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Measuring Bonds in Equine-Facilitated Psychotherapy

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MEASURING BONDS IN EQUINE-FACILITATED PSYCHOTHERAPY

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ABSTRACT

Equine-facilitated psychotherapy is a type of animal-assisted intervention that has potential to be an effective therapeutic modality in the treatment of psychiatric disorders. It is theorized that a meaningful relationship is formed between client and horse; this relationship is thought to inspire meaningful change in the client. The current study found evidence of human-equine bonds and determined they can be measured quantitatively using adapted bonding scales. This study also explored variables that may impact bonds formed between clients and horse co-therapists. Finally, a potential correlation between the strength of the bond and the severity of symptoms over the course of therapy was investigated.

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INTRODUCTION

There has been an increasing amount of interest in animal-assisted interventions (AAI). Animals have been integrated into therapeutic practices ranging from physical therapy to mental health with reported positive outcomes. However, research has not kept up with interest in this field (Fine, 2010). More research needs to be conducted in the area of AAIs so that sound, empirical evidence can support positive anecdotal experiences. One such type of therapy is equine-facilitated psychotherapy (EFP). EFP is a type of AAI that incorporates horses into mental health therapy. This study explores one possible mechanism contributing to the efficacy of equine-facilitated psychotherapy. This research also investigates if the connection between clients and horses can be empirically measured.

What are Animal-Assisted Interventions?

"Animal-Assisted Intervention" (AAI) is a collective term for the organized use of animals for therapeutic purposes (Berget & Braastad, 2008). AAIs encompass a broad array of interventions, ranging from fish tanks in waiting rooms (Beck & Katcher,1996) to animals being directly involved in the treatment of post-traumatic stress disorder (Weisenburger, 2011). An AAI is further classified as one of two types: animal-assisted activity (AAA) or animal-assisted therapy (AAT) (Berget & Braastad, 2008). See Appendix A for list of acronyms.

Animal-assisted activity. AAAs are animal activities without strict guidelines or oversight that may have therapeutic effects to given populations (Berget & Braastad, 2008). AAAs may offer therapeutic benefit to participants and do not require a licensed

professional to conduct. However, they are not defined as explicitly as other therapeutic interventions. AAAs would be well suited for situations where improvements in quality of life are a key focus versus more in-depth clinical issues.

Examples of AAAs include companion animal visits to nursing homes or children reading to dogs at libraries. In a study on the use of animals for improving quality of service, Hansen, Messinger, Baun, and Mengel (1999) found that the presence of a dog reduced signs of behavioral distress in children. The study explored the therapeutic effects of the presence of a companion animal (specifically trained therapy dogs) on children during medical examinations. The dog was not incorporated into goal setting or treatment planning, that is, the interaction with the dog is not used to treat the medical conditions found. That would make this intervention an AAA.

This study had good ecological validity as it was conducted in a pediatric clinic with existing pediatric clients already seeking medical attention; the exams were also performed by medical staff based on the individual participant's presenting problem. The study had an experimental and a control group which adds to the study's overall credibility. The dependent variables being assessed included various physiological measures of arousal (heart rate, blood pressure, temperature) and behavioral signs of distress using the Observation Scale of Behavior Distress. The independent variable being assessed was the presence/absence of a trained therapy dog in the room during the medical examination. Significant differences were found between the dog and no-dog groups on behavioral signs of distress with the experimental group displaying lower

levels of distress. Having a dog present during exams has therapeutic effects which may aid in clinical efficiency and facilitate accurate diagnoses.

An example of an equine-related AAA is therapeutic riding. Burgon (2003) found that women with mental health diagnoses reported increases in self-confidence after a six-month therapeutic riding program. Participants learned about horse care, stable maintenance, and groundwork. Groundwork involves grooming and other training activities which take place with the person on the ground rather than on horseback. Another important aspect of this therapeutic riding program was for participants to build relationships with their therapy horses during both groundwork and riding activities. The study had numerous limitations including small sample size and lack of a control group. However, the researcher stressed that the participants' self-reported increases in self-confidence were dramatic and led to positive changes in other areas of their lives. Burgon also demonstrated that therapeutic riding could be a valuable model to counteract learned helplessness, which may be comorbid with mental illness. Therapeutic riding may offer a chance for participants to experience a sense of control and power, which can then be translated to other areas of their lives. Empirical research, with larger groups, some type of comparison groups, and psychometrically sound measures, is needed to augment the findings from this study which relied on case studies to obtain anecdotal evidence.

Therapeutic riding has also been shown to have positive results with students with special needs (Cawley, Cawley, & Retter, 1994; Kaiser, Smith, Heleski, & Spence, 2006). In an observational study, Kaiser et al. (2006) found significant decreases in anger

for boys in special education after an eight-session therapeutic riding program. This study also found significant improvements in mothers' ratings of their children's (boys in special education) behavior. Since therapeutic riding programs can be conducted by individuals without mental health (or other type of health) licensure, it is considered an AAA within AAIs (EAAT Definitions, 2011).

Animal-assisted therapy. AAT is a type of AAI that involves the use of the animal as a key element of the therapeutic intervention (Berget & Braastad, 2008). In AAT, medical or mental health professionals guide treatment planning and therapy. Animals can be used in various methods according to the theoretical orientation of the clinicians and the needs of the clients.

In a project on AATs, Beck, Seraydarian and Hunter (1986) studied the use of birds to increase attendance and participation in therapy and activity groups. Since the features of the animal (make the environment less threatening) were used to create treatment goals and desired treatment outcomes (increased attendance and participation in group sessions), this type of intervention would be considered an AAT. The authors conducted a randomly assigned, randomly designated study with an experimental group (caged birds present during activities) and a control group (no birds). Participants were inpatients at a state hospital with diagnoses that included paranoid schizophrenia, residual schizophrenia, schizoaffective disorder, and affective disorder. The participants in this study made the findings all the more important, as schizophrenia and schizophrenia related diagnoses are among the most difficult to treat with psychotherapy interventions. Significant increases in attendance and participation were found for patients in the

experimental group. Participants in the bird group were also significantly less hostile after the project. One of the most noteworthy findings of this study was the difference in successful discharge rates for the two groups. Four patients in the bird group were deemed fit for discharge, whereas none of the non-bird group were discharged during the eleven week study.

In AAT, animals can be incorporated into therapy from treatment planning to termination. The presence or unique characteristics of animals are considered to be an essential element in the therapy process. In a qualitative study, Mason and Hagan (1999) interviewed eighteen psychotherapists to determine what type of clients were being served by animal-assisted psychotherapy (AAP), what the psychotherapists' motivations were for using pets in therapy, and the benefits to both clients and therapists. The psychotherapists (which included social workers, psychologists, psychiatrists, and counselors) reported using AAP for 6-10 year olds, females, and Euro-Americans most often.

Some of the reasons given for practicing AAP included using animals to build a relationship/rapport with clients, having seen prior benefits of human-animal interactions, and providing clients' with safe confidantes right away (Mason & Hagan, 1999). Clients' may not be comfortable with therapy or the therapist from the beginning, but therapy animals may help to quicken the progress or provide an indirect manner to disclose sensitive information. One therapist shared a story in which the inclusion of an animal provided a dramatic impact on therapy progress:

> I was seeing a 5-yr-old boy who had been molested by a teenager, and he was selectively mute (he would only speak at home with family). He was not speaking in therapy and maybe 3 to 5 months into treatment, I asked him if he would be interested in the dog I had coming into the appointment. He was and he lifted the dog's ear and told the dog all about being molested. That opened the door for me. (Mason & Hagan, 1999, pp. 1239)

The study also showed that most of the psychotherapists interviewed reported that the animals served an important role as "ice breaker," they made therapy less daunting, and the presence of the animals was soothing and provided "contact comfort". It was also shared that the pets could become objects for projection of clients' feelings and that these projections can be used to work through negative feelings.

The inclusion of pets in therapy also benefited the therapists. Therapists reported greater job satisfaction, improved effectiveness with clients, increased business and decreased cancellation rates (Mason & Hagan, 1999). Including pets in their practices helped therapists decrease burnout, improve their own mental health, and made them more approachable and likeable. Although this study had many limitations (potentially biased reports from psychotherapists, biased sample group, only dogs as therapy animals, and lack of formal AAP training of psychotherapists), the findings are consistent with other research in the area. Furthermore, the study provided a firsthand look into the practice of selected practitioners of AAP.

What is Equine-Facilitated Psychotherapy?

Equine-facilitated psychotherapy (EFP) is a type of AAT that incorporates horses into the mental health treatment of clients. EFP is also called equine-assisted psychotherapy (EAP) by proponents of different therapeutic models. This paper will use the term equine-facilitated psychotherapy or EFP. EFP is a form of psychotherapy that includes equine activities within the context of the therapy session with mental health professionals and equine specialists. It is an experiential form of therapy that uses interactions with horses to explore and interpret personal behaviors and emotions (EAAT Definitions, 2011). Equine specialists, using knowledge of horse behavior, provide feedback to clients and mental health professionals about the horses' reactions to the clients' behavior. Therapists may then pose questions to clients that explore what could be causing particular horse behaviors and how these behaviors relate to other interactions in the clients' lives. There is an ongoing therapeutic relationship between clients, horses and therapists. This is considered a triadic, therapeutic team. The horses are said to act as therapists in their own right. Horses may also build the clients' confidence and provide conduits for the clients to recognize and process their emotions. (Equine-facilitated psychotherapy: Partnering with horses, 2011). Treatment planning and goals are used in a manner similar to other forms of psychotherapy, while also actively using characteristics of the horse to create treatment plans and activities (EAAT Definitions, 2011).

Masini (2010) describes EFP as a technique that can be used within numerous theoretical orientations and therapy modalities (such as, individual, family, group).

Equine-facilitated psychotherapy involves experiential activities that promote discussion between clients and treatment teams and reflections on the part of the clients. Examples of activities are grooming and other chores, watching the horse herd and observing the interaction between the horses, or getting a horse to go over an obstacle. EFP can also be used with couples and groups to explore more effective ways to communicate. No matter the activity, EFP focuses on using experiences with horses as metaphors for the clients' lives.

There are multiple organizations that educate, train and certify professionals as either the mental health professionals or the equine specialists in equine therapy settings. The Equine Assisted Growth & Learning Association (EAGALA), founded in 1999, offers certification for equine specialists, as well as mental health professionals at the "EAGALA Certified" and "Advanced Certified" levels. EAGLA certified level is obtained after completing six days of training for EAGALA Model Practice Part 1 and 2 (Certification program, 2012). Advanced Certified level is obtained after completing additional training and a mentorship experience. Equine specialists must meet a minimum of 6,000 hands-on hours with horses, as well as complete 100 hours of continuing education prior to certification by EAGALA. Mental health professionals must be properly educated and licensed in their field (social work, psychology, etc.) in addition to completing the EAGALA training. A unique aspect of the EAGALA model is the emphasis that all activities take place with the client on the ground (Masini, 2010). The explanation for this approach is that riding would interfere with horses natural reactions to clients (FAQ, 2012). While under saddle, horses may respond to individuals

as they are trained, not as they are instinctually inclined to respond (FAQ, 2012). Trained responses would interfere with horses being used as metaphors and feedback models.

Another organization that trains and certifies clinicians in equine-facilitated psychotherapy and equine assisted activities is the Professional Association of Therapeutic Horsemanship (PATH). PATH was formerly known as, the Equine Facilitated Mental Health Association (EFMHA). EFMHA was founded in 1996 and later merged with the North American Riding for the Handicapped Association to form the organization now known as PATH (Learn about EAAT, 2012). The organization certifies both mental health professionals and equine specialists. Unlike EAGALA, PATH believes therapeutic riding is an important part of the EFP process, as well as activities done from the ground (Masini, 2010).

Various models of EFP has been used with youth with severe emotional disorders (Bowers et al., 2007), adult female survivors of abuse (Meinersman, Bradberry, & Bright Roberts, 2008), and at-risk youths (MacDonald &Cappo, 2003) with positive qualitative results. MacDonald and Cappo (2003) conducted a small, one-group study that measured participants' pre- and post-therapy scores of perceived competence, locus of control, and aggression. Seven at-risk youths were referred to the existing equine facilitated mental health program from residential treatment centers and homes. After 14 weekly, 60-minute therapy sessions, participants showed significant increases in self-esteem measured by both the Global Self-Worth subscale of the Harter's Perceived Competence scale and the Self-Esteem Index, as well as, significant increases in ratings of internal

locus of control. Researchers concluded that the increases in measures of internal locus of control may cause adolescents to take more responsibility for their life choices.

The benefits of EFP have also been shown for adults. In a small qualitative study, Meinersmann et al. (2008) found that female survivors of abuse reported increases in feelings of control and self-esteem, as well as, decreases in feelings of depression. Participants also reported greater success in shorter amounts of time with EFP than other types of psychotherapy.

Another study focused on the efficacy of EFP with children who have experienced intra-family violence, including interparental violence, child abuse/neglect and sexual abuse (Schultz, Remick-Barlow, & Robbins, 2007). A convenience sample was taken of all children referred to a specific therapist over an 18 month period. Variables were pulled from information standard to the practice of psychotherapy; attribute variables included client's mental health diagnosis (as determined by the therapist using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)), history of violence (grouped by type), gender, age, and ethnicity. All participants received the independent variable (IV), equine-facilitated psychotherapy. The sole dependent variable was the client's Global Assessment of Functioning (GAF) score, determined at intake, at three month intervals throughout treatment, and at termination. All participants' GAF scores improved and there was a statistically significant correlation between percentage increase in GAF and the number of EFP sessions given. Participants were divided into groups based on age in years (<8, 8-12, > 12) to determine if improvements in GAF differed by clients' age. It

was found that the greatest improvements in GAF occurred in children younger than eight years old. Children with history of abuse or neglect also had significantly greater increases in GAF by percentage.

The study's design and findings are informative for future research on EFP. Findings suggest that more research is needed to determine what type of client (age, gender, diagnosis, presenting problem, developmental history, etc.) benefits most from EFP. Schultz et al. (2007) stated that it is unlikely that EFP is suitable for all clients and some may in fact be opposed to it. The manner in which this study was conducted is well-suited for assessing or obtaining information from existing EFP programs; therapists do not have to administer any additional measures outside of their standard practices. However, as the study lacks comparison groups and does not have controlled levels for the IV (participants had variable numbers of sessions depending on their needs), determining greater efficacy of EFP over other psychotherapy practices is impossible. The study did demonstrate clinical significance; specifically, the studied population demonstrated a rapid response to EFP.

How does EFP work?

Despite these positive findings, there is an absence of an overarching theory to explain the effectiveness of all AAIs, including EFP. Additional research is needed to investigate the mechanisms underlying EFP, specifically what may be causing changes in clients. The current explanations pull from established theories within psychology; however, these theories have not been established for animal-human relationships as they have been for human-human relationships.

One hypothesized mechanism of EFP is the idea that horses may act as transference objects (Klontz, Bivens, Leinart, & Klontz, 2007). Horses may mirror the emotional and physical states of participants in EFP. Perhaps because horses are by nature prey animals, they are especially sensitive to minute behaviors of people that may be indicative of the clients' underlying emotional states (Kohanov, 2001). One EFP participant describes the experience in this way:

> I think being able to right away have a mirror of what I was presenting as a person… One good example is when I walked into a stall. If you have all this frustrated spinning, chaotic energy going on, even, no matter what if it's in your head and you're not presenting that…they pick up on that… they pick up on that because they are so sensitive to prey that it's mirrored right away. They are going to back up. They are going to ignore you. (Meinersman et al., 2008, pp. 40)

Horses' reactions to individuals can be interpreted by qualified equine specialists and relayed to therapists to discuss with clients. Horses provide unbiased feedback, which clients can use to tackle their psychological issues (Klontz et al., 2007). " …'The individual has to watch the horse and observe his reactions. The horse acts as a mirror of the person on the ground' " (Equine-facilitated psychotherapy: Partnering with horses, 2011, para. 10).

Another explanation for the use of AAIs is the idea of animals as facilitators of social contact (Berget & Braastad, 2008). Animals may make their owners more approachable and individuals more likely to engage animal owners in conversation. This may lead to

"positive social interactions" (Urichuk & Anderson, 2003). This explanation has been used to describe the impact animals have on the rapport building process in psychotherapy. "Animals may open the door, so to speak, to garner attention, to initiate discussions, and to establish the trust needed in the therapeutic process" (Bowers, Ewing, McDonald & Taylor, 2007, pp. 60). Therapists with animals may be viewed more positively and clients may find it easier to engage in the process of therapy when companion animals are present. Since horses are so different from humans and companion animals (greater size of horses, prey animal vs. predator), research is needed to determine if horses provide for similar experiences (Keaveney, 2008).

Many untested explanations center around the relationship formed between clients and therapy animals. One theory guiding animal-assisted interventions is that animals may function as attachment figures (Berget & Braastad, 2008). So far, theories on human-animal relationships have centered on theories explaining human-human relationships. Crawford, Worsham, and Swinehart (2006) explained that the use of the term "attachment" when investigating AAIs can be misleading since animal bonding scales are not completely compatible with developmental psychology's attachment theory. Attachment theory's definition of attachment involves behaviors in which individuals seek out other specific individuals as a secure base because those individuals seem more capable of dealing with life's stresses. In contrast, pet attachment has been described as a felt emotional bond, a hierarchical relationship, and a degree of affection (Crawford et al., 2006; Johnson, Garrity, & Stallones, 1992).

Human-companion animal bonding researchers primarily use self-report surveys that focus on perceived feelings and attitudes toward pets (Crawford, Worsham, & Swinehart, 2006). Authors state that some bonding scales being used may contain some elements of human attachment theory including, representational models, seeking proximity, secure base, goodness of fit and emotional bond. However, the inclusion of some of these elements does not necessarily make the operational definitions used in prior research attachment theory compatible.

In a small qualitative study exploring underlying mechanisms of EFP, Meinersmann, Bradberry and Bright Roberts (2008) found several themes that persisted across stories of five female abuse survivors who participated in EFP. One such theme, "Horses as Co-therapists," seems to be in line with certain concepts within attachment theory (Berget & Braastad, 2008; Crawford et al., 2006; Meinersman et al., 2008). Subjects reported mirroring and sensitivity on the part of the horses (animals as representation models and goodness of fit), unconditional love and acceptance from the horses (emotional bond), horses remaining with them and providing comfort (secure base and seeking proximity), and feeling safe during EFP (secure base) (Berget & Braastad, 2008; Crawford et al., 2006; Meinersman et al., 2008). More research is needed to determine if attachment to or the bond with therapy animals does in fact affect therapeutic efficacy.

Purpose

As indicated previously, more research is needed in multiple areas to answer lingering questions about equine-facilitated psychotherapy. Larger studies with better

designs are needed to demonstrate that the benefits derived from EFP are unique to EFP and could not be accomplished with other psychotherapy techniques. Additionally, research is needed to investigate potential mechanisms of EFP to determine what qualities of EFP create reported positive change for clients.

The population for the present study did not allow for a control necessary for efficacy studies; all clients being studied have some type of therapeutic horse contact. Therefore, potential underlying mechanisms of equine-facilitated psychotherapy were investigated. The purpose of this study was to investigate three research questions: a) can clients form bonds with therapy horses, b) is the strength of bonds correlated with the severity of symptoms of the clients over the course of EFP, and c) do different characteristics (e.g. mental health diagnosis, sex, age, etc.) of the clients impact the strength of bonds formed with the horses during EFP? The findings of this study could be used to determine which clients are able to form stronger bonds with therapy horses and may help define best practices within EFP. The findings could also be used in future research to further investigate the impact of the bonds between clients and therapy horses on treatment outcomes. This study treated "bond" as a quantifiable relationship that can be measured with self-report surveys with items focusing on emotions, behaviors, and cognitions clients have about their relationships with therapy horses. As this operational definition does not cover the breadth of attachment theory's explanation of attachment, the term "attachment" will not be used but rather the term "bond."

Clients bond with therapy horses. Previous research has shown that bonds exist between pet owners and companion animals and that these bonds can be measured with

self-report surveys (Johnson, Garrity, & Stallones, 1992; Zasloff, 1996; Zilcha-Mano, Mikulincer, & Shaver, 2011). Evidence of clients forming bonds to therapy horses has been established through qualitative research (Meinersman et al., 2008). Empirical evidence would strengthen the claim that bonds can be established with horses. Furthermore, establishing a manner of assessing this bond, as in self-report surveys, would be helpful for future research. This research used an altered form of established, reliable surveys originally created to measure the bond owners have with companion animals, primarily dogs and cats.

In an initial pilot study, it was hypothesized that humans can form emotional bonds to horses and that these bonds can be measured using alterations of existing companion animal bonding scales. Data analysis included tests of internal consistency and validity. Results showed the altered bonding scales to be consistent measures of human-equine bonds. Based on numerous anecdotal reports and the pilot study to be explained below, it is also hypothesized that clients can form a bond with therapy horses during the course of equine-facilitated psychotherapy.

Bond strength and severity of symptoms. It is important to learn more about the strength of the bonds formed in therapy settings and what factors impact these bonds because numerous sources emphasize that it is the bonds with the horses that impacting positive changes in clients (Burgon, 2003; Masini, 2010; Meinersman et al., 2008; Vidrine, Owen-Smith, & Faulkner, 2002). "The social/emotional interaction between the horse and the client is integral to the experience and success of EFP/EFL sessions" (EAAT Definitions, 2011). Since the horse is considered by some to be a "co-therapist"

within the context of EFP (Bradberry et al., 2008; EAAT Definitions, 2011; Equine-facilitated psychotherapy: Partnering with horses, 2011), it is likely that the relationships the clients form with the horses would also impact the success of therapy, such as fewer clinical symptoms of mental illness. The idea of relationships impacting therapy is in keeping with common-factors theory of psychotherapy. Nearly all models of psychotherapy, including traditional psychoanalytic therapy, cognitive-behavioral therapy, person-centered therapy, and integrative therapies consider relationships between therapists and clients to be one of the most important factors in the effectiveness of therapy (Messner & Gurman, 2011). Positive therapeutic relationships/alliances are described as an essential part of successful psychotherapy treatment. It is hypothesized that a negative correlation exists between the strength of the bond and the severity of clinical symptoms over the course of equine-facilitated psychotherapy; that is, as the strength of the bond increases, clinical symptoms will decrease.

Client characteristics impact on bond in EFP. This research also investigated relationships between the client-horse bonds and client demographics including: mental health diagnosis, age, sex, and ethnicity. Differences bonding with pets have been found between the sexes; females form stronger bonds than males (Fine, 2010). Results from an initial pilot study, found significant differences between males and females on strength of emotional bond with horses. These findings indicate there are certain characteristics that may make it more conducive for certain people to form bonds with animals. If bonds are in fact present and influential during EFP, it is important to investigate factors that may impact bond strength.

Prior research shows different therapies are more effective with certain diagnoses; this suggests that there will be also be differences in responses to equine-facilitated psychotherapy (Chambless & Ollendick, 2001). Unique therapy modes and techniques have been created specifically for certain diagnoses, such as Dialectical Behavior Therapy for Borderline Personality Disorder, suggesting that not all therapies treat all diagnoses in comparable manners (Messner & Gurman, 2011). Tyler (1994) drew from personal clinical experience to conclude that equine psychotherapy may also be more beneficial to certain types of clients. Adolescents with Oppositional Defiant Disorder may benefit from EFP because this type for therapy requires focus on the horse and surroundings, which may make it difficult to maintain the defensive behavior that these clients typically display in therapy. Another type of clients that she feels may be well-served by EFP, are clients with control issues. Clients that over-control are more likely to let go and focus on the here and now of EFP sessions. Clients that have suffered abuse or trauma may find the ability to control a horse empowering. Depressed clients, severely stressed, angry, or anxious clients may also benefit from EFP as an introduction to the therapy process. Younger children and children with a history of abuse or neglect may benefit from EFP (Schultz, Remick-Barlow, & Robbins, 2007).

As EFP is more expensive and time-consuming (upkeep of facilities, care for horses, etc.) than other forms of psychotherapy, it is necessary to determine which clients are best served by EFP. This will allow clinicians to properly screen and refer potential EFP clients. It was hypothesized that individuals with different diagnoses, as well as different sexes and ages, will differ on the strength of bond they form with the therapy

horse. It was also hypothesized that clients' background may also impact the strength of the bonds formed with therapy horses. These differences in bonding may then impact the efficacy (reduction in symptoms) of EFP for different individuals.

PILOT STUDY

As a partial step to investigate research question 1 (Can clients form bonds with therapy horses?), a pilot study was conducted to a) determine if people form emotional bonds with their horses, b) test the validity of using three existing companion animal bonding scales to assess the bond between humans and horses, and c) determine if participants' gender, age, or number of years of contact with horses impact the strength of the human-horse bonds. The bonding measures used in this study, the Comfort from Companion Animal Scale (CCAS) and the Lexington Attachment to Pets Scale (LAPS) are generally accepted by researchers in the field (Crawford, Worsham, & Swinehart, 2006). An additional companion animal attachment measure included in the study, the Pet Attachment Questionnaire (PAQ), is based on attachment theory's definition of attachment (Zilch-Mano, Mikulincer, & Shaver, 2011).). The PAQ contains two subscales, avoidance and anxiety, that may be used to further explain weak bonds.

Method

Participants

After receiving an "Exempt" study status from the Fort Hays State University Institutional Review Board, participants were recruited from within the FHSU rodeo team and psychology department. Requirements for participation in the pilot study were a) participants were 18 years of age or older, b) participants provided informed consent, c)

participants currently owned horses or were involved in horse activities (rodeo, showing, pleasure riding, etc.). Convenience sampling techniques were utilized; if participants qualified, they were included in the study. Participant ages ranged from 18 years to 29 years (*M*=20.78, *SD*= 2.17). A total of 16 females, 15 males, and one unidentified individual participated in this study, for a total sample of 31 participants. The number of years of horse contact ranged from 1 to 24 (*M*= 12.50, *SD*= 6.70).

Measures

Comfort from Companion Animal Scale. The original CCAS was a thirteen item self-report survey that measures "attachment" to companion animals based on the perceived comfort they provide their owners (Zasloff, 1996). This definition of attachment/bond differentiates the CCAS from prior measures of companion animal bonding that contained items pertaining to behaviors ("How often do you sleep next to your pet?") that may exclude certain animals, including horses (Poresky, Hendrix, Mosier, & Samuelson, 1987). The items on the CCAS are scored using a four point (1-4) Likert scale with a higher overall score indicating a stronger bond with the pet. Reliability testing of the original CCAS yielded a Cronbach alpha of .85.

For the pilot study, the only change made to the CCAS was in wording; all occurrences of "pet" were changed to "horse." Scoring was as follows: 1=strongly disagree, 2=somewhat disagree, 3= somewhat agree, and 4= strongly agree. A "not applicable" option was also included to identify items which did not apply to the participants' relationships with their horses. See Appendix B for list of items on CCAS.

Lexington Attachment to Pets Scale. The LAPS is a twenty-three item survey with excellent psychometric properties originally designed to assess the relationship between cat and dog owners and their pets (Johnson, Garrity, & Stallones, 1992). The original items were coded 0-3: 0=strongly disagree, 1=somewhat disagree, 2=somewhat agree, 3=strongly agree. Coding was reverse-scored for negatively worded items. The internal consistency was calculated for the original twenty-three items with a Cronbach alpha of .93. Although the LAPS was well tested for reliability, it is believed to better measure strong attachments than weak attachments (Johnson, Garrity, & Stallones, 1992). Select items from the LAPS were included in the pilot study (See Appendix C). Changes were made to the measure for the purposes of the pilot study, including changing the scoring to match that of the CCAS and changing all occurrences of "pet" to "horse."

Pet Attachment Questionnaire. The PAQ was developed using attachment theory as its framework (Zilch-Mano et al., 2011). There are two subscales which represent two attachment insecurity dimensions, anxiety and avoidance. The two dimensions are orthogonal, consistent with prior research on human attachment relationships. The attachment anxiety scale had a reliability coefficient of .75, using test-retest methods. The pet avoidant attachment had a reliability coefficient of .80. Internal consistency was also high for both the avoidance and anxiety scales, with Cronbach alphas of .87 and .86 respectively.

To assess construct validity, the PAQ was tested with the CCAS, LAPS, and the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier, & Samuelson, 1987; Zilch-Mano et al., 2011). All prior animal bonding scales were inversely correlated with

the avoidance scale of the PAQ (Zilch-Mano, Mikulincer, & Shaver, 2011). Moderate positive correlations were found between the anxiety scale and prior bonding scales. These findings are consistent with predictions since "increased attachment anxiety is thought to be hyper activation of attachment to a pet" and increased pet attachment avoidance would be expected to create a weaker bond with a pet (Zilch-Mano et al., 2011, p. 349).

The findings also suggest that the PAQ should not be a measure of attachment strength but rather a measure of attachment orientation (Zilch-Mano et al., 2011). It would be a valuable measure to further assess factors which may explain a weak bond as measured by other bonding scales. For example, people with certain diagnoses may display a weak emotional bond, but when attachment insecurity in the form of avoidance is controlled for, the strength of the emotional bond may increase. For the purposes of the pilot study, changes were made to the PAQ (See Appendix D). Again, the term "pet" was changed to "horse." The scale was changed from a seven point scale to a five-point scale.

Procedures

Data collection took place after rodeo practice, during scheduled psychology classes and during a come-and-go survey session. A recruiting script was read defining requirements for participation in the study. If individuals qualified, they were asked to read and sign an informed consent form. Participants were then asked to complete a 60 item, self-report survey which consisted of selected items from the CCAS, the LAPS, and the PAQ (See Appendices B, C, and D). Following survey completion, participants were

read a debriefing statement briefly explaining the purpose of the study. Surveys were coded and entered accordingly. Statistical analysis was performed using IBM SPSS Statistics 20 software.

Results

Assessment of validity and reliability

To determine if existing companion animal bonding scales can measure human-equine bonds reliability and validity analyses were performed. The internal consistency of three bonding/attachment measures was tested by calculating a Cronbach alpha coefficient for each measure. All scales (CCAS, LAPS, PAQ avoidance, PAQ anxiety) were found to have high internal consistency with alphas of .90, .91, .93, and .83 respectively (See Table 1). A new Horse Bonding Scale (HBS), which combined all administered items of the CCAS and the LAPS, was also tested; an alpha coefficient of .95 was calculated for the combined scale.

To assess the convergent validity of these scales when assessing human-equine bonds, bivariate correlations were run for each combination of scales (See Table 2). A significant linear relationship was found between the CCAS and the LAPS total scores, r (28) = .87, $p < .001$. As predicted, the two measures of emotional bonding were positively correlated. A significant negative relationship was found between the PAQ avoidance scale and both the CCAS, r (27) = -.51, $p < .01$, and the LAPS, r (27) = -.40, $p < .05$. This indicates that individuals who report stronger emotional bonds to their horses would report less attachment insecurity in the form of avoidance. Neither the CCAS, r (26) = -.26, $p > .05$, or the LAPS, r (26) = .06, $p > .05$, were significantly correlated with

the PAQ anxiety scale, indicating that strong emotional bonds with horses are not related to anxious forms of attachment. Unlike the original testing of the PAQ, which found avoidance and anxiety to be orthogonal in nature (Zilch-Mano et al., 2011), a significant positive relationship was found between individuals' avoidance and anxiety with their horses, r (27) = .68, $p < .001$.

Principle components factor analysis was performed to determine if items from the equine pilot study loaded in the same manner as the companion animal results. It was expected that one factor would be found on the CCAS. When one component was extracted, all CCAS items had factor loadings of greater than .40. It was also expected that all LAPS items would load on one factor, however when one component was extracted 4 items (15, 18, 19, & 32) had factor loadings below .40 (.32, .34, .37, and .06 respectively).

Principle components factor analysis was conducted on the PAQ in two ways; first forcing each subscale (anxiety and avoidance) onto one factor and then by extracting two components. All items on the PAQ avoidance subscale had factor loadings above .40 (.45-.91) when one component was extracted for those items. When the same was done for the PAQ anxiety subscale, two items (36 and 38) had factor loadings below .40 (-.37 and .35 respectively). When two components were extracted from the entire PAQ using varimax rotation, several problem items emerged (See Tables 3 and 4). Item 36 did not load on either factor. Items 38, 44, 49, 54 and 55 all loaded on the opposite factor. While there may be questionable items which will be further explored in the thesis research, the scales seem to measure bonds similarly for companion animals and horses.

Differences in bonds based participants' demographics

Scores from the HBS were used to determine if bonds were related to participants' demographics. The hypothesis that males (*M*=94.42, *SD*=23.80) and females (*M*=115.94, *SD*=10.10) would differ on strength of emotional bonds with their horses was tested using an independent *t* test. The null hypothesis was rejected indicating significant differences between males and females in the strength of emotional bonds with their horses reported on the HBS. Females reported stronger emotional bonds to their horses, t (17.06) = -3.143, $p < .05$, equal variances not assumed. The hypothesis that males (*M*=26.57, *SD*=11.35) and females (*M*=18.07, *SD*=5.86) would differ on reported levels of avoidant attachment with their horses was tested using an independent *t* test. Males scored significantly higher on the PAQ avoidance scale, t (19.18) = 2.51, $p < .05$, equal variances not assumed. Significant differences were not found between males (*M*=27.86, *SD*=9.03) and females (*M*=23.93, *SD*=8.24) on reported levels of anxious attachment with their horses, t (26) = 1.2, $p > .05$.

It was hypothesized that the length of the participants' horse contact period would be correlated with their reported levels of emotional bonds. A bivariate correlation was run for participants' years of horse contact and participants' HBS total score. No significant linear relationship was found indicating emotional bonds reported with their horses are not related to how long participants have been around horses, r (27) = .05, $p > .05$. There was also no significant relationship found between participants' age and strength of emotional bond formed with horses, r (28) = .06, $p > .05$.

Discussion

These results demonstrate that people do form bonds with horses and these bonds are measurable quantitatively. Future research should investigate whether similar results can be achieved in clinical and youth populations. Bonds clients form with therapy horses would need to be shown if bonds are to be linked to efficacy.

The Comfort from Companion Animals Scale, the Lexington Attachment to Pets Scale, and the Pet Attachment Questionnaire were all found to be consistent measures of human-equine bonds in non-clinical, adult, horse-owning populations. Certain items on the LAPS and the PAQ, however, did not seem to translate to horses the same way as companion animals. On the LAPS, items 15, 18, and 19, could be considered loading at the .30 level. The explanation for their lower factor loadings may lie in the word choice of the items which may seem more extreme than other items on the LAPS. For instance, item 15, "*Quite often* I confide in my horse" and item 19, "I love my horse because he/she is *more loyal* than *most* of the people in my life (emphasis added)." Item 32, "I am not very attached to my horse," may have been problematic because it was the only negatively worded item and it specifically addressed attachment rather than emotional aspects of bond. Select items on the PAQ also did not translate in ways expected.

Significant differences were found between males and females in strength of emotional bond and avoidant attachment insecurity. These findings are consistent with previous findings which demonstrate differences bonding with pets between males and females (Fine, 2010). Future research should explore whether these findings have any implications for equine-facilitated psychotherapy outcomes.

MAIN STUDY

Findings from the pilot study can be interpreted to infer two findings: 1) normal adults can form bonds with horses and, 2) differences in bonds exist between males and females. This research sought to determine if similar results could be found with clinical populations. The main study used scales evaluated in the pilot study, including the horse bonding scale and the PAQ, to further explore three research questions: a) can clients form a bond with therapy horses, b) is the strength of bonds correlated with the severity of symptoms of the clients over the course of EFP, and c) do different characteristics (e.g. mental health diagnosis, sex, age, etc.) of the clients impact the strength of bonds formed with the horses during EFP?

Method

Participants

Following a full review by the Fort Hays State University Institutional Review Board, participants were recruited from Youthville Ranch. Youthville Ranch is a residential treatment center in rural, Southwest Kansas that serves youth and adolescents clients, aged 6-18 years old. Clients were referred to the ranch with various statuses including child in need of care (CINC), juvenile offender, or private admission. The only criterion for selection for this research was that participants were current clients of Youthville Ranch who were engaged in equine therapy. Recruitment letters (See Appendix E) were given to and consent forms (See Appendix F) were signed by parents, guardians, or case workers upon admission to the facility. Appropriate assent from participants (See Appendix G) was obtained prior to participation in the study.

As the group being studied comes from a limited population, convenience sampling techniques was employed. If consent was obtained, they were included in the study. Since Youthville Ranch serves only clients 6-18, age was a factor in recruitment and selection. Gender, race, ethnicity, and sexual orientation were not criteria for selection.

Eleven male and four female participants were recruited for this study. Ages at intake ranged from 10 to 17 years (M=13.81, SD=2.36). Ethnicities represented in this study include Caucasian (n=9), African-American (n=2), and Hispanic (n=2); two participants were described as biracial. Reported status at intake included: juvenile offender (n=6), CINC (n=6), and private admission (n=3). All participants had multiple mental health diagnoses listed upon intake and few had a primary diagnosis indicated. Therefore, extensive overlap exists between groups based on diagnosis and frequencies are inflated. Diagnoses represented include behavioral disorders (n=13), attention deficit hyperactivity disorder (ADHD) (n=10), mood disorders (n=10), pervasive developmental disorder (n=2), reactive attachment disorder (n=2), and post-traumatic stress disorder (n=1).

Measures

Data were collected using a combination of self-report bonding survey scales, EFP progress notes, clinical behavioral scales, and archival means.

Bonding scales. An adapted form of the Horse Bonding Scale (HBS) was combined with the adapted PAQ to create a 60-item self-report bonding surveys. In the pilot study, both measures were found to have high internal consistency when measuring

human-equine bonds. Item wording was changed from "horse" to "therapy horse" for the thesis study. For a full description see pilot study results and Appendix H.

Progress notes. Engagement in EFP sessions may impact the bonding on the part of clients. The equine specialist was asked to give a rating, from one to five, for each session for each of the following questions: 1) "How much did the client *interact* with the horse?" 2) "How *engaged* was the client with the horse?" and 3) "How much did the child *connect* with the horse?" (See Appendix I for additional information reported on EFP progress notes). These ratings were then used in data analyses to represent "bonding" aspects of Interaction, Engagement, and Connection. Additionally, the equine specialist wrote a descriptive account of each session including the clients' responses. These responses were then rated for positivity/negativity on a scale from one to five by researchers. See Appendix J for rating scale instructions and examples. Raters had an interrater reliability of .95.

Behavior scales. Youthville administers the Ohio Mental Health Consumer Outcomes System, Ohio Youth Problem, Functioning, and Satisfaction Scales during client intakes. The Ohio Scales were developed as a way to measure effectiveness of mental health services over time (Ogles, Melendez, Davis, & Lunnen, 2000). It is not meant to be used as a diagnostic tool but rather a way of measuring symptom reduction. The Ohio Scales have forms for multiple raters (youth client (See Appendix K), parent, mental health care worker (See Appendix L)) to gain a well-rounded picture of the clients' symptoms. The Short Forms were developed based on feedback on the original Ohio Scales; the measure was shortened to 48 items and the item language on the parent

and worker form was changed to match the youth form. The Ohio Scales measure four content areas: Problem Severity, Functioning, Satisfaction, and Hopefulness.

The Problem Severity scale has 20 items on the Short Form. It measures problem behaviors using a six point Likert scale for severity or frequency, 1 ("not at all") to 6 ("all of the time"). An example of a problem behavior from the Problem Severity section is "arguing with others." See Appendix K or L to read all items. The Functioning scale consists of 20 items rating youth clients current functioning in daily activities such as "getting along with friends." A five point Likert scale, 0= extreme troubles to 4= doing very well, is used. The Satisfaction scale and the Hopefulness scales consist of four items each, using six-point scales. Scales are summed to give total scores. Higher scores indicate greater amounts of satisfaction, hopefulness, and functioning. Higher scores on problem severity indicate more severe/frequent problematic behaviors.

The Short Forms have been tested to see if good psychometric properties of the original were upheld. The Short Forms had Cronbach alphas ranging from .86 to .93 and was highly correlated with the original scales (r = .80 for "Problem Severity" and r = .91 for "Functioning") (Ogles, Melendez, Davis, & Lunnen, 2000).

Archival data. Client demographics including, age, gender, ethnicity, mental health diagnosis, custody status, and risk factors were collected from participant files. All participants were given a research identification number; all data was de-identified before leaving Youthville campus to protect participant confidentiality.

Procedures

Participants engaged in Youthville's standard practice of equine-facilitated psychotherapy. Participants completed the HBS at some point during their treatment; some completed the scale at the beginning of EFP, some completed towards the mid-point and others completed the HBS nearing termination from Youthville. The number of EFP sessions prior to completing the HBS was also recorded. The equine specialist completed progress notes for each EFP session. Ohio scales from intake were also collected for participants.

Results

Clients bond with therapy horses

It was hypothesized that clients can form bonds toward therapy horses and existing animal bonding measures could measure these bonds. To determine if existing companion animal bonding scales can measure bonds formed within the context of psychotherapy, reliability and validity analyses were performed. The internal consistency of bonding/attachment measures was tested by calculating a Cronbach alpha coefficient for each measure. Four scales (CCAS, LAPS, HBS, PAQ avoidance,) were found to have high internal consistency with alphas of .95, .97, .97, and .85 respectively (See Table 5 for alphas from Youthville study, pilot study and companion animal research). One scale (PAQ anxiety with a coefficient of .54) did not have sufficient internal consistency to be used in additional analyses.

To assess the convergent validity of these scales when measuring client-therapy horse bonds, bivariate correlations were run for each combination of scales (See Table 6).

A significant linear relationship was found between the CCAS and the LAPS total scores, r (12) = .77, p < .005. The two measures demonstrate a significant positive relationship whether measuring adult-pet bonds, adult owner-horse bonds, or youth client-therapy horse bonds. A significant negative relationship was again found between the PAQ avoidance scale and the CCAS, r (12) = -.8.3, p < .005, the LAPS, r (12) = -.86, p < .001, and the HBS, r (12) = -.89, p < .001. Participants reporting stronger bonds, as demonstrated by higher scores on bonding measures, report lower levels of avoidant attachment insecurity. These findings, along with results from the pilot study, indicate attachment insecurity in the form of avoidance may negatively impact the strength of emotional bonds formed with therapy horses.

It was also hypothesized that bonds (HBS scores) may be impacted by how much the participants interacted, engaged, and connected with their horses, as rated by the equine specialist. However, it was found that the equine specialist's ratings of participants' engagement and connection were highly correlated with the self-reported strength of the client-horse bond. A correlation between bond and mean rating of connection was found to be significant, r (10) = .80, p < .005, as was the correlation between bond and mean rating of engagement, r (10) = .79, p < .005. A significant correlation was not found between bond and mean rating of interaction, r (10) = .56, p > .05. These findings provide evidence of the external validity for the bonding measures, that is, that a bond does in fact exist, it can be observed as distinct from interaction, and it can be measured with self-report scales.

It was also found that youth EFP clients report stronger bonds to their therapy horses than adult owners do to their horses. One-sample *t* tests were run using pilot study means to compare the two samples. Youthville participants (M=120.50, SD=19.23) report significantly stronger bonds than pilot study participants (M= 105.90, SD= 20.64), $t\,(11) = 2.63$, $p < .05$.

Bond strength and severity of symptoms

It was hypothesized that a negative correlation would be found between strength of bond and severity of symptoms over time. That is, it was expected that as the strength of bonds increased, mental health symptoms would decrease. The data available at the conclusion of this study did not allow for examination of symptom reduction and bond strengthening over time.

However, it was possible to explore the relationship between initial bond strength, contact with horse, and increases in GAF scores. It was hypothesized a positive linear relationship would be found between both bond strength and number of EFP sessions and change in GAF scores. A bivariate correlation was run for bond and change in GAF scores. No significant linear relationship was found, $r\,(8) = -.06$, $p > .05$, indicating stronger bonds were not correlated with greater symptom reduction. A bivariate correlation was also run for the total number of EFP sessions and change in GAF scores. A significant linear relationship was not found, $r\,(11) = -.07$, $p > .05$, indicating increased therapeutic contact with the horse did not lead to greater symptom reduction.

Client characteristics impact on bonds in EFP

Score from the HBS were used to determine if difference in reported bonds were related to participants' demographics. The hypothesis that males (*M*=123.11, *SD*=16.28, *N*=9) and females (*M*=112.67, *SD*=29.16, *N*=3) would differ on strength of emotional bonds with their horses was tested using an independent *t* test. The null hypothesis was retained indicating males and females do not differ significantly on strength of emotional bonds formed with their therapy horse. Although males reported stronger emotional bonds to their horses, the difference was not significant $t\ (10) = .80$, $p > .05$.

It was hypothesized that strength of bonds may differ across groups made based on diagnosis. Small sample size and participants with multiple diagnoses did not allow for examination across all diagnoses. To create independent groups, participants were sorted based on whether they had a specific diagnosis or not (i.e. Mood disorder diagnosis versus no mood-disorder diagnosis). The hypothesis that differences in bond strength would be found between individuals with mood disorders (*M*=117.56, *SD*=21.66, *N*=9) and those without mood disorders (*M*=129.33, *SD*=1.55, *N*=3) was tested using an independent *t* test. Significant differences were not found between groups, $t\ (8.135) = 1.63$, $p > .05$, equal variances not assumed. Significant differences were also lacking between groups made based behavioral disorders, $t\ (10) = -.88$, $p > .05$, and ADHD, $t\ (10) = -1.20$, $p > .05$, compared to those without behavioral or attention disorders (See Table 7).

It was hypothesized that differences in bond strength would be found across ethnicities. Due to small sample size, participants were grouped as Caucasian

(*M*=130.14, *SD*=3.53, *N*=7) and non-Caucasian (*M*=107.00, *SD*=24.65, *N*=5). An independent *t* test revealed no significant differences were found between the two groups, *t* (4.12) = 2.08, *p* > .05, equal variance not assumed. Ethnicity does not appear to play a part in self-reported strength of emotional bond to therapy horse. See Table 7 for bond strength descriptive statistics by group.

It was hypothesized that participants' age would be correlated with their reported levels of emotional bonds. A bivariate correlation was run for participants' age and participants' HBS total score. A moderate, negative linear relationship approaching significance was found, *r* (10) = -.55, *p* = .06, indicating that as age increases the bond may decrease.

It was hypothesized severity of symptoms may impact a participant's ability to bond with a therapy horse. It was expected that higher scores on the "Functioning" content area of the Ohio scales would be correlated with higher scores on the HBS. This hypothesis was tested by running a bivariate correlation between workers' ratings on "Functioning" and the HBS. A significant relationship was not found, *r* (9) = .32, *p* > .05. It was also expected that higher scores on the "Problem Severity" content area of the Ohio Scales would be correlated with lower scores on the HBS. This hypothesis was tested by running a bivariate correlation between workers' ratings of problem severity and the HBS. No significant relationship was found, *r* (9) = -.18, *p* > .05.

Discussion

Clients bond with therapy horses

Results from the main study indicate mental health clients can form emotional bonds with horses involved in the administration of equine-facilitated psychotherapy. Furthermore, mean bonding scores are as strong as or stronger than those found in horse owners and pet owners. These self-reported bonding scores are also corroborated by the equine specialist's estimation of observable bonds clients formed with their therapy horses.

Previous reports (Berget & Braastad, 2008; EAAT Definitions, 2011; Meinersman et al., 2008) have proposed that the relationship or bond between clients and therapy horses are central to EFP but evidence of such a bond existing had yet to be established until this research. These findings provide meaningful, empirical evidence to the research body on EFP by demonstrating the existence of these bonds. Therapeutic alliances formed by clients have long been considered to be one of the most important factors in the effectiveness of therapy (Messner & Gurman, 2011). The results of this study provide compelling evidence that alliances can be formed between mental health clients and therapy horses. EFP may be an effective form of psychotherapy because there are increased opportunities, through the addition of the therapy horse and the equine specialist, for the client to establish helpful alliances.

Additionally, valid, consistent means of recording emotional bonds between clients and therapy horses had not been established prior to this research. Previous, existing bonding scales had focused primarily on relationships between humans and

small, domesticate pets (Johnson, Garrity, & Stallones, 1992; Zasloff, 1996; Zilch-Mano, Mikulincer, & Shaver, 2011). This study establishes an empirically-validated scale (the HBS) to assess bonds humans form with horses. Future research should further investigate the validity of the HBS for outpatient youth clients and adult mental health clients, both inpatient and outpatient.

This evidence that a bond can be formed between client and therapy horse will be useful to future research exploring the role of bonding in EFP and the impact of bonding on EFP outcomes. Additionally, this study provides evidence that the HBS can be used in a clinical population to measure strength of emotional bonds.

A complete resolution to this research question was complicated by limitations encountered in this study, specifically a small sample size (N=14) and homogeneity of participants' mental health issues. The participants in this sample represent the extreme of symptom severity. Additionally, all participants included in this sample were from an in-patient population. All residents at this facility have contact with the horses in multiple ways: individual therapy, group therapy, PE classes, involvement in animal care, etc. It is unknown if other types of psychotherapy (i.e. outpatient) clients can form bonds with therapy horses. Future studies should seek to replicate these results with a larger sample representing more mental health diversity (e.g. symptoms ranging from mild to severe).

Bond strength and severity of symptoms

Previous research (Schulz, Remick-Barlow, & Robbins, 2007) found that EFP participants' GAF scores increased after involvement in EFP. Given that bonds formed

during therapy have been considered to be one of the most important factors for the effectiveness of EFP (Bradberry et al., EAAT Definitions, 2011; Messner & Gurman, 2011) it was hypothesized bond strength and symptom expression (i.e. GAF scores) would be related over time. It was thought that bonds formed with therapy horses may be contributing directly to changes in clients. It was hypothesized emotional bonds to therapy horses could increase over time and these strengthening bonds would lead to decreased symptomology.

It was found that bond strength was not related to change in GAF scores. These results could indicate that although bonds exist in EFP and may be an important component of EFP, stronger bonds are not related to greater decreases in symptoms. This may indicate that bonds are not impacting symptom severity directly but that bonds may contribute to EFP success through other means (e.g. greater interest in therapy, increased attendance, greater engagement in change process, greater feeling of emotional support, etc.). Future research should explore the relationship between bond strength and these additional factors in therapy success to explore any mediating roles bonds may play in EFP.

Analyses conducted for this study indicate symptom expression and bond strength are also not related initially. That is, severity of symptoms at intake does not appear to be related to bond strength. This indicates clients should not be excluded from participating in EFP based on their GAF scores alone. Clients with low initial GAF scores were still able to form bonds with therapy horses and participate in EFP.

Numerous limitations were encountered when attempting to examine this research question. Especially problematic was the lack of multiple bonding measures for each participant for different points in time. This made exploration of changes over time difficult. An additional limitation was the lack of reliable post-intervention symptom measures to assess changes in symptom expression; that is, it was uncertain how carefully these scores were recorded or updated during the clients' treatment. GAF scores did not change dramatically over the course of treatment and may have contributed to the lack of findings or correlations between bond strength and symptom reduction. Having a more objective pre- and post-intervention measure (i.e. the Ohio scales) would better address this research question. Future research should continue to explore the relationship between changes in bond strength and changes in functioning or symptom expression over time considering these limitations.

Client characteristics impact on bonds in EFP

Despite prior reports (Fine, 2010; Tyler, 1994) of differences in bond strength based on demographics (and pilot study results), results from the main study indicate client demographics have little impact on emotional bonds formed with therapy horses during the course of equine-facilitated psychotherapy. Clients' emotional bonds were not related to gender, diagnosis, age, ethnicity, or symptom severity. These results indicate clients with a variety of backgrounds and personal characteristics were able to form bonds with therapy horses. It could be assumed client demographics do not play a large role in the development of emotional bonds with therapy horses. With the current knowledge base, individuals should not be excluded from participation in EFP based on

the characteristics explored in this research. It is also uncertain whether clients' successes in EFP could be predicted based on existing characteristics.

Small sample size, unequal group size, and diagnosis overlap impacted the analysis of this research question. The limited sample size and participants with multiple diagnoses ruled out further analyses comparing groups based on diagnosis. Group size should also be considered a limiting factor when looking at comparisons between genders. Bonding surveys were only available for three females; these results offer little in terms of ecological validity.

Future research should further investigate this research question with a larger sample, more dichotomous groups based on diagnosis, and relatively equal groups for gender.

CONCLUSION

Strength of emotional bond to therapy horse has not been demonstrated to have a significant impact on symptoms of mental illness during EFP. Stronger bonds are not associated with greater symptom reduction. Thus, it is concluded that bonds are not the primary mechanism of change during EFP. Future research should investigate the impact of bond strength on other treatment outcomes including, attendance during therapy, engagement in therapy sessions, satisfaction with services, clients' relationships with therapists, and nature of termination (early, planned, etc.). It is likely emotional bonds may have a mediating relationship other factors of therapy success.

Despite differences on bond strength in non-clinical samples, clients' demographics' impacting bonds formed within the context of EFP has not been

demonstrated by this research. At this time, evidence does not exist for EFP client screening based on demographics. It cannot be predicted which clients may form the strongest bond with therapy horses or which clients may benefit from EFP. Future research should continue to investigate the impact of client demographics on bond strength, as well as, additional EFP outcomes.

This research found clients form bonds with therapy horses during the course of EFP. These bonds are comparable to the emotional bonds owners form to pets. These bonds can be observed by clinicians and other professional and can be reported mental health clients via empirical means. Additionally, these bonds can be measured using the HBS. This measure has been validated for adult horse owners, as well as, youth EFP clients. Findings from current research findings can be used to direct future research investigating the role of emotional bonds in EFP.

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Table 1
Internal consistency of bonding scales (Pilot)

	Cronbach alpha	
Scale	Equine	Companion
CCAS	.90	.85
LAPS	.91	.93
PAQ avoidance	.93	.87
PAQ anxiety	.83	.87
HBS*	.95	-

* New Horse Bonding Scale combining select items from the CCAS and the LAPS

Table 2
Convergent validity of bonding scales (Pilot)

		r		
		LAPS	PAQ avoidance	PAQ anxiety
CCAS	Equine	.87	-.51	-.26*
	Companion Animal	-.68	-.48	.18
LAPS	Equine	-	-.40	.06*
	Companion Animal	-	-.57	.12*
PAQ av.	Equine	-.40	-	.68
	Companion Animal	-.57	-	.10*
PAQ anx.	Equine	.06*	.68	-
	Companion Animal	.12*	.10*	-

* = not significant at the .05 level

Table 3
Factor Analysis of the PAQ avoidance scale

	Factor Loadings	
	1	2
35. Being close to my pet is pleasant for me (reverse-scored)	**.70**	-.09
37. I prefer not to be too close to my pet	**.87**	.12
39. I prefer to keep some distance from my pet	**.43**	.38
41. Often my pet is a nuisance to me	**.53**	.47
43. I feel distant from my pet	**.74**	.44
45. I'm not very attached to my pet	**.87**	.10
47. If necessary, I would be able to give away my pet without any difficulties	**.84**	.01
*49. I have no problem parting with my pet for a long duration	.29	.44
51. I get uncomfortable when my pet wants to be close to me	**.69**	.54
53. I get nervous when my pet gets too close to me	**.82**	.04
*55. I want to get close to my pet, but I keep pulling away	.58	.69
57. I try to avoid getting too close to my pet	**.87**	.30
59. When I'm away from my pet for a long period of time, I hardly think about it	**.68**	.23

Note. Factor 1=avoidance, Factor 2=anxiety, on-factor loadings are in bold font.
*items loading incorrectly or failing to load

Table 4
Factor Analysis of the PAQ anxiety scale

	Factor Loadings	
	1	2
*36. I'm often worried about what I'll do if something bad happens to my pet	-.17	-.33
*38. Sometimes I feel that I force my pet to show more commitment and desire to be close to me	.42	.11
40. If I can't get my pet to show interest in me, I get upset or angry	.62	**.63**
42. Signs of affection from my pet bolster my self-worth	-.03	**.58**
*44. I often feel that my pet doesn't allow me to get as close as I would like	.69	.60
46. I get angry when my pet doesn't want to be close to me as much as I would like it to	.59	**.60**
48. I get frustrated when my pet is not around as much as I would like it to be	-.09	**.64**
50. I need shows of affection from my pet to feel there is someone who accepts me as I am	.15	**.54**
52. I feel frustrated if my pet doesn't seem to be available for me when I need it	.10	**.70**
*54. Without acts of affection from my pet I feel worthless	.56	.46
56. I am worried about being left alone without my pet	.27	**.61**
58. I need expressions of love from my pet to feel valuable	.14	**.65**
60. I need a lot of reassurance from my pet that it loves me	.06	**.74**

Note. Factor 1=avoidance, Factor 2=anxiety, on-factor loadings are in bold font.
*items loading incorrectly or failing to load

Table 5
Internal consistency of bonding scales (Main study)

	Cronbach alpha		
Scale	Youthville	Pilot	Companion
CCAS	.95	.90	.85
LAPS	.97	.91	.93
HBS	.97	.95	-
PAQ avoidance	.85	.93	.87
PAQ anxiety	.54*	.83	.87

* Scale lacks internal consistency; excluded from subsequent analysis

Table 6

Convergent validity of bonding scales

		r		
		LAPS	PAQ avoidance	HBS
CCAS	Pilot	.87	-.51	.95
	Youthville	.78	-.83	.90
LAPS	Pilot	-	-.40	.98
	Youthville	-	-.86	.98
PAQ av.	Pilot	-	-	-.44
	Youthville	-	-	-.89

Table 7
Horse Bonding Scale (HBS) by group

Group	*N*	*M*	*SD*
Pilot	30	105.90	20.64
Youthville	12	120.50	19.23
Males	9	123.11	16.28
Females	3	112.67	29.16
Mood disorder (MD)	9	117.56	21.66
No MD	3	129.33	1.55
Behavior disorder (BD)	2	109.50	33.23
No BD	10	122.70	17.23
Attention disorder (ADHD)	4	111.25	23.98
No ADHD	8	125.13	16.16
Caucasian	7	130.14	3.53
Non-Caucasian	5	107.00	24.65

Appendix A
Acronyms for frequently used phrases

AAA	Animal-assisted activity
AAI	Animal-assisted intervention
AAP	Animal-assisted psychotherapy
AAT	Animal-assisted therapy
ADHD	Attention-deficit/hyperactivity disorder
CCAS	Comfort from Companion Animal Scale
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision
EAGALA	Equine Assisted Growth & Learning Association
EAP	Equine-assisted psychotherapy
EFMHA	Equine Facilitated Mental Health Association
EFP	Equine-facilitated psychotherapy
GAF	Global Assessment of Functioning
HBS	Horse Bonding Scale
LAPS	Lexington Attachment to Pets Scale
PAQ	Pet Attitude Questionnaire
PATH	Professional Association of Therapeutic Horsemanship

Appendix B

Items from survey used in pilot study

Modified items from the CCAS

1	My horse provides me with companionship
2	Having a horse gives me something to care for
3	My horse provides me with pleasurable activity
4	My horse is a source of constancy in my life
5	My horse makes me feel needed
6	My horse makes me feel safe
7	My horse makes me play and laugh
8	Having a horse gives me something to love
9	I get more exercise because of my horse
10	I get comfort from touching my horse
11	I enjoy watching my horse
12	My horse makes me feel loved
13	My horse makes me feel trusted

Appendix C
Items from survey used in Pilot Study

Items on the LAPS selected and modified for PILOT Study

14	My horse means more to me than *any* of my friends
15	Quite often I confide in my horse
16	I believe that horses should have the same rights and privileges as family members
17	I believe my horse is my best friend
18	Quite often, my feelings toward people are affected by the way they react to my horse
19	I love my horse because he/she is more loyal to me than most of the people in my life
20	I enjoy showing other people pictures of my horse
21	My horse knows when I'm feeling bad
22	I often talk to other people about my horse
23	My horse understands me
24	I believe that loving my horse helps me stay healthy
25	Horses deserve as much respect as humans do
26	My horse and I have a very close relationship
27	I would do almost anything to take care of my horse
28	I play with my horse quite often
29	I consider my horse to be a great companion
30	My horse makes me feel happy
31	I feel that my horse is a part of my family
32	I am not very attached to my horse
33	Owning a horse adds to my happiness
34	I consider my horse to be a friend

Appendix D
Items from survey used in pilot study

Modified items of the PAQ

35*	Being close to my horse is pleasant for me (reverse-scored)
36	I'm often worried about what I'll do if something bad happens to my horse
37*	I prefer not to be too close to my horse
38	Sometimes I feel that I force my horse to show more commitment and desire to be close to me
39*	I prefer to keep some distance from my horse
40	If I can't get my horse to show interest in me, I get upset or angry
41*	Often my horse is a nuisance to me
42	Signs of affection from my horse bolster my self-worth
43*	I feel distant from my horse
44	I often feel that my horse doesn't allow me to get as close as I would like
45*	I'm not very attached to my horse
46	I get angry when my horse doesn't want to be close to me as much as I would like it to
47*	If necessary, I would be able to give away my horse without any difficulties
48	I get frustrated when my horse is not around as much as I would like it to be
49*	I have no problem parting with my horse for a long duration
50	I need shows of affection from my horse to feel there is someone who accepts me as I am
51*	I get uncomfortable when my horse wants to be close to me
52	I feel frustrated if my horse doesn't seem to be available for me when I need it
53*	I get nervous when my horse gets too close to me
54	Without acts of affection from my horse I feel worthless
55*	I want to get close to my horse, but I keep pulling away
56	I am worried about being left alone without my horse
57*	I try to avoid getting too close to my horse
58	I need expressions of love from my horse to feel valuable
59*	When I'm away from my horse for a long period of time, I hardly think about it
60	I need a lot of reassurance from my horse that it loves me

*denotes items on the avoidance scale; all other items are on the anxiety scale

Appendix E
Recruitment Letter

Dear Parent,

I am graduate student in clinical psychology at Fort Hays State University. Directors at Youthville Ranch have contacted us about conducting research on the horse therapy program your child will be participating in.

I would like to ask your permission and consent for your child to participate in this research study, *Measuring human-equine bonds in equine-facilitated psychotherapy.*

Please read the enclosed consent form. It describes what is involved in the research study. **Please sign and return one form if you agree to your child participating in this study**. Keep the other form for your records. If you have questions about the study, please contact me by phone (785-443-0041) or email (cksloan@scatcat.fhsu.edu) so that I can answer any questions you may have prior to signing the consent form.

Thank you for your time,

Janett Naylor
Assistant Professor of Psychology
Psychology Department
Fort Hays State University

Carla Sloan Brown
Graduate Student
Clinical Psychology
Fort Hays State University

Appendix F
Parent Consent Form

PARENT PERMISSION FOR CHILD TO PARTICIPATE IN RESEARCH

Department of Psychology, Fort Hays State University

Study title: Measuring human-equine bonds in equine-facilitated psychotherapy

Name of Researcher*:* Carla Sloan Brown
Contact Information: email: cksloan@scatcat.fhsu.edu
Phone: 785-443-0041
Name of Faculty Supervisor & Contact Information: Janett Naylor, jmnaylor@fhsu.edu

You are being asked to allow your child to participate in a research study. Before you give your permission, it is important that you read the following information and ask as many questions as necessary to be sure you understand what your child will be asked to do. It is your choice whether or not your child will participate.

If you decide to permit your child to participate in this research study, you will be asked to sign this consent form after you have had all your questions answered and understand what will happen to you. The length of time of your child's participation in this study is six weeks. Approximately 30-50 participants will be in this study.

Your decision of whether or not to allow your child to participate will have no effect on benefits or services to which he or she is otherwise entitled. Please ask questions if there is anything you do not understand.

What is the purpose of this study?
The purpose of the study is to measure and define the relationship between child and horse during an equine therapy session.

What does this study involve?
This study will involve your child be asked to complete surveys after their horse therapy sessions.

Are there any benefits from participating in this study?
There will be no benefits to you should you decide to allow your child participate in this study. Your child may receive more horse contact time as a result of participating in this study. Your child's participation will help us learn more about the client-horse bond and its impact on therapeutic interventions. This information may be helpful in future studies of equine therapy and their effectiveness.

Will you be paid or receive anything to participate in this study?
You will not receive any compensation for allowing your child to participate in this study. Your child may receive incentives such as pizza parties and Youthville Ranch may receive art supplies from the researchers of this study.

What about the costs of this study?
There are no costs for participating in this study other than the time you will spend completing this consent form.

What are the risks involved with being enrolled in this study?
Risks involved with participation in this study do not exceed the risk involved with everyday activities of horse therapy that your child is already participating in.

How will your child's privacy be protected?
Potentially identifiable information about your child will consist of: self-report measures of temperament and anxiety, behavioral observations, recordings and interview notes. Efforts will be made to protect the identities of the participants and the confidentiality of the research data used in this study. Data is collected only for research purposes. Your child's data will be identified by ID number, not name, and will be stored separately in a locked file cabinet. All personal identifying information will be kept in locked files and these files will be deleted after three years. Access to all data will be limited to the research team which may include undergraduate research assistants, other graduate students, and faculty advisors.

The information collected for this study will be used only for the purposes of conducting this study. What we find from this study may be presented at meetings or published in papers but your child's name will not ever be used in these presentations or papers.

We will not tell anyone the answers your child gives us on surveys or during therapy observations. But, if your child tells us that someone is hurting her or him, or that s/he might hurt him/herself or someone else, the law says we have to let people in authority know so they can protect your child.

Other important items you should know:
• **Withdrawal from the study:** If you decide to allow your child to participate, you are free to withdraw your consent and to discontinue his/her participation at any time and without any penalty. Your decision to stop your child's participation will have no effect on the quality of care your child receives.
• **Funding:** At this time, there is no outside funding for this research study.

• Research data may be shared with officials of Fort Hays State University and others involved in the oversight of this study as permitted by law. There is no guarantee that research data cannot be obtained by a court order or other legal process.

Compensation for Injury

"I have been informed and I understand that Fort Hays State University does not provide medical treatment or other forms of reimbursement to persons injured as a result of or in connection with participation in research activities conducted by Fort Hays State University or its faculty. If I believe that I have been injured as a result of participating in the research covered by this consent form, I should contact the Office of Scholarship and Sponsored Projects, Fort Hays State University at 785-628-4349."

_____

Signature

Whom should you call with questions about this study?

Questions about this study or concerns about a research related injury may be directed to the researcher in charge of this study: Phone-785-443-0041 Email-cksloan@scatcat.fhsu.edu.

If you have questions, concerns, or suggestions about human research at FHSU, you may call the Office of Scholarship and Sponsored Projects at FHSU (785) 628-4349 during normal business hours, 8:00am-4:30pm.

CONSENT

I have read the above information about, "Measuring human-equine bonds in equine-facilitated psychotherapy" and have been given an opportunity to ask questions. By signing this I agree to allow my child to participate in this study and I have been given a copy of this signed consent document for my own records. I understand that I can change my mind and withdraw my consent at any time. By signing this consent form I understand that I am not giving up any legal rights.

_____

Parent or Legal Guardian Signature and Date

_____

Name of Child

Appendix G
Participant Assent Form
Assent to participate in Research

Department of Psychology, Fort Hays State University

"Measuring human-equine bonds in equine-facilitated psychotherapy"

I am a student in college, and I am working on a project that will help me graduate. I am interested in the relationship you and others have with the horses at the ranch.

We will be asking you to fill out surveys after your horse therapy sessions. These surveys will ask about your feelings toward your therapy horse as well as your recent behaviors. We think you will enjoy being in this project.

Your name won't be on anything and anything you say will be kept secret.

Your _____has said it is O.K., if you are part of the project, but you do not have to take part if you do not want to. It is up to you. No one will be upset with you or give you a bad grade if you do not want to participate. And you can always change your mind and stop at any time.

We want you to feel comfortable; if you have any questions, please ask me or any member of the project team at any time.

Please mark one of the choices below to tell us what you want to do:

_____No, I do not want to be in this project

_____Yes, I do want to be in this project

_____

Write your name here Date

_____

Researcher's Signature Date

Appendix H

EFP Bonding Survey

Horse Bonding Scale (HBS)

1	My therapy horse provides me with companionship
2	Having a therapy horse gives me something to care for
3	My therapy horse provides me with pleasurable activity
4	My therapy horse is a source of constancy in my life
5	My therapy horse makes me feel needed
6	My therapy horse makes me feel safe
7	My therapy horse makes me play and laugh
8	Having a therapy horse gives me something to love
9	I get more exercise because of my therapy horse
10	I get comfort from touching my therapy horse
11	I enjoy watching my therapy horse
12	My therapy horse makes me feel loved
13	My therapy horse makes me feel trusted
14	My therapy horse means more to me than any of my friends
15	Quite often I confide in my therapy horse
16	I believe that therapy horses should have the same rights and privileges as family members
17	I believe my therapy horse is my best friend
18	Quite often, my feelings toward people are affected by the way they react to my therapy horse
19	I love my therapy horse because he/she is more loyal to me than most of the in my life
20	I enjoy showing other people pictures of my therapy horse
21	My therapy horse knows when I'm feeling bad
22	I often talk to other people about my therapy horse
23	My therapy horse understands me
24	I believe that loving my therapy horse helps me stay healthy
25	Therapy horses deserve as much respect as humans do
26	My therapy horse and I have a very close relationship
27	I would do almost anything to take care of my therapy horse
28	I play with my therapy horse quite often
29	I consider my therapy horse to be a great companion
30	My therapy horse makes me feel happy
31	I feel that my therapy horse is a part of my family
32	I am not very attached to my therapy horse
33	Owning a therapy horse adds to my happiness
34	I consider my therapy horse to be a friend
35	Being close to my therapy horse is pleasant for me (reverse-scored)

36	I'm often worried about what I'll do if something bad happens to my therapy horse
37	I prefer not to be too close to my therapy horse
38	Sometimes I feel that I force my therapy horse to show more commitment and desire to be close to me
39	I prefer to keep some distance from my therapy horse
40	If I can't get my therapy horse to show interest in me, I get upset or angry
41	Often my therapy horse is a nuisance to me
42	Signs of affection from my therapy horse bolster my self-worth
43	I feel distant from my therapy horse
44	I often feel that my therapy horse doesn't allow me to get as close as I would like
45	I'm not very attached to my therapy horse
46	I get angry when my therapy horse doesn't want to be close to me as much as I would like it to
47	If necessary, I would be able to give away my therapy horse without any difficulties
48	I get frustrated when my therapy horse is not around as much as I would like it to be
49	I have no problem parting with my therapy horse for a long duration
50	I need shows of affection from my therapy horse to feel there is someone who accepts me as I am
51	I get uncomfortable when my therapy horse wants to be close to me
52	I feel frustrated if my therapy horse doesn't seem to be available for me when I need it
53	I get nervous when my therapy horse gets too close to me
54	Without acts of affection from my therapy horse I feel worthless
55	I want to get close to my therapy horse, but I keep pulling away
56	I am worried about being left alone without my therapy horse
57	I try to avoid getting too close to my therapy horse
58	I need expressions of love from my therapy horse to feel valuable
59	When I'm away from my therapy horse for a long period of time, I hardly think about it
60	I need a lot of reassurance from my therapy horse that it loves me

Appendix I

Engagement questions

To be completed after each EFP session on the progress note

Client #_____ Session #_____

Session Start Time: _____ Session End Time: _____

Age: _____ Sex: M F

Location of Session:

Indoor Arena Outdoor Arena Round Pen Pasture/Trail

Engagement in Therapy Session:

1. How much did the client interact with the horse? 1 2 3 4 5

2. How engaged was the client with the horse? 1 2 3 4 5

3. How much did the child connect with the horse? 1 2 3 4 5

Activities completed or attempted:

Completed=client engaged in the activity regardless of outcome

Ex. Client tried to get the horse to cross the bridge but the horse refused

Attempted=client was encouraged to do the activity but refused

Ex. Client was asked and encouraged to get the horse to cross the bridge but the client refused

Appendix J

Coding instructions for session response

1= all negative

Example: Client was frustrated, saying the horses would not listen to her. Her lack of focus and mixed messages made it difficult for the horses to understand what was said.

Example: As soon as Client mounted her horse, he tried to get away from her. He went to the fence and refused to go. After getting help to get her horse to go, he again turned and went to the gate refusing to go. Client got angry and dismounted. She would not listen to any suggestions and got more and more upset. She refused to take care of her horse when we returned to the barn and began to curse at staff members. It was decided among cottage and farm staff that it might be safer for her and the horses to skip horse group until the New Year to give her a chance to calm down and get regulated again.

2= more negative than positive

Example: Client was attentive to instructions and was able to work with a client to come up with a trick and interact with the dog. However, towards the end of the session she became upset when a different client didn't want to share the attentions of a dog and physically assaulted this client by pinching her hard on the leg.

3= negative and positive relatively equal

Example: Client horse did not want to participate today. It seemed that she was sore in the area where the saddle fits. Client was calm and patient with her, although he did nothing to help the situation get better.

Example: The group did a team building activity where they tried to put a horse into a marked area and have him stay for five seconds. Client was very quiet when the group planned their strategy. He did do what the plan directed.

4= more positive than negative

Example: The group did a team building activity where two people drove a horse through a pattern. Each client had one rein. The cottage staff stated that Client was having trouble with a peer. These two were paired to let them have an opportunity to work together. After some complaint about working with peer, they did quite well.

Example: Client did very well today. He got along with his peers and was appropriate in his behavior. He was interested in the dogs and interacted with them. He does appear awkward with the dogs as if he is unsure how to interact with them.

Example: Client had improved her behaviors and able to leave the cottage and come to the dog building. She told me she felt "happier" than she had previously. Client likes to interact and play with the dogs but still has trouble staying on any single task long enough for the dog to make any training progress.

5= all positive

Example: Because a peer refused to leave the tack room, Client made the best of it and rode closer to the barn so this specialist could watch all members of the group at once. She did not get frustrated, but made the best of a bad situation.

Example: Client did well and enjoyed the ride. She did have trouble with her horse stopping to eat along the way. Although this was irritating, she remained calm and patient.

Example: Today we walked Radar around the campus and worked on having him in the heel position. Client was able to stay on task throughout the walk and accomplished some good training.

Example: The participants practiced riding patterns to help them get used to the rein positions we have been working on. Client rode a different horse today. He did wonderful. You could see pride all over his face where he usually has no emotion.

Appendix K

Ohio Scales Youth Rating - Short Form

Please rate the degree to which you have experienced the following problems in the past 30 days.

0= "Not at all" 1= "Once or twice" 2= "Several times" 3= "Often"
4= "Most of the time" 5= "All of the time"

1	Arguing with others	0	1	2	3	4	5
2	Getting in fights	0	1	2	3	4	5
3	Yelling, swearing, or screaming at others	0	1	2	3	4	5
4	Fits of anger	0	1	2	3	4	5
5	Refusing to do what teachers or parents ask	0	1	2	3	4	5
6	Causing trouble for no reason	0	1	2	3	4	5
7	Using drugs or alcohol	0	1	2	3	4	5
8	Breaking rules or breaking the law (out past curfew, stealing)	0	1	2	3	4	5
9	Skipping school classes	0	1	2	3	4	5
10	Lying	0	1	2	3	4	5
11	Can't seem to sit still, having too much energy	0	1	2	3	4	5
12	Hurting self (cutting or scratching self, taking pills)	0	1	2	3	4	5
13	Talking or thinking of death	0	1	2	3	4	5
14	Feeling worthless or useless	0	1	2	3	4	5
15	Feeling lonely and having no friends	0	1	2	3	4	5
16	Feeling anxious or fearful	0	1	2	3	4	5
17	Worrying that something bad is going to happen	0	1	2	3	4	5
18	Feeling sad or depressed	0	1	2	3	4	5
19	Nightmares	0	1	2	3	4	5
20	Eating problems	0	1	2	3	4	5

Instructions: Please circle your response to each question.

1. Overall, how satisfied are you with your life right now?
    1. Extremely satisfied
    2. Moderately satisfied
    3. Somewhat satisfied
    4. Somewhat dissatisfied
    5. Moderately dissatisfied
    6. Extremely dissatisfied

2. How energetic and healthy do you feel right now?
    1. Extremely healthy
    2. Moderately healthy
    3. Somewhat healthy

4. Somewhat unhealthy
5. Moderately unhealthy
6. Extremely unhealthy

3. How much stress or pressure is in your life right now?
    1. Very little stress
    2. Some stress
    3. Quite a bit of stress
    4. A moderate amount of stress
    5. A great deal of stress
    6. Unbearable amounts of stress
4. How optimistic are you about the future?
    1. The future looks very bright
    2. The future looks somewhat bright
    3. The future looks OK
    4. The future looks both good and bad
    5. The future looks bad
    6. The future looks very bad

Instructions: Please circle your response to each question.

1. How satisfied are you with the mental health services you have received so far?
    1. Extremely satisfied
    2. Moderately satisfied
    3. Somewhat satisfied
    4. Somewhat dissatisfied
    5. Moderately dissatisfied
    6. Extremely dissatisfied
2. How much are you included in deciding your treatment?
    1. A great deal
    2. Moderately
    3. Quite a bit
    4. Somewhat
    5. A little
    6. Not at all
3. Mental health workers involved in my case listen to me and know what I want.
    1. A great deal
    2. Moderately
    3. Quite a bit
    4. Somewhat
    5. A little
    6. Not at all
4. I have a lot of say about what happens in my treatment.

1. A great deal
2. Moderately
3. Quite a bit
4. Somewhat
5. A little
6. Not at all

Below are some ways your problems might get in the way of your ability to do everyday activities. Read each item and circle the number that best describes your current situation.

0= “Extreme troubles” 1= “Quite a few troubles” 2= “Some troubles”
3= “OK” 4= “Doing very well”

1	Getting along with friends	0	1	2	3	4
2	Getting along with family	0	1	2	3	4
3	Dating or developing relationships with boyfriends or girlfriends	0	1	2	3	4
4	Getting along with adults outside the family (teachers, principals)	0	1	2	3	4
5	Keeping neat and clean, looking good	0	1	2	3	4
6	Caring for health needs and keeping good health habits (taking medicines or brushing teeth)	0	1	2	3	4
7	Controlling emotions and staying out of trouble	0	1	2	3	4
8	Being motivated and finishing projects	0	1	2	3	4
9	Participating in hobbies (baseball cards, coins, stamps, art)	0	1	2	3	4
10	Participating in recreational activities (sports, swimming, bike riding)	0	1	2	3	4
11	Completing household chores (cleaning room, other chores)	0	1	2	3	4
12	Attending school and getting passing grades in school	0	1	2	3	4
13	Learning skills that will be useful for future jobs	0	1	2	3	4
14	Feeling good about self	0	1	2	3	4
15	Thinking clearly and making good decisions	0	1	2	3	4
16	Concentrating, paying attention, and completing tasks	0	1	2	3	4
17	Earning money and learning how to use money wisely	0	1	2	3	4
18	Doing things without supervision or restrictions	0	1	2	3	4
19	Accepting responsibility for actions	0	1	2	3	4
20	Ability to express feelings	0	1	2	3	4

Appendix L

Ohio Scales Agency Worker Rating- Short Form

Please rate the degree to which the designated child has experienced the following problems in the past 30 days.

0= "Not at all" 1= "Once or twice" 2= "Several times" 3= "Often"
4= "Most of the time" 5= "All of the time"

1	Arguing with others	0	1	2	3	4	5
2	Getting in fights	0	1	2	3	4	5
3	Yelling, swearing, or screaming at others	0	1	2	3	4	5
4	Fits of anger	0	1	2	3	4	5
5	Refusing to do what teachers or parents ask	0	1	2	3	4	5
6	Causing trouble for no reason	0	1	2	3	4	5
7	Using drugs or alcohol	0	1	2	3	4	5
8	Breaking rules or breaking the law (out past curfew, stealing)	0	1	2	3	4	5
9	Skipping school classes	0	1	2	3	4	5
10	Lying	0	1	2	3	4	5
11	Can't seem to sit still, having too much energy	0	1	2	3	4	5
12	Hurting self (cutting or scratching self, taking pills)	0	1	2	3	4	5
13	Talking or thinking of death	0	1	2	3	4	5
14	Feeling worthless or useless	0	1	2	3	4	5
15	Feeling lonely and having no friends	0	1	2	3	4	5
16	Feeling anxious or fearful	0	1	2	3	4	5
17	Worrying that something bad is going to happen	0	1	2	3	4	5
18	Feeling sad or depressed	0	1	2	3	4	5
19	Nightmares	0	1	2	3	4	5
20	Eating problems	0	1	2	3	4	5

Roles: Enter the number of days the youth was placed in each of the following settings during the past 90 days. (For example, the youth may have been in the detention center for 30 days, a group home for 7 days and with the biological mother for 80 days.)

Jail		Foster care	
Juvenile detention center		Supervised independent living	
Inpatient psychiatric hospital		Home of a family friend	
Drug/alcohol rehabilitation center		Adoptive home	
Medical hospital		Home of a relative	
Residential treatment		School dormitory	
Group emergency shelter		Biological father	
Residential job corps/vocational center		Biological mother	
Group home		Two biological parents	
Therapeutic foster care		Independent living with friend	
Individual home emergency shelter		Independent living by self	
Specialized foster care			

Markers: School Placement_____
Current psychoactive medications_____
_____
Arrests_____
Suspensions from school_____
Days in detention_____
Days of school missed_____
Self-harm attempts_____

Instructions: Please circle the number corresponding to the designated youth's current level of functioning in each area.

0= "Extreme troubles" 1= "Quite a few troubles" 2= "Some troubles"
3= "OK" 4= "Doing very well"

1	Getting along with friends	0	1	2	3	4
2	Getting along with family	0	1	2	3	4
3	Dating or developing relationships with boyfriends or girlfriends	0	1	2	3	4
4	Getting along with adults outside the family (teachers, principals)	0	1	2	3	4
5	Keeping neat and clean, looking good	0	1	2	3	4
6	Caring for health needs and keeping good health habits (taking medicines or brushing teeth)	0	1	2	3	4
7	Controlling emotions and staying out of trouble	0	1	2	3	4
8	Being motivated and finishing projects	0	1	2	3	4
9	Participating in hobbies (baseball cards, coins, stamps, art)	0	1	2	3	4
10	Participating in recreational activities (sports, swimming, bike riding)	0	1	2	3	4
11	Completing household chores (cleaning room, other chores)	0	1	2	3	4
12	Attending school and getting passing grades in school	0	1	2	3	4
13	Learning skills that will be useful for future jobs	0	1	2	3	4
14	Feeling good about self	0	1	2	3	4
15	Thinking clearly and making good decisions	0	1	2	3	4
16	Concentrating, paying attention, and completing tasks	0	1	2	3	4
17	Earning money and learning how to use money wisely	0	1	2	3	4
18	Doing things without supervision or restrictions	0	1	2	3	4
19	Accepting responsibility for actions	0	1	2	3	4
20	Ability to express feelings	0	1	2	3	4