially (paper shredding). If you are enrolled in this study, all documents with your information on it will be disposed of confidentially once the study is over.

#### **11. Voluntary Nature of the Study**

Your decision whether or not to participate in this study will not affect your relationship with Forward Stride Center for Therapeutic Riding or Pacific University. If you do decide to participate in this study, you can decide to quit at any time without negative consequences.

#### **12. Contacts and Questions**

The researcher(s) will be happy to answer any questions you may have at any time during this study. The contact information for the researchers is on the first page of this form.

**13. Statement of Assent**

I have read and understand all of the information given to me above. All my questions have been answered. I agree to participate in this study.

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Child's Full Name: Please Print

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Child's date of birth

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Child's Signature

Date

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Investigator's Signature

Date