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Implications of Equine Therapy Utilized with Children Who Have Experienced
Trauma: A Systematic Review

By

Autumn Phenow, BSW, LSW

MSW Clinical Research Paper

Presented to the Faculty of the
School of Social Work
St. Catherine University and the University of St. Thomas
St. Paul, Minnesota
In Partial Fulfillment of the Requirements for the Degree of
Master of Social Work

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This Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by research committee and the university Institutional Review Board, implement the project, and publicly present the finding of the study. This project is neither a Master's thesis nor a dissertation.

Abstract

The purpose of this systematic review is to review the research that looks at the efficacy of Equine Therapy as it pertains to working with children who have experienced trauma, and the effectiveness of building and repairing relationships. Trauma is recognized as having a devastating impact on the body and the mind of children. Equine therapy is an alternative, newer technique being utilized to help repair the attachment process with this population. The review examined dissertations, meta-analyses, program evaluations studies, exploration studies and journal articles. All participants in the studies had experienced trauma as a child. Initially 40 articles abstracts were reviewed; 18 were excluded and 22 met inclusion criteria. The full texts of these articles were then reviewed. After this review only 9 articles met the inclusion and exclusion criteria for this systematic review. All articles found positive aspects in working with horses and concluded children and adolescents gained skills. With these skills, children and adolescents are able to overcome effects of early trauma and stress related disorders.

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Introduction

Social workers continue to work with an array of populations and within those populations, work with children and adolescents who have a difficult time trusting and joining with those whom they work. Equine therapy is an alternative, newer technique being utilized to help repair the attachment process with these populations. Equine therapy provides an alternative experience for children and adolescents who have difficulty forming a therapeutic alliance (Burgon, 2011), forming this alliance is especially challenging for children who suffer from Posttraumatic Stress Disorder.

Although there are many ways to define trauma, Francine Shapiro (2002) defines it as “any event that has a lasting negative effect on the self or psyche” (p. 14). Within the United States a significant number of children are exposed to trauma. According to the U.S. Department of Health and Human Services in 2012, approximately 676,569 children have been victims of child abuse and neglect.

Trauma is recognized as having a devastating impact on the body and the mind of children. Trauma is known to have a great impact on brain development. Research suggests that the brain development of children and adolescents is malleable and can overcome early life experiences; however, traumatic events tend to leave impairments on both the mind and the body (Waite & Bourke 2013).

The National Association of Social Work 2016 states part of clinical social work responsibilities for ethical practice and professional development is

based on continued growth. As the ethical practice and professional development states:

“The National Association of Social Work views professional development as an essential activity for ensuring quality social work services.

Professional development is a self-directed process, which requires social workers to assume responsibility for the growth of their own professional knowledge base. Regardless of career stage, social workers are ethically required to keep informed of current research, theory, and techniques that guide social work practice to better serve clients and constituents.”

Although there are many modalities to working with children, equine therapy takes a different approach in working with children and adolescents who have experienced trauma. The mission of the North America Riding for the Handicapped Association (NARHA), established in 1969, is to “change and enrich lives by promoting excellence in equine assisted activities” (NARHA, 2009). In 1996 NARHA established the Equine Facilitated Mental Health Association (EFMHA) in order to stop the trend of treating physical deficits. This organization focused on addressing the psychological and mental health needs of individuals in order to begin the process of repairing relationships (NARHA, 2009).

Siegel (1999) a neurobiologist and attachment therapist states when children develop secure attachments they are able to develop the skills that allow them to explore the world and develop healthy relationships. Conversely when a child experiences trauma his or her ability to form relationships can be disrupted.

These early childhood attachments are essential for a child's growth.

"Consequently, disruptions in these relationships often lead to lifelong disturbances in their sense of self, their sense of others, and their capacity to regulate, contain, and modulate their affective experience" (Slade, 2004, p. 182).

Equine therapy focuses on trust and building a relationship between the horse and child to strengthen the relationship with the therapist (Ferwin and Gardiner, 2005).

Equine therapy uses horses as a therapeutic tool through a process in which the child learns different ways to trust the horse and the therapist (Ferwin and Gardiner, 2005). Ferwin and Gardiner (2005) suggest this is done through the child interacting and forming a relationship with the horse, which then teaches the child that forming healthy relationships is a part of natural development of the stages in life. In reviewing the literature it is important to focus on a) defining trauma and stress related disorders, b) the impact of traumatic relationships on the child's development, and the c) association between equine therapy and repairing relationships.

The purpose of the present systematic review is to review the research behind this modality specifically; a) its efficacy working with children who have experienced trauma, and b) its effectiveness in building and repairing relationships.

Trauma-and Stress-Related Disorders

There are seven different trauma-and stressor-related disorders in the Diagnostic and Statistical manual (DSM-5, 2013) including: Reactive Attachment

Disorder; Disinhibited Social Engagement Disorder; Posttraumatic Stress Disorder; Acute Stress Disorder; Adjustment Disorder; Other Specified Trauma- and Stressor-Related Disorder; and Unspecified Trauma- and Stressor-Related Disorder. Although the DSM-5 does lay out criteria for PTSD and other disorders, it does not define trauma. According to Lenora Terr (1991) there are two ways trauma can be defined; Type I trauma or Type II trauma. Short-term trauma or Type 1 trauma are abrupt events that may overwhelm an individual's sense of safety (tornadoes, earthquakes, motor vehicle accidents, and fires) the individual can experience traumatic symptoms. Type II trauma is sustained, ongoing and repeated traumatic events (child sexual abuse, spousal abuse, and combat). It is often known as Complex PTSD. It is important to remember the distinction between the two types of trauma since they impact people differently. For example, prolonged exposure to trauma as with Type II trauma has more influence on the brain (Terr, 1991).

Reactive Attachment Disorder (RAD) is a diagnosis that describes a child who has the inability to attach to others due to early experiences with caregivers. A child with this diagnosis does not depend on the caregiver for support, comfort, protection or nurturance. Children with RAD "are believed to have the capacity to form selective attachments. However, because of limited opportunities during early development, they fail to show the behavioral manifestations of selective attachments" (p. 266).

Disinhibited Social Engagement Disorder is based on a child having inappropriate relationships with unfamiliar people, such as willingness to leave

with a stranger with no hesitation. According to the DSM-5 this type of behavior can occur as a result to the child experiencing insufficient care; “Disinhibited Social Engagement Disorder may be seen in children with a history of neglect who lack attachments or whose attachments to their caregivers range from disturbed to secure” (p.269).

PTSD is a diagnosis that describes a child who has experienced or been exposed to one or more traumatic events. PTSD is a collection of symptoms that include intrusive symptoms, avoidance, hyperarousal, change in mood, and an event that is recognized as traumatic. These events have left the child with emotional reactions in play and dreams, dissociative reactions, or marked psychological/physiological reactions to external or internal cues that resemble the traumatic event. Individuals can exhibit some or all of the symptoms.

Acute Stress Disorder is similar to PTSD in that the individual has been exposed to a traumatic event but, per the DSM-5, is distinguished by the pattern of symptoms and when they occur. Symptoms must occur and resolve within one month of the event: if symptoms persist the individual meets criteria for PTSD.

An Adjustment Disorder diagnosis results when an individual experiences a stressor and he or she develops a clinically significant emotional or behavioral response to that stressor within three months of onset. The symptoms picture lasts no longer than six months after the stressor has resolved.

According to the DSM-5, Other Specified Trauma-and Stressor-Related Disorder and Unspecified Trauma-and Stressor-Related Disorder are

characterize individuals with clinically-significant symptoms but meet criteria for other trauma and stressor-related disorders. “Other” is used there is a specific reason. In contrast, “Unspecified” is used when the clinician does not specify the reason or there is insufficient information regarding cause of the stressor.

Attachment

Research has shown “it is virtually impossible to discuss trauma in children without addressing the quality of the parental attachment bond” (Bessel van der Kolk, 2003, p. 294). Siegel (1999) suggests attachment is a “vital function” an infant needs in order to comprehend dangers around them. “These relationships are crucial in organizing not only ongoing experience, but the neuronal growth of the developing brain. In other words, these salient emotional relationships have a direct effect on the development of the domains of mental functioning that serves as our conceptual anchor points: memory, narrative, emotion, representations and states of mind (Siegel, 1999, p. 68).

Attachment theory suggests children are born to survive and according to Ainsworth & Bell (1970), learn through attachment, how to form interpersonal relationships and it also develops templates that shape the way individuals are going to experience human relationships. Attachment is defined as, “An affectional tie that one person or animal forms between himself and another specific one—a tie that binds them together in space and endures over time” (p. 50). Siegel (1999) notes a secure attachment provides children with the ability to form a “secure base” that allows them to internalize early attachment relationships as they develop.

According to Bessel van der Kolk (2003), the most important factor to guard against trauma-induced disorganization is the secure bond of early attachment; when this bond is not a secure attachment a child experiences the world much differently. Insecurity attached individuals may have a sense of disconnection of which they may be quite unaware, and this sense of distance from others and from the self may dominate their experiences. It may also be apparent in how they describe their awareness of their own emotions (Siegel, 1999, p. 93).

A child tends to react to a parent's verbal and nonverbal cues, and Hesse and Main (2000) note, "...behavior can be seen in response to experimentally induced conflicting signals, experimentally induced situations of inescapable shame, and major separations" (p. 42). They explain this as a "paradoxical injunction" where the child is given the conflicting message of "come here and go away", which presents a child with an unsolvable and problematic situation. Main and Hesse (2000) have proposed that these dyadic interactions involving parental frightened, disoriented or frightening behaviors toward the infant are inherently disorganizing. According to Siegel (1999), "They are disruptive to an organized strategy because the infant cannot make sense of the internally generated and confusing parental responses. Furthermore, the child cannot use the parent to become soothed or oriented, because the parent is in fact the source of the fear or disorientation" (p.108).

When traumatic emotions become too overwhelming with no hope of repair, the defense of "dissociation" is created to deal with the overwhelming

dysregulated affect. “Dissociation is simply disengaging from stimuli in the external world and attending to the ‘internal’ world. Daydreaming, fantasy, depersonalization, derealization, and fugue states are all examples of dissociation” (Perry et al., 1995, p. 280). This can look much different with children who have a secure attachment early on as compared to a child that is exposed to severe abuse at an early age and has not developed an attachment to a caregiver. Siegel (1999) notes it is a combination of a “parent’s own continuing preoccupations and inconsistent sensitivity to the child’s signals, the dance of (mis)attuned communication in such a dyad continues to reinforce the intense, inconsistent, and intrusive nature of the alignment of states of mind” (p.103). The author further suggests that the child can experience this through the “impaired ability to negotiate conflicts, chronic and severe maternal depression, child maltreatment, parental controlling, helpless, and coercive behaviors” (p.109).

How a child learns to play, engage, attune and mentalize are all affected by the child’s early attachment relationships. An important skill that is developed by healthy attachment in young children is “mentalization.” In development mentalization occurs when children feel held in the minds of others and they also hold others in mind. In this way relationships begin to take on a predictable pattern. According to Slade (2003), mentalization is not innate and children; it is a skill that is learned through a healthy attachment relationship. Without this tool children do not feel empathically understood by others and are unable to understand the minds of others. “By attributing mental states to others, children

make people's behavior meaningful and predictable" (Fonagy & Target, 1998, p. 92). Children with secure early attachment can become derailed, but they have the tools for mentalization and affect regulation, which gives them the capacity to negotiate relationships in a meaningful way and mentalization promotes the capacity for self-regulation.

Trauma

Bachi (2013) suggests equine therapy interventions serve people who are recovering from trauma. Research suggests, "When the 'normal' process of establishing a secure attachment is disrupted by trauma, then all the functions of attachment, neurological development, affect regulation, and mentalization are also disrupted" (Van der Kolk, 2003, p.406).

Children learn to trust or mistrust individuals and react to different circumstances based on early relationships and how their brains have developed. According to Bessel van der Kolk (2003), children who experience early trauma, develop much differently than children who experience trauma later in life. Infants very early on learn by remembering how one responded to them through touch and sound and those physical experiences mold them and create how they respond to the world around them. Early abuse changes the way the brain is structured whereas later abuse changes the way the brain functions, which indicates, "...the age at which children are first traumatized, the frequency of their traumatic experiences, the degree to which caregivers contribute to trauma all have profound impact on their psychological damage" (Bessel van der Kolk, 2003 p. 293).

When trauma occurs in a child, his or her brain is jolted and signals in the brain fire incorrectly. The hippocampus does not store these memories correctly, but instead these memories get stored in our sensory memory (implicit or procedural memory). The amygdala becomes aroused and the hippocampus cannot make sense of it. Even though emotional memories are stored forever, people can learn to make sense of them as such, the child's brain reacts and uses a survival response of fight, flight or freeze and the brain starts to fire signals incorrectly to survive in the moment (Bessel van der Kolk, 2003). At this point children are remembering too much or not enough and it affects them in physical ways. When a child remembers too much it can cause intrusive symptoms like nightmares, which haunt the individual. If a child remembers too little he or she could develop partial or complete amnesia to that memory. Dissociation allows the child to separate body and mind. Which can be adaptive for the child since it allows them to mentally remove themselves from the abuse (Siegel, 1999). Although dissociation can be beneficial in the moment, Siegel states:

These events may remain in an unresolved, unconsolidated form. In this state, they may be more likely to influence implicit recollections automatically, creating elements of emotional, behavioral, perceptual, and perhaps somatic reactions without conscious awareness of their origins. The ability of the mind to integrate these aspects of memory is severely impaired in unresolved trauma and in disorganized/disoriented

attachments, leading to dissociative tendencies and incoherence of mind (p.110).

Every child processes and remembers memories differently, but early memories of trauma can have a significant impact on their journeys (Maikoetter, 2015). According to Perry et al. (1995), “Trauma is an experience. How is it that this experience can transform a child’s world into a terror-filled, confusing miasma that so dramatically alters the child’s trajectory into and throughout adult life” (p. 273). According to Cournos (2003), early attachment trauma can pave the way for children who later on experience derailed development,

Equine Therapy

“Equine-facilitated psychotherapy is a form of animal-assisted therapy used to treat human psychological problems that employs horses in and around the natural surroundings of the stables” (Bachi, 2013, p. 187). Through a licensed psychotherapist, equine professional, and the client, goals and objectives are established to meet the needs of the client. In 1990 equine therapy independently branched out to address the social, emotional and mental health needs of clients (Bachi, 2013). Within the first session the therapist is able to observe how the client relates to the horse, the environment and the therapist.

Children who experience trauma have a difficult time trusting and building rapport with other individuals. Equine therapy introduces a horse into the therapeutic setting, to assist in building rapport between the therapist and child. Through equine therapy children learn to read nonverbal cues, which happens to be a struggle with therapists who work with children having a difficult time

verbalizing their wants.) It is a specialized form of psychotherapy “designed to address self-esteem and personal confidence, communication and interpersonal effectiveness, trust, boundaries and limit-setting, and group cohesion” (Schultz, Remick-Barlow, & Robbins, 2007). Children who exhibited these weaknesses learn the abilities through their interactions with horses. They are able to learn to not lead or push but instead stand beside the horses to work with them through emotional and behavioral control. According to Ferwin & Gardiner (2005), the children are able to obtain this through the training and learning of the hands-on technique, which includes a healing component intertwined with therapy. The horses are large and demand the children to learn how to obtain their trust, and this is done through months of training and learning. Quizor Rothe, Vega, Torres, Soler, and Pazos (2005) state:

The child-horse bond can develop the following qualities: mutual trust, respect, affection, empathy, unconditional acceptance, confidence, personal success, responsibility, assertiveness, communication skills and self-control. This bond may also help the child unite unconditionally with another living being, and self-disclose in a safe and respectful way (p. 376).

Reynolds (2009) states by the horse mirroring how the child is feeling in the moment, a child can learn and better understand how his or her emotions and behaviors can affect others and themselves. This then can help the child learn about personal exploration when experiencing strong emotions and how those emotions affect the horse. In turn, “the tasks or exercise that were once difficult

for the child to attempt or complete with the horse become easier as time goes on” (Reynolds, 2009, p. 20), and the child is able to see a new way of experiencing relationships.

The Association of Equine Therapy and Attachment

According to Bachi (2013), there is an association between equine therapy and attachment theory. The central features of equine therapy are having a “secure base and haven of safety through the provision of a holding environment, affect mirroring, mentalizing and reflective functioning, and non-verbal communication and body experience” (Bachi, 2013, p. 186). These are also the primary concepts of attachment-based psychotherapy. The secure base/holding environment is important as it encourages a secure attachment with the child. It allows the child feel safe to explore and exhibit to the child that the therapist is reliable, attentive and empathic, (Bachi, 2013).

In equine therapy there are a range of opportunities for the provision of a secure base and haven of safety through a holding environment. First, the horse’s back is viewed as a “therapeutic mobile setting” which holds the client physically and symbolically. Second, the unique natural setting in which this therapy occurs can promote elements of holding as they relate to rapport and trust. Third, the acceptance and non-judgment of the horse can contribute to the client’s sense of being held. (p. 191).

The power of a mother mirroring a child’s affect gives the child the message the mother is in sync with the child’s emotions (Siegel, 1999). A horse has an innate ability of mirror affect due to the horse’s biological defense (Bachi,

2013). A horse mirrors the child's emotional, behavioral, and physical reactions and will sense, respond, and react to this, in return bonding with the child. This starts the repair process for a child to learn how to attach and build on their mentalizing and self-reflective skills (Bachi, 2013).

According to Bachi (2013), by watching how the horse reacts to the child, the child is then able to understand how both the child and the horse are affected by each other's behavior and interactions. "The use of mentalizing and reflective functioning through a therapeutic intervention can include increasing the client's sensitivity and appropriate responsiveness to the "others" signals and emotional needs" (Bachi, 2013, p. 192). Equine therapy then teaches the child non-verbal communication and body experience through the interactions with the horse.

Research suggests that emotions are an experience of the body, which is a fundamental to attachment-oriented framework, and by focusing on the body the child is able to form an attachment with the therapist using the horse as the secure base (Bachi, 2013). The child also learns to tolerate strong emotions in the process.

Methods

A systematic review of the research literature on the effectiveness of equine therapy with traumatized children will be explored. According to Petticrew, Mark; Roberts & Helen (2008), a systematic literature review is defined, "a method of making sense of large bodies of information, and a means of contributing to the answers to questions about what works and what does not and many other types of question too" (p. 2). Additionally, systematic reviews

map out areas of uncertainty by identifying relevant research and where new research is needed (Petticrew et al., 2008).

Inclusion/Exclusion Criteria

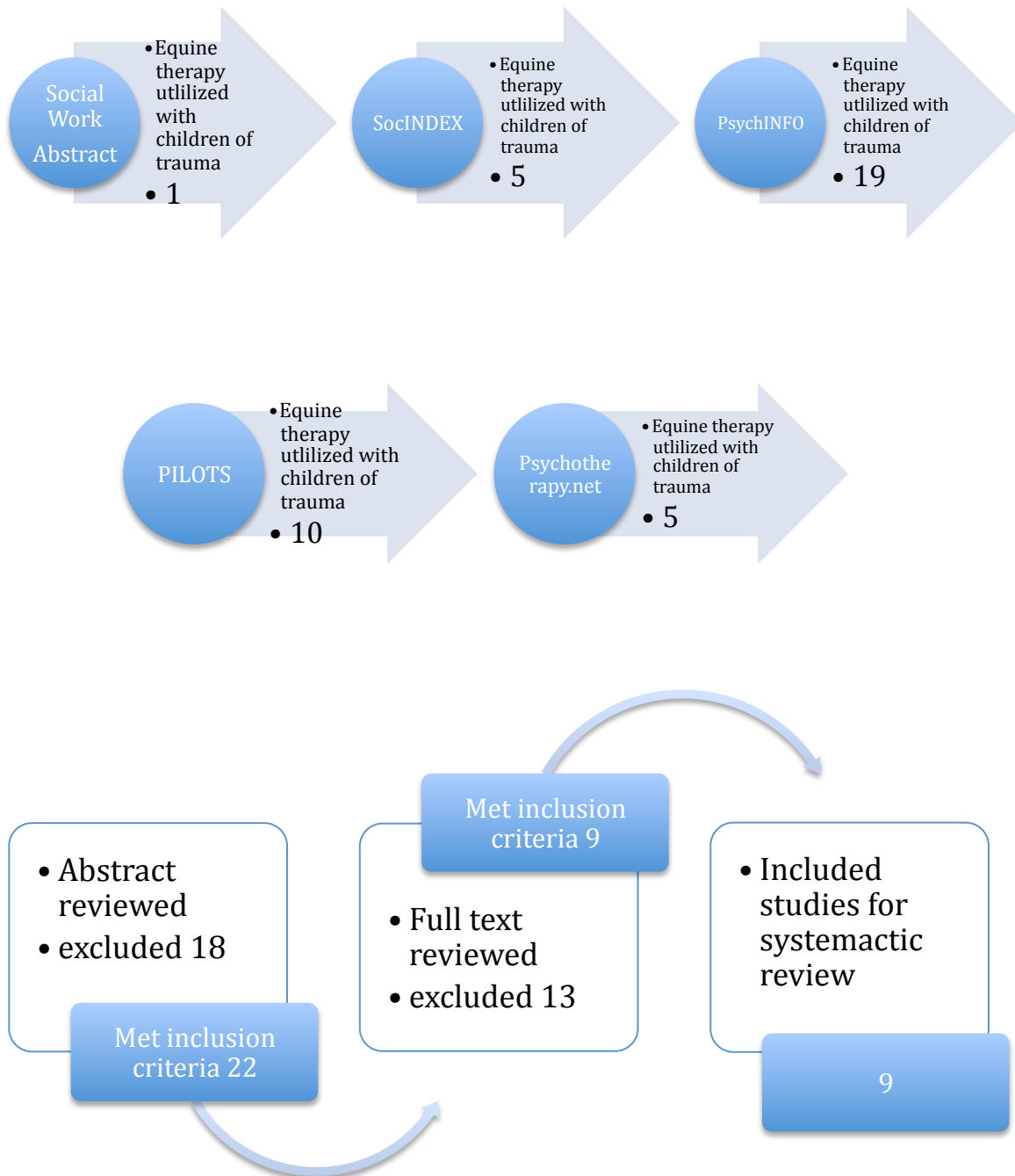
The theme of the articles used in the systematic review focused on equine therapy being utilized with children and adolescents who experienced trauma. All of the articles included research on equine therapy and trauma. The research included in this systematic review needed to be peer reviewed between 2008-2015, published in English and pertain to children up to 18 years of age. Abstracts were reviewed to determine their eligibility for this project.

Data Abstraction

Literature was found in the PsychINFO, SocINDEX, PILOTS, psychotherapy.net, and Social Work abstracts databases. Petticrew et al., (2008) states “for some clinical topics it has been shown that for comprehensive searching one needs to search a minimum of two or more databases plus hand searching selected journals” (p. 104). The search term used was “equine therapy utilized with children who have experienced trauma”. The review examined dissertations, meta-analyses, program evaluations studies, exploration studies and journal articles. All participants in the studies had experienced trauma as a child. Initially 40 articles abstracts were reviewed; 18 were excluded and 22 met inclusion criteria. The full text of these articles were then reviewed. After this review only nine articles met the inclusion and exclusion criteria for this systematic review, as shown in Table 1.

Table 1

Search Strategy



Findings

A systematic review was utilized in order to determine the effectiveness of utilizing equine therapy with children who had experienced trauma. The purpose of this systematic review is to review the research behind this modality and its efficacy working with children who have experienced trauma while looking at the effectiveness of building and repairing relationships. After reviewing the abstracts and full text, 9 articles met the inclusion criteria and were examined as shown in table 2. Key themes were identified throughout the research. Some articles addressed specific types of trauma children and adolescents experienced and others spoke of “at risk” youth who have experienced trauma in the past.

Table 2 Study Comparison

Journal Article	Setting	Participants	Therapists	Methods	Results	Limitations
<p>Equine Facilitated Therapy with Children and Adolescents Who Have Been Sexually Abused: A Program Evaluation Study</p> <p>Kemp, K., Signal, T., Botros, H., Taylor, N., & Prentice, K. (2014).</p>	<p>Equine facilitated program run by the Phoenix House, a sexual assault referral center</p>	<p>Six boys and nine girls (aged 8-11 years) and 15 adolescent girls (ages 12-17 years)</p>	<p>In clinic counselors does not specify license</p>	<p>All participants provided several measures of data designed to establish levels of psychological distress at three points in a time. Time 1, intake; Time 2, six weeks in clinic counseling pre EFT; Time 3, post EFT 9-10 week duration</p>	<p>Significant improvements in functioning were found between Time 2 and Time 3 assessment across all psychometric measures and for both age groups. No, or non-significant, improvements were found between Time 1 and Time 2 assessments. EFT proved to be an effective approach.</p>	<p>-Small sample size - Counselors not specified in training -No follow up</p>
<p>"Queen of the world": experiences of 'at-risk' young people participating in equine-assisted learning/therapy.</p> <p>Burton, H. L. (2011).</p>	<p>Therapeutic horsemanship program (TH) The Yard was located in the countryside and consisted of a yard area and open barn, together with a small office, feed and tack area.</p>	<p>Seven young people who attended The Yard over a two-year period participated in the study. There were five girls and two boys.</p>	<p>TH practitioners included a play therapist, a teacher and a counselor, together with experienced horse specialists.</p>	<p>TH sessions were between one and three hours long, and the participants attended weekly, activities in a session ranged from initially just spending time with the horses, observing, discussing horse behavior and</p>	<p>The results from this study suggest that the relationships and experiences the participants had with the horses contributed to them gaining psychosocial benefits such as those identified in the risk and resilience literature as</p>	<p>-small sample size -funding -and youth attendance</p>

				psychology, to learning how to look after and work with them.	offering 'protective factors'.	
Equine-Assisted Therapy for Anxiety and Posttraumatic Stress Symptoms Earles, J. L., Vernon, L. L., & Yetz, J. P. (2015).	Equine-assisted therapy facility	Participants were 16 volunteers who had experienced traumatic event, such as a rape or serious accident, and had current PTSD symptoms and were recruited through mental health practitioners	Dr. Yetz, clinical psychiatrist	Participants engaged in tasks with horses for 6 weekly 2-hour sessions Participants attended the program in three groups ranging from five to six participants. Participants came to the facility once a week for 6 weeks.	Immediately following the final session, participants reported significantly reduced posttraumatic stress symptoms evidence equine-assisted therapy may be an effective treatment for anxiety and posttraumatic stress symptoms.	-Small sample - Nonrandom participants -No long term follow-up
"It's different with a horse": horses as a tool for engagement in a horse therapy program for marginalized young people Waite, C., & Bourke, L. (2013).	Equine facility on the outskirts of a regional town in central Victoria, Australia.	A total of 49 participants and significant others were interviewed about their experience of the program The program was aimed at young people needing to develop social and communication skills, struggling with school, exhibiting behaviors of concern and/or	The program was co-facilitated by a qualified male youth worker as well as a female horse trainer who had developed counseling skills through her work with a youth agency.	Data was collected over a two-year period between 2008 and 2010. Individual, face-to-face interviews were conducted with 40 clients soon after they exited the round yard following their first session.	The use of a horse appeared to capture the attention of most of these young people, encourage their active participation and facilitate a genuine emotional response.	The data reflect only one group of clients immediately after only one session. Other limitations exist, including the use of interviews in which some young respondents struggled

		those unresponsive to other modes of intervention.				to talk about their experiences and feelings.
A Comparative Study of the Efficacy of Group Equine Assisted Counseling With At-Risk Children and Adolescents Reynolds, N. D. (2009).	School district in the southwestern region of the United States	Students from the third through eighth grades who were identified by their school counselors as being at-risk for academic and/or social failure were invited by their school counselors to participate in a group-counseling program.	Comparing Equine Assisted counselors (EAC) to school based counselors at Rainbow days (RD)	The 12-week EAC treatment plan consisted of group interactions with horses in order to facilitate the prevention and resolution of emotional and behavioral concerns. Kid's Connection, a program of RD was utilized as the comparison treatment group. Kid's Connection is an indoor, school-based (in-classroom) group counseling program.	Participants in the EAC treatment groups demonstrated a statistically significant decrease in negative behaviors and a statistically significant increase in positive behaviors Participants in the RD comparison treatment group demonstrated a statistically significant decrease in one negative behavior and demonstrated a statistically significant increase in four positive behaviors	-Kid's Connection program, required only 1-hour weekly sessions, whereas the -EAC treatment received weekly 2-hour sessions Sample size of the RD comparison treatment group was much smaller than the EAC treatment group
The Benefits of Equine-Assisted Activities: An Explorator	The present study was conducted at Greatwood, a racehorse rehabilitation center which	Eleven students aged 12–14 years (Mode = 12), and identified as having emotional,	Did not disclose	Interaction frequency, self-report anxiety and self-esteem were	A significant reduction in trait anxiety was found over the course of the program,	The sample was small, homogenous and opportuni

<p>y Study Holmes, C. M. P., Goodwin, D., Redhead, E. S., & Goymour, K. L. (2012).</p>	<p>teaches small groups of students with emotional, behavioral and learning difficulties about animal welfare.</p>	<p>behavioral or learning difficulties participated in the study. Participants were from two comprehensive schools and had a range of academic abilities. All participants except one were male.</p>		<p>measured.</p>	<p>however, no changes in self-esteem were reported. Such programs could reduce anxiety in at risk populations.</p>	<p>stic in nature, and so findings cannot be generalized broadly.</p>
<p>Mentalizing and Emotional Labor Facilitate Equine-Assisted Social Work with Self-harming Adolescents Carlsson, C., Nilsson Ranta, D., & Traeen, B. (2015).</p>	<p>Home Care and Housing treatment center were the opportunity for having treatment together with horses were offered. Participation was voluntarily and conducted in a facility with riding arena, stables and therapy room.</p>	<p>Female's self-harming adolescents, residing at a residential treatment facility between 15 and 21 years.</p>	<p>Even though the staff came from different educational backgrounds, they all had specific education and experience in CBT and dialectic behavioral therapy (DBT), which formed the theoretical bases in therapeutic work with clients.</p>	<p>Video recordings of the human-horse interactions of three staff members and four female self-harming clients aged 15–21 years The analysis focused on the interaction between the staff and the clients regarding whether the horse's ability to be an emotional mirror facilitating relationships perceived as authentic was eased or counteracted. This process included</p>	<p>The essence of equine-assisted social work (EASW) was facilitated when the clients got the help needed to understand what is "me" and what is not "me," together with the opportunity to get in touch with their emotions. This process enabled a degree of authenticity that could later be translated into an authentic relationship.</p>	<p>-No licensed therapist -small sample size -no follow up on post care</p>

				multiple viewing of the data and coding of categories, identifying relationships, and comparing of categories until central themes emerged.		
Whispering to Horses: Childhood Sexual Abuse, Depression and the Efficacy of Equine facilitated Therapy Signal, T., Taylor, N., Botros, H., Prentice, K., & Lazarus, K. (2013).	Equine facilitated program run by the Phoenix House, a sexual assault referral center	Participants included 15 children (aged 8-11 years), 15 adolescents (aged 12-17 years) and 14 adults (aged 19-50 years)	The therapeutic team consists of two counselors and four horses	A quasi-experimental, repeated measures design was used to evaluate changes in depressive symptoms with all participants responding on the Child Depression Index or Beck Depression Inventory (as appropriate) at three points in time.	Comparisons of change scores between Time 1 (intake to service) and Time 2 (post in-clinic counseling) and Time 2 and Time 3 (post-EFT) EFT proved to result in a greater decrement in depressive scores than that seen between Times 1 and 2.	-small sample size -follow up -therapist training
Not Just Horsing Around: The Impact of Equine-Assisted Learning on Levels	non-riding equine assisted learning (EAL) curriculum entitled L.A.S.S.O. (Leading	Twenty-six participants were enrolled in the program. Participants included nine males and 17 females	equine professional	The study uses an experimental design with longitudinal, repeated measures. Participants were	This study found even a brief intervention of EAL to be effective at increasing levels of hope and	5 week study

<p>of Hope and Depression in At-Risk Adolescents Frederick, K. E., Ivey Hatz, J., & Lanning, B. (2015).</p>	<p>Adolescents to Successful School Outcomes) facility</p>			<p>randomly assigned to treatment and control groups. Participants in the treatment received 5 weeks of EAL, while participants in the control group received treatment as usual.</p>	<p>decreasing levels of depression in at-risk youth. Hope and depression scores of participants in the treatment group compared with scores of participants in the control group offer a strong validation that EAL has a positive impact on at-risk youth.</p>	
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Research Synthesis

Nine studies were reviewed for this systematic review and all nine articles concluded positive outcomes for the participants in the studies. Studies confirmed youth gained self-esteem, empathy, self-efficacy, coping abilities and more through social interactions with the horses. Along with the socialization the youth were able to bond with the horses and learn through this how to build trusting relationships, mirror emotions and interact with the therapist through the relationship built with the horse. Kemp, K., Signal, T., Botros, H., Taylor, N., & Prentice, K. (2014) proved an effective therapeutic approach using equine therapy with children and adolescents who had been sexually, physically abused or neglected. Thirty participants were selected, fifteen children, (9 females and 6 males) and 15 female adolescents. All participants were observed between March 2010 and September 2011. Time periods: Time 1, intake; Time 2, beginning of counseling (but prior to equine therapy) and Time 3, upon completion of equine therapy). No significant changes were found between Time intake and beginning Counseling.. However improvements were observed in functioning within beginning counseling and upon completion of equine therapy.

Different measures were used for the children and adolescents in order to ensure the use of appropriate psychological tools. Scales utilized to measure trauma symptoms/psychopathology for the 'child' participants were the Children's Depression Inventory (CDI) and the Child Behavior Checklist (CBCL). The 'adolescents' group has assessed using the

Trauma Symptom Checklist (TSCC), the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI). Archival data with code names only were supplied to the researcher to protect the identities of the participants and their families (p.561).

The CDI is a self-reporting measurement designed to measure levels of depression. Based on scores on the CDI between Time 1 and Time 3, equine therapy “was effective in treating the participants for psychological trauma, a repeated measures analysis of variance of the three temporal CDI measures was utilized” (p. 563). Within the data collected in intake and beginning of counseling found that there were no change in reported symptoms of depression; however found a report of change in depression symptoms within beginning of counseling and conclusion of counseling.

The CBCL bases the reports off of the caregiver’s observations of the changes of behavior in the child. CBCL measured the internalized and externalized behaviors of these children demonstrated had a reduction between Time 2 and Time 3, concluding equine therapy compared to the scores of participants working in Time 1 to Time 2 made a critical change in behaviors.

The TSCC is a 54-item questionnaire designed to measure post trauma symptomatology and is scored on a four point Likert scale. TSCC scores indicated equine therapy to be effective in treating children who experienced trauma; “...results of the within subject contrasts showed that there was a significant difference between temporal measures, all differences were significant

and for all subscales, change-scores from Time 2 to Time 3 were significantly greater than those from Time 1 to Time 2” (p. 563).

The BDI which contains 21 items scored on a four point Likert scale, measures level of depression. Although participants showed some improvement within Time 1 and Time 2, there were improvements reported between Time 2 and Time 3.

The BAI is a 21-questionnaire of self-report measure of anxiety in which each item is scored on a 4 point Likert scale. BAI scores also showed participants showed some improvement within Time 1 and Time 2, and improvements reported between Time 2 and Time 3.

Within the time of the study, children and adolescent show improvements after receiving equine therapy. While all participants showed improvements, participants showed more improvements when working with a horse and therapist. “The results supported the hypothesis treat both children and adolescents, regardless of gender or ethnicity, showed a significant improvement in data collected post EFT compared to scores collected prior to commencing the program” (p. 564).

Signal, T., Taylor, N., Botros, H., Prentice, K., & Lazarus, K. (2013) also conducted a study that consisted of children, adolescents, and adults who had experienced sexual, physical, or emotional abuse. This study was designed to examine the reduction of depressive symptoms in individuals suffering from psychological symptoms such as PTSD. This study was also measured in three different time periods, (Time 1, intake, Time 2, participants partaking in

counseling and Time 3, participant's post equine therapy). Participants included 15 children, 15 adolescents and 14 adults. This particular research study had two purposes; to look at the efficacy of equine therapy in reducing depressive symptoms and to assess its efficacy among different age groups. Signal et al., (2013) determined equine therapy resulted in a decline in depressive symptoms among all age groups.

Having a large and powerful horse respond to commands in a calm and favorable manner provides abuse victims with a sense of authority and validation. Such feelings of control have been found to empower clients, increase problem-solving and conflict resolution abilities as well as increase self-esteem, self-confidence, and create a more positive self-image (Signal et al., 2013, p. 26).

To measure the effectiveness of equine therapy, the CDI was utilized for the children and the BDI was utilized for the adolescents and adults. The CDI found a no change in depressive symptoms between Time 1 and Time 2, however, found self-reported depressive symptoms were reduced between Time 2 and Time 3, "In summary, the current outcome evaluation outlines the efficacy of EFT approach in ameliorating depressive symptomology (as indicated by CDI/BDI scores) across three age groups and two ethnicities" (Signal et al., 2013, p.30).

Earles, J. L., Vernon, L. L., & Yetz, J. P. (2015) researched the efficacy of equine therapy in sixteen volunteers who were experiencing anxiety and PTSD. Over six weeks of two-hour sessions, participants reported, "significantly reduced

PTSD symptoms, less severe emotional responses to trauma, less generalized anxiety, and fewer symptoms of depression” (Earles et al., 2015 p.149). The Life Events Checklist (LEC) and PTSD Checklist-Specific (PCL-S) were utilized to predetermine participants and multiply questionnaires were utilized to measure posttraumatic stress, trauma emotions, generalized anxiety, depression, alcohol use, physical health, mindfulness, proactive coping, self-efficacy, social support, life satisfaction and optimism. Based on these findings equine therapy proved to be useful in working with PTSD and other anxiety symptoms.

The term ‘At risk youth’ were discussed in three different research studies. All studies defined the term as individuals who had experienced a traumatic event or had emotional and behavioral deficits due to an event. Frederick, K. E., Ivey Hatz, J., & Lanning, B. (2015) conducted an experimental longitudinal design with repeated measures on at risk youth levels of hope and depression. Nine males and seventeen females were randomly selected and two groups were then divided into treatment and control groups. The treatment team consisted of fourteen youth who received five weeks of equine therapy. The control group consisted of twelve youth who received treatment with a counselor. After five weeks the youth of the treatment group reported a greater decrease of depression and an increase of hope when compared to the control group. The researchers concluded the treatment group was positively impacted by equine therapy, suggesting “Hope and depression scores of participants in the treatment group compared with scores of participants in the control group offer a strong validation that EAL has a positive impact on at-risk youth (p. 814).

Trotter, K. S., Chandler, C. K., Goodwin-Bond, D., & Casey, J. (2008) observed a non-random sample of at-risk youth throughout a 12-week period and compared two groups' pre- and post-test scores their ability to externalize or internalize, their maladaptive, and adaptive behaviors. The first group consisted of participants in equine therapy and the second group consisted of a school based counseling program. Those who participated in equine therapy showed significant improvements in seventeen behaviors, while the school-based group only showed improvements in five. From this research Trotter (2008) found equine therapy to be effective with at risk youth. As Trotter (2008) states about his research findings:

...measured by two different instruments: the Self-Esteem Index and the Harter Self-Perception Profile for Adolescents. In addition, participants reported feelings of being in control of their lives following the EAC intervention. The second study found statistically significant outcomes in self-reports of hostility and global aggression that decreased after treatment as measured by the Self-Esteem Index and Harter Self-Perception Profile for Adolescents (p. 257).

Burgon, H. L. (2011) also conducted a research study on at risk youth focusing on the benefits of equine therapy and each participant's ability to form an early relationship with the horse and therapist. Seven at-risk youth were referred from outside agencies to partake in this study and the participants attended over the course of two years. Findings concluded equine therapy assisted with the participant's ability to join with their therapists and assisted

them in developing the ability to reflect, become independent, empathize and enhance their sense of purpose and future (Burgon, H. L. 2011). Based on cross-disciplinary qualitative research, within a two year period, data was collected and researchers were able to acknowledge that clients respond differently, pending on how the client perceives the person.

Interviews were transcribed and, alongside the fieldnotes, were analyzed using an open coding process to look for emerging themes and patterns. This time-consuming processes eventually resulted in numerous categories, which were organized into two main thematic blocks of social well-being and psychological processes (p. 170).

Throughout this process the participants continued to grow and learn new skills for building self-esteem, confidence, trust and attachment. Participants reported the horse provided them with new skills and “a commonality was of the horses appearing to be the ‘glue’ that motivated them to want to return and build up relationships with the horses, which then seemed to lead to other benefits” (p.170).

Carlsson, C., Nilsson Ranta, D., & Traeen, B. (2015) conducted research on equine therapy that focused on the adolescent’s ability to trust the staff. The study observed participants abilities to form authentic relationships and mirror the therapists emotions through the horse. Video recordings of the interactions between four female self-harming adolescents and three staff members were observed. This study found that clients’ emotions were emerged and clients developed reliance on the horse and the staff. The video recording did not start

until the second or third session, so participants could become familiar with the setting. For three sessions each adolescent was recorded and the analysis focused on the staff and clients interactions and the horse's ability to mirror the clients affect. "The process included multiple viewing of the data and coding of categories, identifying relationships, and comparing of categories until central themes emerged (p. 332). " This study concluded the horse was able to help regulate clients by mirroring their affect. However, it also determined the horse to be more of a distraction instead of assisting the client to attach with the therapist in the three sessions.

Waite, C., & Bourke, L. (2013) also examined youth positive participation and sustained attention while working with therapists and compared to youth working in equine therapy. Forty-nine participants were observed twenty-three females and seventeen males. Twenty-five participants entered the first session, but, for unknown reasons, only 15 were able to complete. This study compared other programs and clients ability to build rapport with the therapist. Data was collected over a two-year period to understand the perspective of clients through face-to-face and semi-structured interviews, which were audio recorded and later transcribed. Findings suggested there was a power in working with a horse and clients were able to gain attention, trust and respect early on, where as other settings therapists found it difficult to obtain this early on. The authors note,

It also implies that characteristics of some traditional therapies could undermine initial engagement for some young people. The pressure on young people to talk, verbalize their feelings and answer questions, in

conjunction with the perception of being judged and feeling impersonally connected to a therapist, seemed to be overcome in this program by a horse, which demanded attention, did not judge or require conversation, and which facilitated a strong connection based on mirroring participants' emotions and behaviors (p.21).

Holmes, C. M. P., Goodwin, D., Redhead, E. S., & Goymour, K. L. (2012) conducted an exploratory study that consisted of quantitative measures and a control group. This study included eleven adolescents, ten males and one female who were struggling with anxiety and self-esteem. Participants completed four consecutive, three-hour equine therapy sessions. To measure anxiety, the Spence Children's Anxiety Scale in which each item was rated on a four-point scale from Never to Always. To measure self-esteem, the Rosenberg Self-Esteem Scale. Participants showed a significant reduction in anxiety after working with the horses and therapists, but no significant change in self-esteem was found.

Discussion

Summary of Research Articles

The themes that emerged throughout this systematic review demonstrate equine therapy is a helpful tool when working with children and adolescents who have experienced trauma. All articles found positive aspects in working with horses and concluded children and adolescents gained skills, such as the aim to continue to provide alternative therapeutic approaches and to continue research is to discover new modalities that are efficient when working with clients.

Research suggest equine therapy continues to provide clients with self-esteem, confidence, the ability to build trust and attach in a manner that assists the client in gaining the ability to mirror affect, understand how others affect them, and how they impact others.

The purpose of the systematic review was to review the research behind this modality and its efficacy working with children and adolescents who have experienced trauma. The results continue to suggest children and adolescents are able to develop a relationship with the horse and through this join with the therapist. Children and adolescents are able to develop coping skills through their relationship with the horse and gain empathy, a sense of purpose and future, self-esteem, autonomy and self-efficacy. With these gained skills, children and adolescents are able to use these skills to overcome trauma and stressor related disorders and lessen the effects of early trauma. Within the research measuring depression, anxiety, PTSD symptoms, intrusive and extrusive behaviors equine therapy assisted in individual see more success sooner than working with a therapist alone.

Limitations

Equine therapy, though widely used, is still being developed and it could be argued that knowledge about the field is inadequate. As pointed out by Bachi (2012), the current research lacks sample size, sound control groups, procedures that do not compromise the thoroughness of the results. Although current studies reiterate the bond between a person and a horse as therapeutic, a

unique theory as to why is lacking, and suggests a unified theory would promote the exploration of theoretical basis for future studies.

Earles et al (2015) explores the limits of evidence studies effectiveness and the associations of most of the studies have few participants, follow up and few displayed improvements in participant's physical health. Other limitations and concerns include the need for further long-term follow up, to explore participants expectations, along with the growing concern of the amount of time people were evaluated (Waite & Bourke 2013).

Frederick et al (2015) encountered concerns with the brief time that was spent on research and examined the necessity for longitudinal studies, naming the convenience of sampling and self-reporting as unreliable. This was also an issue in the study by Signal et al (2013) who also determined the absence of varying ethnicities was problematic. "In order to truly evaluate the cross-cultural efficacy of EFT approaches, there is a need to broaden investigations and include a greater variety of cultural backgrounds" (Signal et al., 2013 p. 30).

There is a need for continuing research in this field. Signal et al (2013) states, "While existing research into the efficacy of EFT has been promising, there is a need to be cautious given the limited number of published empirical studies" (p. 560). Those authors suggested future research focus on who equine therapy is the most effective to sustained the benefits over time. Earles et al., (2015) suggested future research focus on efficacy and the importance of looking at the specific techniques used with children of trauma and other psychological disorders, noting "Future research should use a control group design, and

examine the long-term effect of the treatment and the influence of group dynamics and expectancy effects on treatment outcome” (p. 151).

Research has just begun to examine equine therapy and only experimental research has been published. According to Frederick et al. (2015) to date no random assignment studies have been conducted and most utilize self-report measures. Research did not begin on equine therapy until the 1960's and it has not until 2008 that horses were recognized as a therapeutic approach to mental health treatment (Holmes et al, 2012). Future research is needed to determine the long-term effect of equine therapy and its outcomes.

Implications for Social Work

Waite, C., & Bourke, L. (2013) suggests there have been a myriad of programs developing to assist and reshape the wellbeing of children and adolescents. Within the dynamics of these programs many therapists have difficulty joining and engaging with these children and adolescents. Researching different modalities and continuing to educate social workers is impertinent to continue providing the best practice to the clients. Social workers should continue to investigate the lack of engagement in therapeutic programs, or they risk clients being physically present but not mentally engaged and in turn missing out on the benefit of the given treatment (Waite et al., 2013). “Many marginalized, ‘hard to reach’ young people have been found to positively respond to animal therapies. This is because animals in therapy help to mitigate the pressure and stress inherent in more traditional, talk-based therapies” (Waite et al., 2013, p. 16).

It is important for social workers to continue to further this research due to the strengths approach. Enabling people to accept help from resources is a basic skill of social work, therefore; social workers have the skill of potentially engaging youth in activities, which have the potential of lasting benefits. Frederick et al., (2015) states social workers do not focus on the potential negative outcome, but rather focus and emphasized on positive assets and human strengths. Limitations were pointed out throughout the research and focused on the lack of time spent on research and follow up, which is responsibility that lies within the ethical standard of social work. Frederick et al., (2015) states that equine therapy is useful at instilling hope and reducing depression, but there is a need for quality research for practitioners to base programs selections. "Currently, many therapists are conducting equine-assisted therapy, but there is little consensus about how it should be conducted or how effective different therapy programs are for the treatment of different psychological symptoms" (Earles et al., 2015, p. 150).

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