

6-2016

# A QUANTITATIVE STUDY OF ANIMAL- ASSISTED INTERVENTIONS WITH YOUTH WHO HAVE EXPERIENCED MALTREATMENT

Meghan Elizabeth Anderson

*California State University - San Bernardino*, andem332@coyote.csusb.edu

Follow this and additional works at: <http://scholarworks.lib.csusb.edu/etd>

 Part of the [Social Work Commons](#)

---

## Recommended Citation

Anderson, Meghan Elizabeth, "A QUANTITATIVE STUDY OF ANIMAL-ASSISTED INTERVENTIONS WITH YOUTH WHO HAVE EXPERIENCED MALTREATMENT" (2016). *Electronic Theses, Projects, and Dissertations*. Paper 345.

This Project is brought to you for free and open access by the Office of Graduate Studies at CSUSB ScholarWorks. It has been accepted for inclusion in Electronic Theses, Projects, and Dissertations by an authorized administrator of CSUSB ScholarWorks. For more information, please contact [scholarworks@csusb.edu](mailto:scholarworks@csusb.edu).

A QUANTITATIVE STUDY OF ANIMAL-ASSISTED INTERVENTIONS WITH  
YOUTH WHO HAVE EXPERIENCED MALTREATMENT

---

A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Social Work

---

by  
Meghan Elizabeth Anderson

June 2016

A QUANTITATIVE STUDY OF ANIMAL-ASSISTED INTERVENTIONS WITH  
YOUTH WHO HAVE EXPERIENCED MALTREATMENT

---

A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

by  
Meghan Elizabeth Anderson

June 2016

Approved by:

Erica Lizano Ph.D., M.S.W., M.P.A., Faculty Supervisor, Social Work

Eva Lund, Executive Director, Special Spirit Inc.

Janet Chang, M.S.W. Research Coordinator

© 2016 Meghan Elizabeth Anderson

## ABSTRACT

Youth who have experienced maltreatment (abuse, neglect, exposure to violence) typically exhibit worse life outcomes (lower graduation rates, higher incident of substance use, unplanned pregnancies, etc.). Effective therapeutic interventions are important to combat these negative effects. Animal Assisted Intervention (AAI) is a popular and growing field. Anecdotal evidence abounds on the efficacy of AAI, however, there is a lack of quantitative and qualitative research. This study sought to increase the amount of quantitative evidence on AAI by specifically focusing on evaluating the Power Tools for Living Equine Assisted Psychotherapy (EAP) model with youth who have experienced maltreatment.

This study analyzed secondary data collected from Special Spirit Inc., an equine therapy center. Three groups of youth placed in out-of-home care at residential treatment facilities in Los Angeles County participated in the Power Tools for Living EAP program. Prior to and after the intervention the youth's guardian or clinician filled out a Youth Outcomes Questionnaire (YOQ). This data was analyzed but no statistical significant associations were yielded from the analysis. Analysis of the data does provide suggestions for further study that may potentially establish the Power Tools for Living EAP model as an effective intervention for youth who have experienced maltreatment, particularly younger participants and those with higher YOQ scores prior to treatment.

## ACKNOWLEDGMENTS

First, I want to thank Eva Lund, Valerie Stern, and Cassie Hurlbut at Special Spirit Inc. I consider it a true privilege to have learned from each of you. Your passion and drive to change the world has inspired me. Thank you for being so supportive and collaborative. Thank you for opening up the agency and its programs for my research and participation. Also, thank you to all the wonderful horse therapists at Special Spirit too. I owe you all carrots!

I want to extend my deepest gratitude to Dr. Erica Lizano for not only her research expertise but also her support as well. Thank you for so graciously sharing your knowledge and for encouraging me throughout the whole process.

Thank you to the best cohort that has ever graced California State University of San Bernardino. I was terrified to start this program, but every one of you has taught, inspired and kept me going these past three years.

Finally, thank you to my brothers, Michael and Mack Anderson, and my amazing family and friends. You can see the evidence in the following pages why I was so unavailable and useless these past 3 years, and I want you all to know how grateful I am for your support and understanding. I love you all.

## DEDICATION

To my pack, past and present: Chaser, Blondie, Pumpkin, Sunny, Sampson, Abe, Voodoo, Daisy and Light.

“Animals aren’t conditional about friendships. Animals like you just the way you are. They listen to your problems, they comfort you when you’re sad, and all they ask in return is a little kindness.”

—*Calvin*, Calvin & Hobbes by Bill Watterson, April 30, 1989

## TABLE OF CONTENTS

ACKNOWLEDGMENTS .....	iii
LIST OF TABLES .....	vii
CHAPTER ONE: INTRODUCTION	
Problem Statement .....	1
Purpose of the Study .....	4
Significance of the Project for Social Work .....	6
CHAPTER TWO: LITERATURE REVIEW	
Introduction .....	9
History of Animal-Assisted Interventions .....	9
Popularity of Animal-Assisted Interventions .....	11
Existing Documentation of the Efficacy of Animal-Assisted Interventions .....	11
Equine-Assisted Psychotherapy .....	13
Limitations on Existing Literature .....	15
Theories Guiding Conceptualization .....	18
Summary .....	21
CHAPTER THREE: METHODS	
Introduction .....	23
Study Design .....	23
Sampling .....	24
Data Collection and Instruments .....	25
Procedures .....	27
Protection of Human Subjects .....	28

Data Analysis.....	29
Summary .....	29
CHAPTER FOUR: RESULTS	
Introduction.....	31
Presentation of the Findings .....	31
Summary .....	36
CHAPTER FIVE: DISCUSSION	
Introduction.....	37
Discussion .....	37
Limitations .....	41
Recommendations for Social Work Practice, Policy and Research .....	43
Conclusions .....	46
APPENDIX A:.....	47
AGENCY’S CONFIDENTIALITY .....	47
APPENDIX B: IRB APPROVAL.....	49
REFERENCES.....	51

## LIST OF TABLES

Table 1. Descriptive Statistics of Study Sample .....	232
Table 2. Youth Outcomes Questionnaire Score Totals for Participants Ages 10 & 11 .....	233
Table 3. Pre-Intervention Youth Outcomes Questionnaire Scores and Difference Between Youth Outcomes Questionnaire Scores .....	234
Table 4. Correlation Matrix of Age and Difference of Youth Outcomes Questionnaire Scores .....	235
Table 5. Correlation Matrix of Pre-Intervention Score and Difference in Scores .....	236

## CHAPTER ONE

### INTRODUCTION

Youth who have experienced maltreatment are at greater risk for a litany of negative life factors. Effective interventions for youth who have experienced maltreatment are greatly in demand. Animal-Assisted Interventions (AAI) have become highly popular, but evidence of their effectiveness is largely anecdotal and plagued with methodological problems. Research on AAI is further limited by its primary focus on adult and aging adult populations. Furthermore, AAI vary widely, so questions not only arise regarding if the interventions are effective but also in what ways they are effective and which aspects contribute to their efficacy.

#### Problem Statement

A great deal of literature has been written on youth maltreatment; maltreatment being defined as physical abuse, emotional abuse, sexual abuse, neglect and exposure to domestic violence (Lev-Weisel & Sternberg, 2012). Youth who have experienced maltreatment are at increased risk for a host of negative life-long consequences: mental illness, substance abuse, poor relationships, lower self-esteem, worsened physical health, decreased learning capacity, trust issues, and attachment issues (Becker-Weidman, 2009; Jamieson, 2011). Youth maltreatment has been linked to behavioral issues such as arrests, violent offenses and repeat offenses (Bender, Postlewait, Thompson, & Springer, 2011). Youth maltreatment has also been

linked to increased risk of suicide (Miller, Esposito-Smythers, Weismore, & Renshaw, 2013).

A youth who has experienced maltreatment is less likely to have positive social interactions. One study found that youth who had experienced physical and emotional abuse in their home were also at a greater risk of peer rejection (Lev-Weisel & Sternberg, 2012). Interestingly, this study argued that peer rejection actually followed the maltreated child's expectation of rejection, which is to say, the child created a self-fulfilling prophecy of rejection. This fits with a study on maltreated youths' heightened sensitivity to social exclusion by Van Harmelen et al. (2014) in which the authors found that social exclusion created greater negative self-referential thinking and ultimately increased the youths' vulnerability to psychological disorders. Both Lev-Weisel and Sternberg and Van Harmelen et al.'s studies posit that because youth have been maltreated in the past they expect future maltreatment and make that a reality by their perception of events.

Human development theories universally describe the need for an individual to form relationships in order to succeed. In Maslow's hierarchy of needs, the third stage is love and belonging, "Practically all theorists of psychopathology have stressed thwarting of the love needs as basic in the picture of maladjustment" (1943, p.381). In Erikson's *Eight Ages of Man*, the sixth stage is "Intimacy versus Isolation" and, like Maslow, Erikson argues that a person's full potential and meaning of life cannot be obtained without

creating bonds of love (1963). Bowlby and Ainsworth's Attachment Theory argues that it is problems in the primary caregiver and child bond that is the source of mental and behavioral problems (Bretherton, 1992). Finally, Yalom and Leszcz make the case for the consequences of interpersonal relationships or the lack thereof, "There is, for example, persuasive evidence that the rate for virtually every major cause of death is significantly higher for the lonely...Social isolation is as much a risk factor for early mortality as obvious physical risk factors..." (Yalom & Leszcz, 2005, p.20).

For many reasons treating youth who have experienced maltreatment is an important problem, but then the issue becomes determining what is an effective treatment. Animal-Assisted Intervention (AAI), is defined as "any therapeutic process that intentionally includes or involves animals as part of the process or milieu" and includes both animal-assisted activities (unstructured interactions) and animal-assisted therapy (goal-/task-oriented) (Stern & Chur-Hansen, 2013, p.128). However, most of the evidence of AAI effectiveness is anecdotal or methodologically flawed and it has also primarily focused on adult and elderly populations (Chur-Hansen, McArthur, Winefield, Hanieh, & Hazel, 2014). Therefore, further study of the effectiveness of AAI is important in determining its viability as a treatment for youth who have experienced maltreatment.

## Purpose of the Study

The purpose of this quantitative study is to explore the efficacy of a specific AAI with youth who have experienced maltreatment and add to the existing body of research. Special Spirit Inc. (Special Spirit) is an equine therapy center in Los Angeles. They have been providing no-cost Equine Assisted Psychotherapy (EAP) for youth who are placed in residential treatment facilities. The staff at Special Spirit have collected data on the outcomes of their program. This study seeks to analyze the data collected by Special Spirit and its partner residential facilities to determine if there is a correlation between this intervention and improved youth outcomes.

Animal-Assisted Interventions (AAI) cover a wide range of activities that involve a variety of animals (Stern & Chur-Hansen, 2013). The body of evidence for the efficacy of AAI is greatly varied and largely anecdotal (Chur-Hansen, McArthur, Winefield, Hanieh, & Hazel, 2014). This study seeks to focus on a very specific AAI with a specific population in order to enhance the existing data on the efficacy of this field of interventions. The AAI used in this study is a curriculum developed by Robert G. Magnelli, Ph.D. and Nancy Magnelli, R.N. from the Equine Assisted Growth And Learning Association (EAGALA) Equine Assisted Psychotherapy (EAP) model (Magnelli & Magnelli, 2011; EAGALA, 2009). This EAP model, named Power Tools for Living, was designed to teach six core skills to youth: respect, responsibility, relationship

skills, boundaries, empathy, and choices and consequences (Magnelli & Magnelli, 2011, p.5).

Special Spirit implemented the Power Tools for Living program with youth placed in residential treatment facilities in Los Angeles County. The youth being served by this EAP range in age from nine to seventeen. They have been placed in out-of-home care and are under the guardianship of Los Angeles County Departments of Children and Family Services, Probation, or Mental Health, or some youth have dual jurisdiction (probation and foster care). Special Spirit is evaluating their program using the Youth Outcome Questionnaire (YOQ).

Because of the maltreatment a youth has experienced they often have difficulty with trust, communication and forging relationships (Schultz, Remick-Barlow, & Robbins, 2007). However, Smith-Osborne and Selby make a case for why therapeutic animals can support youth having difficulties in these areas, "Animals. . . can be direct and honest in exchanges whereas humans may confuse and change the rules of social interactions through verbal communication" (2010, p.299). If the Power Tools for Living EAP can improve trust and social interactions through interventions with therapy horses then it may lead to improved interpersonal relationships, behavioral dysfunction, and the other areas as measured in the YOQ.

According to Magnelli and Magnelli (2011), they have completed two studies of the "Power Tools for Living" curriculum. One was a relatively small

study of twelve children randomly selected from an after school care program and the other was a large group of 137 youth (Magnelli & Magnell, 2011, p.6). However, neither of these studies has been published or made available for review.

This study seeks to provide documentation on the efficacy of the Power Tools for Living EAP model with youth who have experienced maltreatment. Because there is a need for effective interventions for youth who have experienced maltreatment, and because the existing body of research on AAI has largely not been quantitative nor focused on this population of youth, this study will analyze existing data to provide much needed research on the efficacy of EAP with youth who have experienced maltreatment.

#### Significance of the Project for Social Work

AAI programs are popular but their effectiveness with certain populations is significantly under developed. Smith-Osborne and Selby's literature review found only one study that had researched AAI with children who had experienced intra-family violence (defined as abuse, neglect, and exposure to domestic violence) (2010). Additionally, most AAI research has significant limitations, from flaws in the study design to small sample sizes.

The research from this study will ideally impact two populations: youth who have experienced maltreatment and professionals administering or looking to implement AAI programs, particularly EAP. If this research determines that EAP can be an effective treatment for youth who have

experienced maltreatment than helping professionals will have another potential tool at their disposal and youth will receive improved care. Further research on the effectiveness of EAP will also encourage organizations to implement the programs. Because animals are often seen as a liability some organizations are reluctant to utilize AAI. However, research demonstrating their efficacy will allow social work professionals to make a stronger case in favor of their implementation. Additionally, as more AAI programs are implemented that means more youth will have the opportunity to benefit.

Many institutions now utilize AAI in very diverse fields. Programs that include AAI address issues that range from physical health (children's hospitals) to mental health (service dogs for veterans with PTSD) to criminal behavior (canine training programs for inmates) and educational challenges (literacy dogs) (Boston Children's Hospital, 2005; PAC, n.d.; Pet Partners, n.d.; Puppies Behind Bars, n.d.). However, because these programs vary widely in the populations served, in their therapeutic goals and in program design, there is not a clear protocol for implementing effective AAI programs.

A great deal of research is still needed in the field of AAI and this study will contribute towards the existing body of data, particularly for EAP with maltreated youth and provide seeds for further study. Most studies on AAI have utilized elderly populations as well as adults with mental illness. While AAI programs with youth are reported to be numerous and anecdotal evidence abounds, very little research has been documented. In a social work

environment where Evidence-Based Practices (EBP) are increasingly the requirement, being able to demonstrate the efficacy of AAI is becoming crucial to their continued practice. Though this study will certainly not provide enough evidence to establish the Power Tools for Living EAP as an EBP it will help contribute towards the existing body of research and strengthen the case for providing this intervention model.

This study will increase the literature on AAI as an intervention for youth who have experienced maltreatment. This study will explore the research question: Is the Power Tools for Living Equine Assisted Psychotherapy model an effective treatment in improving the personal, interpersonal and life skills outcomes for youth who have previously experienced maltreatment?

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

A review of the body of literature on Animal-Assisted Interventions (AAI) reveals a dearth of reliable quantitative or qualitative studies. AAI programs are a popular and common practice, but documentation of their effectiveness remains scarce. Part of the challenge is the diversity of AAI and its practice with multiple populations which makes generalization difficult. There is a need for further valid quantitative and qualitative studies on AAI, particularly its use with youth and youth who have experienced maltreatment.

#### History of Animal-Assisted Interventions

Humans have a long history with animals that dates back to the first domestication of livestock and companion animals. Serpell notes that the practice of owning pets and utilizing these pets to encourage socialization in children came about in the seventeenth century (Fine, 2010). Quoting the influential political philosopher John Locke, Serpell notes Locke's recommendation of the practice of "giving children 'dogs, squirrels, birds or any such thing' ...to develop tender feelings and a sense of responsibility for others" (Fine, 2010, p.25). By the end of the eighteenth century mental health professionals began to adopt the use of therapeutic animals, particularly in institutional care (Fine, 2010). Chumley (2012) notes that animals were used

in a therapeutic manner in 1919 when the United States Military authorized use of therapy dogs with psychiatric patients at St. Elizabeth's Hospital.

Although animals were utilized in mental health institutions and medical settings, Dr. Boris Levinson was the first to study AAI as a treatment intervention. Dr. Levinson, a psychologist, explored what he termed the Human Animal Bond through use of his own dog as a co-therapist in the late 1940's and 50's, culminating in the publishing of his pioneering work *Pet-Oriented Child Psychotherapy* in 1961 (Hines, 2003; Levinson, 1997). Dr. Levinson encouraged a methodological approach and establishment of research on the efficacy of AAI (Balluerka et al., 2014). As Levinson states in the last sentence of his text, "It is my hope that the many questions asked and suggestions implied in this book might activate and accelerate the use of pets in child psychotherapy" (1997, p. 169).

Although Levinson was a psychologist and encouraged research methods to legitimize AAI, it was veterinary leaders who first championed the practice (Hines, 2003). From the beginning AAI was intended to be international and interdisciplinary in its scope (Hines, 2003). Veterinarians and veterinary schools were the biggest proponents but schools of social work and schools of public health organized conferences (Hines p.11, 2003). In 1981 the Delta Society, now Pet Partners, a leader in animal therapy, research and training was founded; and then in 1984 they established the *Journal of the Delta Society* (which would later be renamed *Anthrozoos*) which was the first

scientific journal devoted exclusively to publishing peer-reviewed studies on AAI (Hines, 2003).

### Popularity of Animal-Assisted Interventions

Programs utilizing AAI have been implemented with various age groups (youth to elderly), in multiple treatment settings (residential care, hospitals), and with diverse populations (intellectual disabilities, mental illness, literacy issues, veterans) (Boston Children's Hospital, 2005; PAC, n.d.; Pet Partners, n.d.; Puppies Behind Bars, n.d.). One study on attitudes towards AAI among helping professionals found that 90% believed AAI should be used more often even though 60% had never used the intervention themselves (Berget, Grepperud, Aasland, & Braastad, 2013). That there is a positive perception about the effectiveness of AAI can be helpful in implementation of a treatment program. However, it can also bias practitioners into believing AAI are effective when there is no evidence to validate that belief.

### Existing Documentation of the Efficacy of Animal-Assisted Interventions

Previous research shows that AAI can be an effective treatment in addressing certain populations and mental health and behavioral issues. A review of randomized control trials by Kamioka et al. (2014) found that for people who like animals AAI can be effective for treating mental illness such as depression and schizophrenia as well as behavioral disorders such as alcohol and drug addictions. These improvements were largely attributed to

AAI's ability to decrease anxiety, improve mood, improve perceptions of quality of life, and improve social behaviors (Kamioka et al., 2014).

Much of the research on AAI shows a positive improvement in social interactions. McNicholas and Collis (2006) found that AAI increased interpersonal communication (Berget et al., 2013). A study on the influence of companion animals on childhood development found that animals decrease an individual's sense of isolation by facilitating interaction between people (Mills & Hall, 2014). Similarly, a 12-week farm-animal assisted intervention study found that participants who worked on a farm had reduced depression and improved social interactions, which mostly came from participants reporting their appreciation for working with the dairy workers (Pedersen, Ihlebæk, & Kirkevold, 2012). Finally, an AAI program held on a college campus found that unstructured drop-in sessions with animals decreased student anxiety and loneliness, though possibly due to the interaction with fellow students and the animal handler (Stewart, Dispenza, Parker, Chang, & Cunnien, 2014).

More research on AAI has been done on adult and elderly populations, though what exists on youth is promising. A systematic literature review by O'Haire (2013) found that use of AAI programs for youth with Autism Spectrum Disorder had the benefits of increasing social interaction, increasing communication, decreasing problem behaviors, and decreasing stress. An experimental study utilizing AAI for youth undergoing forensic interviews in

sexual abuse cases found that the use of a therapy dog did reduce stress, especially with older children and during longer interviews (Krause-Parello & Friedmann, 2014). Last, a study on attachment and the use of AAI for youth in residential care found that over the 12-week period youth experienced a positive alteration in their perception of feeling loved by their current attachment figures (Balluerka, Muela, Amiano, & Caldentey, 2014). Though much of the research on AAI has centered on the elderly or specific adult populations, the research that has been conducted on youth shows promising results for benefits in stress reduction and relationship-building.

### Equine-Assisted Psychotherapy

Equine-assisted psychotherapy (EAP) is the most advanced of the AAIs in terms of developed models, research, and certifications. There are a few organizations that provide certification for established models, these include Equine Assisted Growth and Learning Association (EAGALA), Professional Association of Therapeutic Horsemanship (PATH) International, and Pet Partners (EAGALA, 2009; PATH International, 2016; Pet Partners, n.d.). According to the EAGALA website there are over 600 equine-assisted therapeutic programs in 50 countries; just under 500 in the United States; roughly 70 in California; and 23 in Southern California (EAGALA, 2009). PATH International reflects those same number of programs certified by their organization as well as 4600 certified instructors, 866 member centers, and 62,000 people helped world-wide (PATH International, 2016). Pet Partners,

formerly the Delta Society, certifies volunteers and their dogs to serve as therapy dogs. On their website Pet Partners have 52 partner programs nationwide, only 5 of those in California, and only 2 in Southern California (Pet Partners, n.d.).

In Patti Mandrell's text, *Equine-Assisted Psychotherapy*, she discusses the existing body of documentation on the efficacy of EAP. She notes that several case studies and personal testimonies demonstrate that EAP is effective in developing psycho-educational skills and decreasing social, behavioral and emotional problems (Mandrell, 2014). One study documented an improvement in the Children's Global Assessment of Functioning scores for youth who had been diagnosed with adjustment disorder, mood disorders, Post-Traumatic Stress Disorder, Attention Deficit Hyperactivity Disorder and disruptive disorder, and that the improvements were greater for youth who had experienced maltreatment (Mandrell, 2014, p.59). Another study demonstrated significant reductions in psychological symptoms and distress and maintenance of those reductions six months after treatment (Mandrell, 2014). Mandrell states that the effects of EAP are more profound, long-lasting, and cost-effective than other treatment interventions with youth as compared in several studies (2014). However, Mandrell also notes that EAP is a new and "dawning discipline" in which "little quantitative data has been reported or analyzed" (2014, p. 57). She concludes the section by arguing

that it is “imperative” that “more quantitative research needs to be conducted in this field to further demonstrate the effectiveness” (Mandrell, 2014, p.60).

#### Limitations on Existing Literature

While AAI are largely popular, they have not been well-documented or founded on empirical evidence. Study after study states that the evidence for AAI largely remains anecdotal or based on flawed methodology. As Balluerka et al. (2014) state, “...more research is required to examine in which situations, which populations, and under which condition AAT can be beneficial” (p.104). Even the pioneer of animal-assisted therapy, Boris Levinson, intended his inaugural work, *Pet-Oriented Child Psychotherapy*, to be used as the beginning explorations in this promising work due to the anecdotal nature of his evidence (Balluerka et al., 2014).

More evidence needs to be gathered in regards to AAI’s efficacy with youth populations. Both O’Haire (2012) and Kamioka et al. (2014) state that most AAI research is conducted with elderly participants or adult populations with mental illness. Krause-Parello and Friedmann (2014), who found AAI to have calming effects on sexually abused youth undergoing forensic interviews, further emphasized the need for further study and documentation of AAI in child-welfare.

In addition to further study with youth populations, the existing research is riddled with methodological problems that are not easily solved. For one, there is a question of bias in the program because most participants who

agree to take part in the AAI are already biased positively towards animals. Krause-Parello and Friedmann (2014) found that as many as 90% of their participants had owned a dog prior to the AAI program. While this does not invalidate the study, it does present limitations on which population may benefit from AAI. In a pilot study by Berry et al. (2012), the researchers found that geriatric patients in a residential care facility benefited from interactions with dogs, but all who participated had been pet-owners previously. In the qualitative study the geriatric participants stated that the dogs gave them happy memories of their past animals (Berry et al., 2012). Again, while this does not negate the benefits of AAI, it does present the question of how beneficial such interventions can be for individuals not pre-disposed to animal bonding and whether the current AAI is beneficial or if it is a nostalgia effect.

Perhaps the most thorough critique of the methodological problems involved in existing quantitative AAI research comes from Stern and Chur-Hansen (2013). The researchers point out that AAI research lacks randomization of participants due to the need to screen for allergies and phobias; the sample sizes of the existing studies are small; it is impossible to blind participants to the intervention they are using because of the presence of the animals; and it is not possible to generalize results because of the wide variance in activities constituting AAI (Stern & Chur-Hansen, 2013). There is difficulty in addressing many of these problems. For example, AAI are increasingly popular, each program is unique and their participant pool is

small. Therefore, gathering a large sample size is difficult. AAI varies widely, in fact, Sweden is the only country with a national standard and accreditation for therapy dogs (Nordgren & Engström, 2014). While there are various animal therapy associations in America, there does not exist a nationally-recognized standard of practice.

Other methodological problems in quantitative studies on AAI include the inability to control for alternate variables, most notably the influence of human interaction. Every AAI involves some form of animal handler. In the pioneering work of Levinson, he himself acted as the handler and used his own dog as the therapy animal (Balluerka et al., 2014). Such was also the case with Stewart et al.'s (2014) unstructured drop-in sessions with college students. However, the confusion increases in Stewart et al.'s case due to the added influence of other college students. Therefore, the question arises, was the decrease in loneliness truly due to the influence of the animal present or could any social activity that brought together college students and encouraged social interaction have achieved the same benefit?

The possibility of the influence of alternate variables arises in study after study with AAI. In Pedersen, Ihlebæk, and Kirkevold's (2012) qualitative study of the influence of farm-animal assisted interventions on adults with depression, the participants never mentioned a connection to the animals but rather stated the importance of feeling a connection with the dairy farmers they

worked with. How much did the animals facilitate this connection, or could the intervention have been as effective with vegetable farmers instead?

### Theories Guiding Conceptualization

Just as AAI lacks a definitive national standard, the research on the topic also lacks a universal or guiding theory. A promising but little explored theory is Human Animal Interaction (HAI) Theory which “suggests that many humans seek out contact with animals as calming and non-judgmental sources of support and facilitators of social interactions” (O’Haire, 2013, p.1606). The pioneer of AAI, Dr. Levinson, argued a similar theory in his work, “The thesis of this book is that contact with the inanimate and particularly the animate world via the pet is most important to a wholesome emotional development” (Levinson, 1997, p.xviii). He applied this theory in practice through three stages, “first, with inanimate nature; then with the animate nonhuman world; and finally with human beings” (Levinson, 1997, p.xvii).

Another theory specific to human-animal relations is the Biophilia Hypothesis which proposes that humans have adapted increased attention and empathy for animals in their environment due to survival mechanisms and the historical need to be aware of predators and prey (Mills & Hall, 2014). Mills and Hall (2014) go on to explain that the Biophilia Hypothesis states that this increased attention to animals can lead to the ability of companion animals to give support to humans by encouraging their focus on positive influences,

though the authors argue that much more evidence is also needed to confirm these conclusions.

Kruger and Serpell (2006) in their *Handbook on Animal-Assisted Therapy* discuss the lack of a unified theory and the Biophilia Hypothesis, but also address a number of other theories to explore AAI. Kruger and Serpell discuss a number of theories including Learning Theory and Social and Cognitive theories but two of the most compelling theories emerge as Role Theory and Attachment Theory. Role Theory states that as people enter new roles they modify their behavior to conform to role expectations. This could explain some of the changes in social interaction and behaviors seen in participants of AAIs. As the participants are asked to take on new roles, such as a caregiver of an animal, they must modify their behavior, such as needing to communicate or work as a team with other participants or the animal handlers.

Another interesting facet of role theory and AAI is that role theory argues for the importance of a participant to take on role assumption not just role play in order to reap the most benefit. For youth who have experienced maltreatment there is a great deal of mistrust and fear in forming attachments with others. However, having to assume the role with an animal and form an attachment to a companion animal could potentially be an intermediary step with less risk due to the perceived unconditional nature of an animal's affection. This reflects Levinson's proposed stages of beginning a connection

with animate nature via a pet and then moving to a connection with another human.

Attachment Theory is discussed by not only Kruger and Serpell (2006) but is also suggested by Krause-Parello and Friedman (2014) and Bachi (2012). Because of the overwhelming belief in the ability of people to connect with animals due to a perception of unconditional love and natural empathy, many people put forth Attachment Theory. Developed by Bowlby and Ainsworth, Attachment Theory emphasizes the need for an infant to feel attached to a primary caregiver and argues that most behavioral disorders stem from dysfunction in this attachment (Bretherton, 1992).

The use of Attachment Theory requires the hypothesis that if an individual is struggling with human attachments, then attachment to an animal can be a surrogate. Kruger and Serpell (2006) suggest AAI would be most effective when the therapy animal is utilized as a transitional object, a temporary attachment figure to help move the participant towards a permanent human attachment (p.28). While both Kruger and Serpell and Bachi mention Attachment Theory as a possible framework, and this same model was suggested by Levinson, they both caution limitations as well. Bachi (2012) states that one study suggests that humans attach differently to other humans than they do to animals, therefore attachment theory may not apply. Kruger and Serpell (2006) also emphasize the preference for AAI as a transitional object because of the danger in creating a secure attachment with a therapy

animal that is not a permanent fixture in the participant's life and the damage the separation from that animal might do to the participant.

Equine-Assisted Psychotherapy (EAP) is specifically rooted in Gestalt Theory. As Mandrell states, "Gestalt counseling is an experiential therapy stressing here-and-now awareness" (2014, p.20). This theory is useful in direct work with therapeutic horses. The individual is forced out of their head and to pay attention to the large animal in their physical presence. The individual experiences real emotions: fear and anxiety over the size of the horse and potential physical harm; joy and comfort from close physical contact and perceived unconditional regard; and frustration or pride at the success or failure at completing a task. Whatever the emotion, the experience is real. As Mandrell states we are more likely to remember lessons experienced than those told to us (2014). Gestalt theory also examines nonverbal cues and metaphors, and this theory is put into direct practice in EAP (Mandrell, 2014).

Finally, Bachi (2012) makes the argument for the need for Grounded Theory, arguing that the lack of support for any existing theory requires the need to search out and develop a new and unique theory.

### Summary

AAI programs are popular but evidence of their effectiveness is largely anecdotal. Furthermore, most research studies have been conducted on adult and aging adult populations. There is a need for exploration of the potential benefits of AAI with youth who have experienced maltreatment. While EAP is

one of the more advance AAls in terms of methodology and accrediting agencies, the research and documented evidence is also lacking in amount and quantitative validity.

## CHAPTER THREE

### METHODS

#### Introduction

The methods used in this study were chosen to explore the efficacy of the Power Tools for Living Equine Assisted Psychotherapy (EAP) model with youth who have experienced maltreatment. This quantitative study seeks to analyze existing data provided by Special Spirit Inc. (Special Spirit) in order to measure the association between the EAP intervention and the Youth Outcomes Questionnaire (YOQ) measures. Special Spirit has collected pretest and posttest scores on their youth participants and made this data available for analysis in this study.

#### Study Design

The purpose of this quantitative study is to analyze if there is a correlation between participation in the Power Tools for Living EAP model intervention and improved outcomes for youth who have previously experienced maltreatment. The existing body of literature on EAP and AAI has documented positive outcomes for youth participants, particularly in regards to interpersonal relationships and interpersonal distress. Therefore, this study utilized a descriptive design to measure the correlation between the intervention and outcomes for those areas as well as explored further other

areas that may be positively impacted (Weinbach & Grinnell, 2014). The independent variable was the Power Tools for Living EAP intervention, and the dependent variables were the categories measured by the YOQ.

This study is a quantitative analysis of secondary data provided by Special Spirit. As part of the evaluation of their EAP program Special Spirit has collected pre- and post-intervention YOQ scores. Although the intervention was provided to separate groups (six youth from Hillside residential program, five youth from Five Acres, and two youth from David & Margaret Youth and Family Services) the research design would be described as a one-group pretest-posttest study because there was no control group, all the youth evaluated received the treatment intervention (Weinbach & Grinnell, 2014). Finally, the “knowledge objective of the study” was associational (Weinbach & Grinnell, 2014, p.25).

### Sampling

Participants were seven female and six male participants, aged 9 to 17, from the residential treatment programs at Hillside, Five Acres, and David & Margaret Youth and Family Services who received EAP from Special Spirit Inc. Youth in these residential programs have experienced abuse, neglect and exposure to violence, thus meeting the criteria for maltreatment. This study utilized purposive sampling due to the representativeness of youth in residential treatment facilities (diversity of forms of maltreatment experienced, racial/ethnic/cultural backgrounds, and age) and due to Special

Spirit providing services to these youth and collecting pre- and post-intervention data on each (Grinnell & Unrau, 2014, p.309). Special Spirit provides EAP to several diverse types of clients (veterans, individuals in substance recovery programs, adults and youth with mental illness). However, this population was intentionally selected for this study in order to explore EAP with youth who have experienced maltreatment.

### Data Collection and Instruments

This study uses the research tested and data backed Youth Outcome Questionnaire (YOQ) as pre- and post-intervention measurements. The YOQ measures youth outcomes in six areas: interpersonal distress, somatic, interpersonal relationships, critical items, social problems, and behavioral dysfunction (OQ Measures, 2014). Interpersonal distress is defined as negative emotions including anxiety, fear, and depression. Somatic symptoms include physical ailments such as headaches and stomachaches. Interpersonal relationships measures areas of communication and interaction with family, peers, and others. Critical items include suicidal and homicidal ideation as well as psychotic features of paranoia, hallucination, and delusions. Social problems tracks disruptive behaviors including aggression and delinquent/criminal activity. Finally, behavioral dysfunction assesses for daily functioning issues of organization, task completion, mood and impulse control, and ability to focus attention (“Youth/Adolescent Measures”, 2016).

The YOQ measures answers using a modified likert scale. Respondents are asked to answer questions with “Never/Almost Never”, “Rarely”, “Sometimes”, “Frequently”, or “Almost Always/Always.” Each answer is assigned a value, however the values assigned change. For example, question one asks, “My child wants to be alone more than other children of the same age” and the answers are assigned values 0 to 4. However, question 24 asks “My child enjoys relationships with family and friends” and the answers are assigned values of 2 to -2. This study analyzes those numbers to explore if there is an association between the independent variable of the EAP intervention and the dependent variables of the YOQ measures.

Special Spirit has collected pre- and post-intervention YOQ scores on each youth participant. The YOQ was completed by the youth’s staff, either a therapist, counselor, or case manager. There is a Youth Outcome Questionnaire – Self Report (YOQ-SR) that can be completed by youth aged twelve to eighteen. Special Spirit did collect YOQ-SR forms for those youth aged twelve and up, however, this applied to only five of the thirteen participants and one had to be thrown out due to not being fully completed, and therefore that information is not included in this study. The pre-intervention YOQ was completed before receiving services, but not more than two weeks prior. The post-intervention YOQ was completed after receiving services, but not more than two weeks after. This study did not collect any

new data, but instead analyzed the outcomes data previously collected by Special Spirit.

### Procedures

The youth participants received five weeks of EAP following the Power Tools for Living model. The model teaches five social and emotional skills: respect, relationship building, responsibility, choices and consequences, empathy, and boundaries (Magnelli & Magnelli, 2011). Staff included in the program were a Licensed Clinical Social Worker and two equine specialists, each certified by the Equine Assisted Growth and Learning Association (EAGALA) and/or the Professional Association of Therapeutic Horsemanship International (PATH International).

Each 90-minute session began with a welcome session with staff followed by a discussion of the skill(s) to be practiced for that week. Next, the youth participated in team activities designed to develop skills in these areas. Finally, youth and staff gathered in a circle to once again discuss the lessons learned during the session, debrief, and part for the week. The final session in the series summarizes and reiterates the lessons learned in the prior sessions.

As mentioned above in data collection the YOQ is administered no more than two weeks prior to the start of services and again no more than two weeks after the completion of services. The pre- and post-YOQ scores were provided to the author of this study and an analysis was done. Prior to the

initiation of services, youth participants and their staff were informed of important elements of Equine Assisted Psychotherapy, including potential dangers and benefits. Clients were screened for allergies and phobias.

### Protection of Human Subjects

Because participants in this study are a vulnerable population, youth and those who have been maltreated, Special Spirit worked in conjunction with the residential treatment facilities to obtain informed consent from the legal guardians, see Appendix A. Youth in the program were under the care of Los Angeles County Departments of Children and Family Services, Probation, Mental Health, and in some cases dual jurisdiction. Therefore, in some cases consent was given by case managers, lawyers, probation officers, parents, or via court order.

Special Spirit screened for phobias and allergies in order to avoid physical or emotional harm to the youth participants. Additionally, the EAP model requires the presence of a mental health professional and equine specialist at all times for the safety of the youth and the therapy horse. Special Spirit employs a Licensed Clinical Social Worker who is also certified by EAGALA as the mental health professional and facilitator of the Power Tools for Living sessions. Special Spirit also utilizes two equine specialists, one certified by PATH International, and the other certified by both EAGALA and PATH International. The mental health professional and two equine specialists ensure the safety of the youth by following EAGALA protocol.

Furthermore, Special Spirit selects therapy horses with temperaments and training that makes them appropriate for such work. Special Spirit's therapy horses are familiar and comfortable working with youth, including youth with behavioral issues or physical challenges.

### Data Analysis

The pre- and post-intervention YOQ scores were analyzed, comparing the difference in scores in each of the six areas as well as overall totals. This study also analyzed the difference in the YOQ total scores by age and by pre-intervention YOQ total score. Magnelli and Magnelli (2011) stated that in their study, those youth who were younger and who had a higher YOQ score prior to the intervention saw the most improvement, therefore this study wanted to look closer at those two factors. Nonparametric tests were used to analyze: if there is a statistically significant association between the pre-intervention scores and the post-intervention scores; if there was a statistically significant correlation between age and the difference between the YOQ scores; and if there was a statistically significant correlation between pre-intervention YOQ scores and the difference between the YOQ scores.

### Summary

Through the use of pre- and post-intervention YOQ scores, this study has analyzed the influence of the Power Tools for Living EAP model on youth who have experienced maltreatment. The sample used in this study

was thirteen youth, male and female, aged nine to seventeen who are current residents in residential treatment programs and who received EAP from Special Spirit Inc. Due to the vulnerable status of this population, special attention was given to consent and confidentiality of participants. Also, due to the nature of the intervention, particular attention was paid to safety protocols and pre-screening of participants.

## CHAPTER FOUR

### RESULTS

#### Introduction

This quantitative study analyzed the effect of an Equine-Assisted Psychotherapy (EAP) intervention with youth who have experienced maltreatment through secondary data collected using a one-group pretest-posttest design. In order to determine if there was a statistically significant change in YOQ scores after participating in EAP, this chapter first provides descriptive statistics on the population of the participants then utilized the Wilcoxon Signed Rank Test to test if YOQ scores changed a statistically significant level from pre to post EAP intervention. Additionally, correlation analysis was conducted to examine any statistically significant associations between improvements in post-intervention Youth Outcomes Questionnaire (YOQ) scores and age and pre-intervention scores.

#### Presentation of the Findings

This study analyzed secondary data collected by Special Spirit Inc., and equine therapeutic center. Special Spirit collected pre- and post-intervention responses on the Youth Outcome Questionnaire (YOQ). Basic demographic information was also collected, including age, gender, and residential treatment program but not race, ethnicity, language of origin, religion, or other

typical demographic information. Applicants were screened for allergies and phobias.

The descriptive statistics of the study sample are presented in Table 1 (see below). Frequencies were run on age, gender and residential treatment program. Of the 13 participants, gender was roughly evenly split with one more female than male: 7 participants (53.8%) female and 6 participants (46.2%) male. The ages ranged from 9 to 17 years old, with the mean being 11.85. The largest group of participants came from Hillside (46.2%), then Five Acres (38.5%), and only two completed the program from David & Margaret YFS (15.4%).

Table 1. Descriptive Statistics of Study Sample

	N (%)	Mean (range)
Age		11.85, (9 to 17)
Gender		
Male	7 (53.8%)	
Female	6 (46.2%)	
Agency		
Hillside	6 (46.2%)	
Five Acres	5(38.5%)	
David & Margaret YFS	2 (15.4%)	

The data was a comparison of the same group taken at two different occasions, pre and post intervention, but there was also a small number of participants (not normally distributed). Therefore, a nonparametric repeated measures test was used, the Wilcoxon Signed Rank Test, to provide inferential statistics. The Wilcoxon Signed Rank Test compared the participants pre- and post-intervention YOQ scores along 7 measures: Interpersonal Distress, Somatic, Interpersonal Relationships, Social Problems, Behavioral Dysfunction, Critical Incidents, and Total. In order to demonstrate statistical significance, the test results would have to yield an associated significance level of less than or equal to .05. None of the seven measures met this standard, though the category of Social Problems was approaching significance at .08.

A Wilcoxon Signed Rank Test was conducted by gender, age (for 10-11 years-old only), residential treatment program and YOQ minimum test score (47 or higher), and found these divisions did not provide statistically significant association levels either, except for the category of age. A review of the data showed that all of the participants aged 10 and 11 saw reductions in their YOQ score totals. Data is provided in Table 2 below.

Due to this trend in the data, those age populations were selected out and a Wilcoxon Signed Rank Test was run with just their YOQ pre- and post-intervention scores. This test showed a statistical significance in association for the categories of Total Scores ( $p=.018$ ,  $z= -2.366$ ,  $r=.464$ ), Interpersonal

Relationships ( $p=.050$ ,  $z=-1.961$ ,  $r=.386$ ), and nearly Interpersonal Distress ( $p=.051$ ,  $z=-1.947$ ,  $r=.382$ ).

Table 2. Youth Outcomes Questionnaire Score Totals for Participants Ages 10 and 11

Age	9	10	10	10	10	11	11	11	13	13	13	16	17
Difference in YOQ Scores	14	-39	-9	-1	-57	-11	-20	-7	24	7	21	1	38

Note. The scores of participants ages 10 to 11 are presented in grey shading to facilitate interpretation.

Also, those participants with higher YOQ scores saw reductions in their YOQ score totals, with one exception. Table 3 below illustrates this data. No statistical significance in association was found when the Wilcoxon Signed Rank Test was run for only those participants who scored a 47 or higher on their pre-intervention YOQ. The score of 47 was chosen as it is stated as the minimum score for significance (OQ Measures, 2014).

Table 3. Pre-Intervention Youth Outcomes Questionnaire Scores and Difference Between Youth Outcomes Questionnaire Scores

Starting YOQ Score	29	32	38	57	76	94	97	103	104	105	116	125	141
Difference in YOQ Scores	38	24	7	1	14	-39	-11	-9	-20	21	-7	-1	-57

Note. The scores of those participants who saw a decline in their YOQ score post-intervention are presented in grey shading to facilitate interpretation.

Furthermore, data analyses were run using the Spearman rho to determine if there was a correlation between age and the difference between YOQ pre- and post-intervention scores and a correlation between the pre-YOQ score and the difference between the pre- and post-intervention YOQ scores. Tables 4 and 5 below show the correlations. There is a significant positive correlation between age and the difference in YOQ pre- and post-intervention scores. This means the higher the age of the participant the smaller the reduction in YOQ score, which signifies less improvement in the six areas measured. There is a significant negative correlation between pre-intervention YOQ scores and the difference in YOQ scores, meaning the higher the pre-YOQ score the greater the reduction in the post-YOQ score.

Table 4. Correlation Matrix of Age and Difference and Youth Outcomes Questionnaire Scores

	1.	2.
1. Age	1.00	
2. Difference in pre and post test	.57*	1.00

Note. \* denotes  $p \leq .05$ .

Table 5. \_Correlation Matrix of Pre-Intervention Score and Difference in Scores

	1.	2.
1. Pre-test total	1.00	
2. Difference in pre and post test	-.61*	1.00

Note. \* denotes  $p \leq .05$ .

### Summary

This study analyzed secondary data on a one-group pretest-posttest design to compare YOQ scores before and after the treatment intervention. The Wilcoxon Signed Rank Test was used to determine if there was a statistically significant change between YOQ scores at pre and post intervention for seven measures: Interpersonal Distress, Somatic, Interpersonal Relationships, Social Problems, Behavioral Dysfunction, Critical Incidents, and Total score. No statistically significant changes were found in the pre and post intervention YOQ scores, although the associated level for Social Problems was approaching significance.

## CHAPTER FIVE

### DISCUSSION

#### Introduction

This quantitative study of secondary data provided by Special Spirit Inc. sought to analyze if the Power Tools for Living Equine Assisted Psychotherapy (EAP) intervention is effective in improving certain psychosocial skills of youth who have experienced maltreatment. This chapter will discuss the relevant findings, the limitations of the study, and areas for future study.

#### Discussion

The field of research on Animal Assisted Interventions (AAI) is plagued with methodological problems and a lack of empirical evidence. Unfortunately, many of these problems are inherent to providing the intervention. As Stern and Chur-Hansen (2013) discuss in their article, studies on AAI are difficult to design to meet the gold standard of research studies because the necessity of screening applicants for allergies and phobias prohibits randomized selection of participants, and the presence of an animal makes it impossible to create a double-blind study. Furthermore, AAI is a growing field and mostly provided recreationally and haphazardly, so that collecting a large pool of participants is difficult. Additionally, AAI are diverse and there is no recognized standard of practice or evidenced-based programs in the field.

This quantitative study sought to add to the available research on AAI by analyzing secondary data provided by Special Spirit Inc. in order to explore the efficacy of the Power Tools for Living model of Equine Assisted Psychotherapy (EAP). The EAP intervention was provided to groups of youth who have experienced maltreatment and have been placed in residential treatment facilities in Los Angeles County. The youth were aged 9 to 17 and participated in groups of six youth over the 5-week program. However, only 13 of the 18 completed the entire program and returned the assessment questionnaire. The efficacy of the intervention was measured by utilizing the research-backed Youth Outcome Questionnaire (YOQ) to score improvements in psychosocial well-being.

Unfortunately, the results of the analysis did not provide evidence of a significant association between the treatment intervention and reductions in the YOQ score, although the category of Social Problems was approaching significance. However, this study provides important information for future research and delivery of the EAP intervention. Magnelli and Magnelli (2011) the creators of the Power Tools for Living EAP program, stated that in their study, those youth who were younger and who had a higher YOQ score prior to the intervention saw the most improvement.

Age of the youth participants warrants further discussion. This study found a positive and statistically significant correlation between age and the difference in the YOQ scores, meaning the older the participant the less the

reduction in their post-intervention YOQ score total. In analyzing the data, this study noted that the youth who had improvements in their YOQ total scores (reduction from pre- to post-test), were aged 10 to 11 while the older youth (13 to 17) reported increases as did the only nine-year-old. The Wilcoxon Signed Rank Test did not find a significant association level when just the scores of the 10 and 11 year-olds were run, so no statistical inference can be drawn. However, it may provide fertile ground for future study. After all, prepubescent youth are in a different developmental stage than teenagers, so an intervention that is effective with a younger age range may not be effective with an older one.

Also, we found with older participants that arranging schedules became increasingly difficult and behavioral problems interrupted service delivery. For example, the group from David & Margaret YFS began with 6 youth participants aged 15 to 18, a much older age range than the other two groups: Five Acres (9-13) and Hillside (10-13). Of the six youth in the David & Margaret YFS group, two ran away from placement, one was discharged to return home and her biological family did not follow up with the paperwork, and one had emotional disturbances that led her to refuse to attend the group twice. Therefore, only two of the six qualified for inclusion in the study. Of the 12 participants from Five Acres and Hillside, only one was not included in this study and that was due to the clinician not returning the paperwork in the 2-week timeframe. A new group of youth, from Penny Lane, are now going

through the Power Tools for Living EAP program, although they will not conclude in time for their results to be included in this study. While their data is not available to be included in the analysis, they provide some further context to this concern. The group consists of 10 youth, aged 16-18, and has met three times so far: the first time 9 participants came, 1 had a prior event planned; the second time 5 participants came, the other 5 had a lockdown crisis in their cottage; and the third time 6 participants came, 1 was detained by police, and 3 had emotional disturbances and refused to come. This lends some credence to the question of whether older age presents a challenge to service delivery and therefore will affect the efficacy of the intervention.

This study also analyzed the correlation between higher starting YOQ scores and greater improvement. Analysis of the data found a negative correlation, meaning the higher the YOQ score the greater the difference in the pre- and post-intervention YOQ measure. Therefore, the worse the symptomology the greater the improvement experienced. This reflects the findings of Magnelli and Magnelli, the creators of the model (2011).

Finally, another question to consider is if the YOQ is an appropriate tool of measurement for this intervention. The YOQ measures six psychosocial categories: interpersonal distress, somatic, interpersonal relationships, social problems, behavioral dysfunction, and critical incidents. The Power Tools for Living EAP model seeks to teach six psychosocial skills: respect, responsibility, relationship skills, boundaries, empathy, and choices and

consequences. The YOQ was chosen as an assessment tool because of its backing research and it appears to be a strong match with the Power Tools for Living EAP program. However, a quantitative study exploring what the youth participants feel they have gained or learned from the program might have been a better first step in order to determine what the outcomes of the intervention actually are.

### Limitations

Similar to many of the AAI research studies, this study has a number of limitations: small number of participants, inconsistency of evaluation, inability to rule out other factors, lack of control group, and lack of a double-blind procedure. The small number of participants is due to several factors. For one, financial constraints on both Special Spirit, the intervention providing agency, and the partnering residential treatment facilities limits the number of groups. Special Spirit offers the services at no-cost because the residential facilities would not otherwise be able to afford the services. However, Special Spirit is itself a non-profit and has only been able to provide no-cost services after obtaining grants and donations. Second, the groups of youth participants must travel to Special Spirit, some commuting for as long as an hour to get there. Transportation issues have created some challenges in getting youth participation and agency cooperation. Finally, the groups are kept small in order to ensure the safety of the participants.

Another challenge in documenting the efficacy of this EAP model has been inconsistency in reporting guardian/staff. Special Spirit distributed the YOQ forms to the residential facility of each youth participant and asked for it to be completed no more than 2 weeks prior to the EAP group and a second one completed no more than 2 weeks after the group. However, Special Spirit did not specify who was to fill out the YOQ nor that the same person should fill out the YOQ both times. In some cases, a therapist completed the form and in others it was a case manager or a social worker or a parent, and with at least some of the participants of which I was able to determine the pre- and post-YOQ were completed by different people.

Another limitation is that only the YOQ was consistently completed. In addition to the YOQ, Special Spirit also collected the corresponding Youth Outcome Questionnaire – Self Report (YOQ-SR) in which the youth completes the form. Unfortunately, the YOQ-SR is only appropriate for youth aged 12 and up so only five were collected and one of those had to be tossed out. That means that the evaluation measures only assessed the adult or clinicians' perspectives on the youth's improvement.

The other limitations reflect those methodological problems addressed by Stern and Chur-Hansen (2013). One, it is difficult to rule out other possible factors that could influence a change in the YOQ scores. These factors could include interaction with nature, getting to leave the stressful environment of the residential treatment facility, interaction with Special Spirit staff, and benefits

from other therapeutic treatments they received concurrently. One possible way to begin to address this concern would be to include a control group, however this study did not include that. Finally, a randomized selection and double-blind experiment design would provide the greatest validity for the efficacy of this intervention, but due to the need to screen for allergies and phobias, receive approval for the youth to receive the treatment (which required court orders in some cases), and the presence of the animal, achieving this gold standard of quantitative research remains challenging.

#### Recommendations for Social Work Practice, Policy and Research

As mentioned in this study and throughout the research on AAI there is a need for more research on AAI. This study provides research on a particular AAI, the Power Tools for Living EAP model developed by Magnelli and Magnelli with EAGALA (2013). However, even this information warrants further investigation. The analysis of the data did not show a significant association between the treatment intervention and improvements in YOQ scores. For future study, it would be interesting to explore through qualitative interviews what outcomes the youth participants report. This would give the youth an opportunity to share their experience and have their voice heard.

Other aspects to include in a future study of the Power Tools for Living EAP model would include other quantitative research. For one, increasing the number of groups provided in order to collect a larger data sample. Two,

including the use of control groups would increase the validity of the study. In a future quantitative study, a good design might include three groups: the group receiving the Power Tools for Living EAP intervention, a group participating in equine-assisted activities, and a group receiving neither.

Finally, the correlations identified between both age and YOQ pre-intervention scores and improvements in YOQ post-scores warrants further study. The younger the youth participant the more likely they were to have a reduction in their post-intervention YOQ score. Also, the higher the pre-intervention YOQ score was the more likely they were to have a reduction in their post-YOQ score. Both this study and the studies by Magnelli and Magnelli (2013) found this correlation. If further research continues to find this to be true then it might be important in informing who would best benefit from this intervention.

In addition to guiding future research, the correlations identified by Magnelli and Magnelli (2013) and this study suggest that the Power Tools for Living therapeutic intervention might be most effective with younger participants. The data showed that the younger participants experienced a reduction in their post-intervention YOQ score while the older participants did not. Therefore, Special Spirit might want to target younger participants for future EAP groups. However, it is uncertain whether this rule holds true for all EAP or solely for the Power Tools for Living model. Perhaps the curriculum as designed by Magnelli and Magnelli is only effective at a particular

developmental level, but another EAP intervention could effectively address older adolescents.

Another informative finding of this study is the greater efficacy of the program for those participants with higher pre-intervention YOQ scores. Participants with higher YOQ scores tend to experience worse symptomology along a host of psycho-social dimensions, for example: running away, suicidal ideation, risky sexual behaviors, major depression and/or anxiety, and criminal activities. For this reason, many of these youths are placed into higher levels of care, such as a residential treatment facility versus a foster home or relative care. Non-professional placements often feel these youth are too much to handle. Unfortunately, youth in residential placements often pick up new bad habits from their peers in placement, see their emotional and behavioral symptoms worsen, and suffer attachment issues. The youths who need the greatest help are often relegated to placements that exacerbate their issues.

However, if the Power Tools for Living model can be an effective intervention for younger participants, and particularly for those with the highest YOQ scores, then it could potentially provide a powerful treatment option and turning point in the life of a youth who has experienced maltreatment. If a five-week EAP program can lead to a significant reduction in those areas measured by the YOQ then social work practitioners would have a powerful tool in decreasing the behaviors that lead to higher levels of placement. The Power Tools for Living EAP model could be utilized with youth who have

experienced maltreatment and are currently placed in residential treatment facilities but also with youth on the brink of being placed in a residential treatment facility or in treatment foster care homes to help step down the level of care required for that youth.

### Conclusions

Though this study did not find a significant association between the Power Tools for Living EAP program and reduction in the participants' scores it did provide research for the field of AAI and leads for future study. Areas for further study include the correlation between age and higher starting YOQ scores and greater reductions. Also, a qualitative study that focuses on the youth participants' experiences may provide important feedback on the impact of the intervention. Finally, future quantitative studies should use more participants and include a control group.

APPENDIX A  
AGENCY'S CONFIDENTIALITY



Client Name: \_\_\_\_\_ DOB: \_\_\_\_\_

### CONFIDENTIALITY INFORMATION

- I. Content obtained in the therapy sessions will be handled professionally and confidentially. This information will be used by your therapist, the horse professional, and the supervisor for your therapeutic benefit. If for treatment purposes, we need information from another party, we will ask you to sign a Release of Information Form.
- II. To further maximize the benefits of therapy activities and to assess these benefits, you may be asked to complete a pre-test before starting therapy and post-test after completion of therapy. The data collected will be used to improve therapy services for others in the future and to provide data needed in grant applications. No personal information will be disclosed in these findings.
- III. **Confidentiality is forfeited** for any of the following:
  - a. If you posed serious physical danger to yourself or another person.
  - b. If you disclose that you or another person has physically or sexually abused or molested a child or an incompetent or disabled person.
  - c. If you disclose that a child, an incompetent or disabled person is suffering from neglect.
  - d. Defense of claims brought by client against the therapist and/or horse professional of Special Spirit EAP Services.
  - e. Reporting to relevant agencies such as court and insurance company as may be ordered by the Court system or for third party payment.
  - f. If you disclose that you have committed a crime.

If any of a-f apply immediate action must be taken. I have read and understand the Confidentiality Information \_\_\_\_\_ (initial)

### CONSENT TO TREATMENT

After thoroughly reading, understanding and receiving a copy of the above information, I give my consent to treatment (including assessment and therapy) to Special Spirit EAP Services. I have read and understand the policies and information state above.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

9889 Helen Ave - Shadow Hills - CA - 91040 - P: 323-661-3090 - F: 888-278-6238  
E: [info@specialspirit.org](mailto:info@specialspirit.org) - [www.specialspirit.org](http://www.specialspirit.org) - A non profit 501(c)3 ID# 26-2504871

APPENDIX B  
IRB APPROVAL

**CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO**  
**SCHOOL OF SOCIAL WORK**  
*Institutional Review Board Sub-Committee*

Researcher(s) Meghan Anderson  
Proposal Title A quantitative study of Animal-Assisted Interventions with youth who have experienced Maltreatment  
# 101565

Your proposal has been reviewed by the School of Social Work Sub-Committee of the Institutional Review Board. The decisions and advice of those faculty are given below.

-----  
Proposal is:

- approved
- to be resubmitted with revisions listed below
- to be forwarded to the campus IRB for review

Revisions that must be made before proposal can be approved:

- faculty signature missing
- missing informed consent  debriefing statement
- revisions needed in informed consent  debriefing
- data collection instruments missing
- agency approval letter missing
- CITI missing
- revisions in design needed (specified below)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Jane [Signature] \_\_\_\_\_  
Committee Chair Signature Date 10/22/2015

Distribution: White-Coordinator; Yellow-Supervisor; Pink-Student

## REFERENCES

- Bachi, K. (2012). Equine-Facilitated psychotherapy: The gap between practice and knowledge. *Society & Animals*, 20(4), 364-380. doi:10.1163/15685306-12341242
- Balluerka, N., Muela, A., Amiano, N., & Caldentey, M. A. (2014). Influence of animal-assisted therapy (AAT) on the attachment representations of youth in residential care. *Children & Youth Services Review*, 42103-109. doi:10.1016/j.chilyouth.2014.04.007
- Becker-Weidman, A. (2009). Effects of early maltreatment on development: A descriptive study using the Vineland Adaptive Behavior Scales-II. *Child Welfare*, 88(2), 137-161.
- Bender, K., Postlewait, A. W., Thompson, S. J., & Springer, D. W. (2011). Internalizing symptoms linking youths' maltreatment and delinquent behavior. *Child Welfare*, 90(3), 69-89.
- Berget, B., Grepperud, S., Aasland, O. G., & Braastad, B. O. (2013). Animal-assisted interventions and psychiatric disorders: knowledge and attitudes among general practitioners, psychiatrists, and psychologists. *Society & Animals*, 21(3), 284-293. doi:10.1163/15685306-12341244
- Berry, A., Borgi, M., Terranova, L., Chiarotti, F., Alleva, E., & Cirulli, F. (2012). Developing effective animal-assisted intervention programs involving visiting dogs for institutionalized geriatric patients: a pilot study. *Psychogeriatrics*, 12(3), 143-150. doi:10.1111/j.1479-8301.2011.00393.x
- Boston Children's Hospital. (2005). *Pawprints*. Retrieved from <http://www.childrenshospital.org/patient-resources/family-resources/pawprints>
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 28(5), 759.
- Chumley, P. R. (2012). Historical perspectives of the Human-Animal Bond within the Department of Defense. *U.S. Army Medical Department Journal*, 18-20.
- Chur-Hansen, A., McArthur, M., Winefield, H., Hanieh, E., & Hazel, S. (2014).

Animal-assisted interventions in children's hospitals: A critical review of the literature. *Anthrozoos*, 27(1), 5-18.  
doi:10.2752/175303714X13837396326251

EAGALA. (2009). Power tools for living by Robert and Nancy Magnelli – 5 – week EAL group program teaching emotional constructs. Retrieved from <http://www.eagala.org/PowerTools>

Erikson, E. (1963). *Childhood and society*. New York, NY: W. W. Norton.

Fine, A. H. (2010). *Animal-Assisted Therapy: Theoretical foundations and guidelines for practice* (3<sup>rd</sup> ed.). London, UK: Elsevier.

Grinnell, R. & Unrau, Y. (2014). *Social work research and evaluation: Foundations of evidence-based practice* (10<sup>th</sup> ed.). New York, NY: Oxford University Press.

Hines, L. M. (2003). Historical perspectives on the Human-Animal Bond. *American Behavioral Scientist*, 47(1), 7-15.

Jamieson, D. (2011). Reflections on attachment. *Relational Child & Youth Care Practice*, 24(1/2), 124-126.

Kamioka, H., Okada, S., Tsutani, K., Park, H., Okuizumi, H., Handa, S., Oshio, T., Park, S.J., Kitayuguchi, J., Abe, T., Honda, T., & Mutoh, Y. (2014). Effectiveness of animal-assisted therapy: a systematic review of randomized controlled trials, *Complementary Therapies in Medicine*. <http://dx.doi.org/10.1016/j.ctim.2013.12.016>

Krause-Parello, C. A., & Friedmann, E. (2014). The effects of an animal-assisted intervention on salivary alpha-amylase, salivary immunoglobulin A, and heart rate during forensic interviews in child sexual abuse cases. *Anthrozoos*, 27(4), 581-590.  
doi:10.2752/089279314X14072268688005

Kruger, K. A., & Serpell, J. A. (2006). Animal-assisted interventions in mental health: Definitions and theoretical foundations. In A.H. Fine (2<sup>nd</sup> ed.). *Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines* (pp. 21-38). San Diego, CA: Academic Press, Elsevier.

Levinson, B. M. (1997). *Pet-Oriented child psychotherapy* (2<sup>nd</sup> ed.). Springfield, IL: Charles C Thomas, Publisher, Ltd.

Lev-Wiesel, R., & Sternberg, R. (2012). Victimized at home revictimized by

peers: Domestic child abuse a risk factor for social rejection. *Child & Adolescent Social Work Journal*, 29(3), 203-220.  
doi:10.1007/s10560-012-0258-0

Magnelli, R. G. & Magnelli, N. (2011). *Power tools for living*. Carmel, CA: EAGALA.

Mandrell, P. (2014). *Introduction to equine-assisted psychotherapy: A comprehensive overview* (2nd ed.). Santaquin, UT: EAGALA-Advanced.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396. doi:10.1037/h0054346

Miller, A., Esposito-Smythers, C., Weismoore, J., & Renshaw, K. (2013). The relation between child maltreatment and adolescent suicidal behavior: A systematic review and critical examination of the literature. *Clinical Child & Family Psychology Review*, 16(2), 146-172. doi:10.1007/s10567-013-0131-5

Mills, D., & Hall, S. (2014). Animal-assisted interventions: making better use of the Human-Animal Bond. *Veterinary Record: Journal Of The British Veterinary Association*, 174(11), 269-273. doi:10.1136/vr.g1929

Nordgren, L., & Engström, G. (2014). Effects of dog-assisted intervention on behavioural and psychological symptoms of dementia. *Nursing Older People*, 26(3), 31-38.

O'Haire, M. (2013). Animal-assisted intervention for autism spectrum disorder: A systematic literature review. *Journal of Autism & Developmental Disorders*, 43(7), 1606-1622. doi:10.1007/s10803-012-1707-5

OQ Measures. (2014). *What can the Y-OQ® 2.01 tell you about your younger clients?* Retrieved from <http://www.oqmeasures.com/measures/youth-adolescent-measures/y-oq/>

PAC. (n.d.) *Our programs*. Retrieved from <https://www.uclahealth.org/PAC/Pages/our-programs.aspx>

PATH International. (2016) About PATH International. Retrieved from <http://www.pathintl.org>

Pedersen, I., Ihlebæk, C., & Kirkevold, M. (2012). Important elements in farm

- animal-assisted interventions for persons with clinical depression: a qualitative interview study. *Disability & Rehabilitation*, 34(18), 1526-
- Pet Partners. (n.d.) *Animal-assisted therapy for professionals*. Retrieved from <https://petpartners.org/learn/aat-professionals/>
- Puppies Behind Bars. (n.d.). *Puppies behind bars: about us*. Retrieved from <http://www.puppiesbehindbars.com/home>
- Schultz, P. N., Remick-Barlow, G. A., & Robbins, L. (2007). Equine-assisted psychotherapy: a mental health promotion/intervention modality for children who have experienced intra-family violence. *Health & Social Care In The Community*, 15(3), 265-271. doi:10.1111/j.1365-2524.2006.00684.x
- Smith-Osborne, A., & Selby, A. (2010). Implications of the literature on equine-assisted activities for use as a complementary intervention in social work practice with children and adolescents. *Child & Adolescent Social Work Journal*, 27(4), 291-307. doi:10.1007/s10560-010-0201-1
- Stern, C., & Chur-Hansen, A. (2013). Methodological considerations in designing and evaluating animal-assisted interventions. *Animals (2076-2615)*, 3(1), 127-141. doi:10.3390/ani3010127
- Stewart, L. A., Dispenza, F., Parker, L., Chang, C. Y., & Cunnie, T. (2014). A pilot study assessing the effectiveness of an animal-assisted outreach program. *Journal Of Creativity In Mental Health*, 9(3), 332-345. doi:10.1080/15401383.2014.892862
- Van Harmelen, A., Hauber, K., Gunther Moor, B., Spinhoven, P., Boon, A. E., Crone, E. A., & Elzinga, B. M. (2014). Childhood emotional maltreatment severity is associated with dorsal medial prefrontal cortex responsivity to social exclusion in young adults. *Plos ONE*, 9(1), 1-11. doi:10.1371/journal.pone.0085107
- Weinbach, R. W., & Grinnell, R. M. (2014). *Statistics for social workers* (9th ed.). Boston, MA: Pearson Education, Inc.
- Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York, NY: Basic Books.