

Animal-Assisted Intervention for Trauma, Including Post-Traumatic Stress Disorder

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About This Document

HABRI Central Briefs are peer-reviewed summaries of particular applications and issues within the field of human-animal interaction. Each Brief presents an overview of the subject matter, assesses the current state of research, then highlights unresolved questions or issues. Key resources are identified for further reading.

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Overview

The inclusion of animals in psychological treatment – known as Animal-Assisted Intervention (AAI) – is a common and widely accepted component of mental healing and therapy. Animals were first incorporated into mental health institution programs during the late eighteenth century to increase socialization among patients (Serpell, 2006). Today, a number of programs in the United States report involving animals in their services in some capacity. One of the most commonly targeted populations for Animal-Assisted Intervention are individuals who have experienced trauma, including those with Posttraumatic Stress Disorder (PTSD; Tedeschi, Fine, & Helgeson, 2010). Despite the ubiquity of positive media in support of these programs, little empirical evidence exists quantifying their effects and supporting their practices. In this brief, we report the state of the scientific literature on Animal-Assisted Intervention for trauma, highlight the commonly reported outcomes of this practice, and provide recommendations for future research.

State of Current Knowledge

Posttraumatic Stress Disorder (PTSD) is an anxiety disorder that is characterized by intrusion symptoms (e.g. flash-backs, nightmares), avoidance of stimuli that may bring back traumatic memories, negative alterations in cognition and mood, and increased arousal and reactivity (American Psychiatric Association, 2013). PTSD can develop after traumatic events, such as serving in wars, witnessing violence, or being a victim of abuse. Approximately 7.8% of the United States population is affected by PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and suffering from PTSD can lead to substantial work and social impairments (e.g. Hidalgo & Davidson, 2000). Understanding the impact and efficacy of different treatments is important to developing management strategies for individuals who have experienced trauma as well as caregivers.

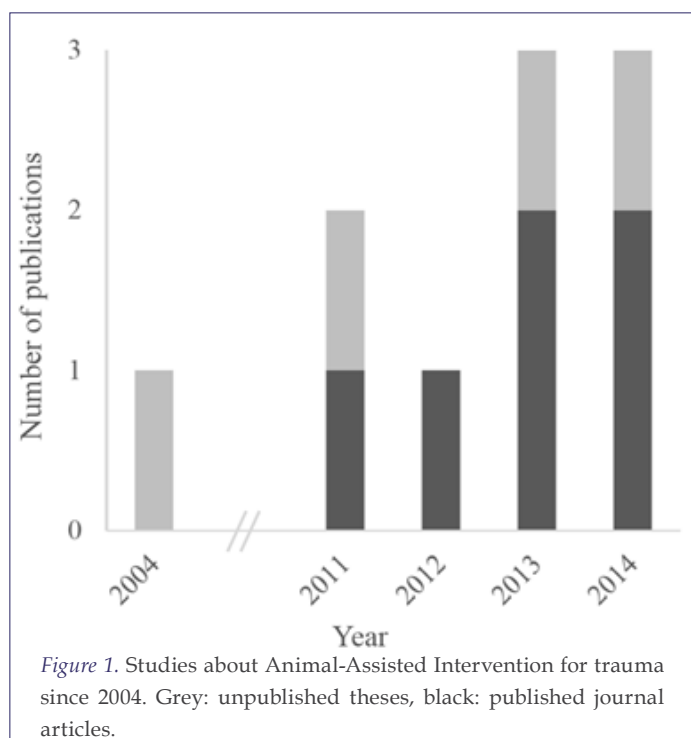
STANDARD PTSD TREATMENTS

PTSD is a difficult disorder to treat, particularly when dropout and nonresponse rates reach up to 50% in studies of treatments supported by research (Schottenbauer, Glass, Arnkoff, Tendick, & Gray, 2008).

The most common and effective psychological therapies include Cognitive Behavioral Therapy and Eye Movement Desensitization and Reprocessing (for a systematic review, see Bisson, Roberts, Andrew, Cooper, & Lewis, 2013). Both these treatments are based on managing the resurgence of traumatic memories. One type of Cognitive Behavioral Therapy, called Exposure Therapy, is not commonly undertaken by therapists because of the perceived level of difficulty and discomfort to patients (e.g. Becker, Zayfert, & Anderson, 2004). Therefore, discovering and evaluating alternative and complementary therapies has been deemed imperative (Bomyea & Lang, 2012; Cukor, Spitalnick, Difede, Rizzo, & Rothbaum, 2009), and this is where Animal-Assisted Intervention may be a successful alternative.

ANIMAL-ASSISTED INTERVENTION (AAI)

The term Animal-Assisted Intervention is broadly defined as “any intervention that includes an animal as part of the process” (Kruger & Serpell, 2010). Animal-Assisted Intervention serves as an umbrella term that encompasses targeted therapeutic interventions with animals (Animal-Assisted Therapy), less structured enrichment activities with animals (Animal-Assisted Activities), and the provision of trained animals to assist with daily life activities (Service or Assistance Animals).

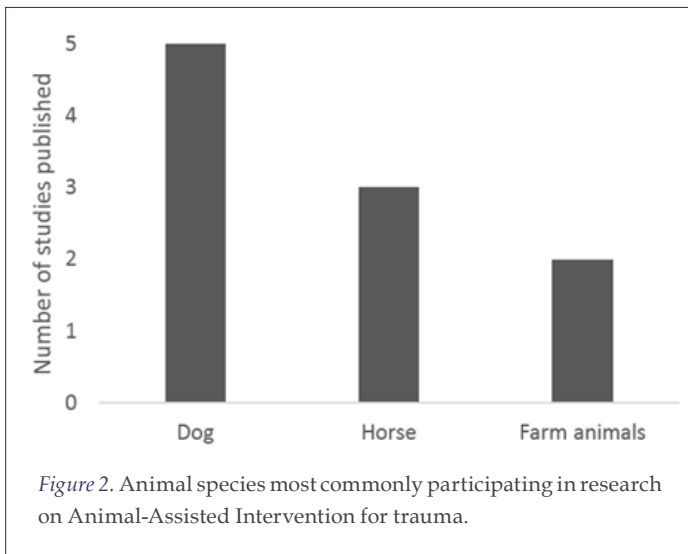


A recent review of the literature on Animal-Assisted Intervention for trauma identified inconsistent terminology across research efforts (O’Haire, Guérin, & Kirkham, Under review). Seven different terms were used to describe Animal-Assisted Intervention across ten studies. The most common term was Animal-Assisted Therapy, but up to six other different terms were used (i.e. Canine-Assisted Therapy, Dog-Assisted Therapy, Equine-Facilitated Therapy, Equine-Facilitated Psychotherapy, Natural Horsemanship, and Psychiatric Service Dog). These types of terminology inconsistencies can create confusion among service providers and the general public as they navigate services for individuals who have experienced trauma. Therefore emphasizing the use of consistent terminology by researchers and practitioners is paramount to the long-term efficacy of these programs.

Anecdotal and qualitative reports have indicated that there are numerous potential benefits of Animal-Assisted Intervention for individuals who have experienced trauma. Examples include increased feelings of comfort (Yount, Ritchie, St. Laurent, Chumley, & Olmert, 2013), and reduced feelings of loneliness (e.g. Banks & Banks, 2002) and hyperarousal (e.g. Barker, Pandurangi, & Best, 2003). Interacting with animals has also been shown to facilitate social interactions (e.g. McNicholas & Collis, 2000; Wood, Giles-Corti, & Bulsara, 2005), provide opportunities for mindful experiences in the present (Parish-Plass, 2008), and stimulate overall positive emotions (e.g. Marr et al., 2000; O’Haire, McKenzie, Beck, & Slaughter, 2013).

Beyond anecdotal literature, several factors suggest that Animal-Assisted Intervention may be an effective complementary treatment for trauma. Interacting with an animal has been linked to reductions in indicators of stress in humans, including lower salivary cortisol and blood pressure (Friedmann & Son, 2009), demonstrating that physical interaction with another species can impact human physiological stress responses. This body of evidence suggests that Animal-Assisted Intervention may be a successful complementary approach in addressing the psychological challenges associated with PTSD.

Yet despite the theoretical promise of Animal-Assisted Intervention to mitigate the symptoms associated with trauma, and its popularization through anecdotal media (Taylor, Edwards, & Pooley, 2013), the latest review of the research described a non-unified and nascent field of research, with sparse empirical evidence to support its effectiveness (O’Haire et al., Under review) (Figure 1).



Clearly defining the state of the scientific literature on Animal-Assisted Intervention for trauma is imperative to furthering this arena of research and practice. In the following sections, we will review the research on activities and outcomes from Animal-Assisted Intervention, categorized by the most commonly included species (Figure 2).

AAI WITH DOGS

Dogs are the most commonly included species in Animal-Assisted Intervention for trauma. Animal-Assisted Intervention with dogs has been identified in the literature as Canine-Assisted Therapy or Dog-Assisted Therapy. During Animal-Assisted Intervention, dogs are usually accompanied by their handler. Service dogs are defined by the Americans with Disabilities Act as dogs individually trained to do work or perform tasks for people with disabilities, so for a person with PTSD, they could help calm their handler during an anxiety attack. A growing number of organizations provide dogs as service or assistance animals to people suffering from PTSD.

ACTIVITIES

Research on Animal-Assisted Intervention with dogs has primarily focused on Service Animals for war veterans and Animal-Assisted Therapy for children and adolescents who have witnessed violence or were physically or sexually abused. Dogs have been included in Animal-Assisted Therapy for trauma as the main focus of a recovery program (Hamama et al., 2011), or incorporated in a traditional clinical setting

as facilitators of the interaction between the therapist and the client, in individual (Murrow, 2013) and group therapy (Dietz, Davis, & Pennings, 2012). Activities with dogs included petting or going on a walk with the dog to reduce arousal, talking to the dog about the traumatic events that occurred in the patient’s past, or listening to a therapeutic story about the dog.

OUTCOMES

Outcomes of Animal-Assisted Intervention with dogs for trauma have been reported with respect to PTSD symptoms and common comorbid disorders, as well as other indicators of quality of life. Studies on Animal-Assisted Therapy have reported decreased PTSD symptoms (Dietz et al., 2012; Hamama et al., 2011), and reduced depression (Dietz et al., 2012; Hamama et al., 2011), anxiety, and dissociation symptoms (Dietz et al., 2012). These results were enhanced when the dog had a clear purpose in the intervention, for example if it was integrated in a therapeutic story (Dietz et al., 2012). One study also recorded increased approach behaviors toward the dog over the course of the program, indicating a growing relationship between the children and the dog (Murrow, 2013). Two studies did not report changes in specific areas of interest, including socio-emotional competencies (Murrow, 2013) and subjective well-being (Hamama et al., 2011) following Animal-Assisted Therapy with dogs.

Only one study has been conducted on Service Animals for trauma. In a series of interviews, war veterans who had service dogs reported improved sleep quality, reduced social anxiety, and taking less medication after they had received their dog (Newton, 2014). The main drawback listed by these participants was that there were some difficulties associated with public access for their dogs, since there may be a lack of public awareness about the purpose and importance of service animals for veterans and trauma survivors.

Dogs have also been reported to have a positive effect similar to that of a human partner on perceived stress during a controlled traumatic situation (Lass-Hennemann, Peyk, Streb, Holz, & Michael, 2014). This could point to Animal-Assisted Intervention with dogs as a means to reduce stress in the aftermath of traumatic events.

AAI WITH HORSES

Horses have been included in Animal-Assisted Intervention for survivors of child abuse and war veterans. The inclusion of horses in Animal-Assisted Intervention for trauma varies in format and terminology. The terms used to designate Animal-Assisted Intervention with horses in research have included Equine-Facilitated Therapy and Equine-Facilitated Psychotherapy, as well as words to describe the activities with horses as Basic Horsemanship and Natural Horsemanship.

ACTIVITIES

Activities with horses can consist of ground-based activities, mounted activities, or a combination of the two. Examples of ground-based activities include the provision of education about horses, grooming horses, observing horse behavior, and using body language to direct the horse around a pen. Mounted activities are less common and generally include basic riding exercises, such as directing the horse at a slow pace.

OUTCOMES

In research on Animal-Assisted Intervention with horses, the main outcomes include reductions in PTSD symptoms (Kemp, Signal, Botros, Taylor, & Prentice, 2013; McCullough, 2011; Nevins, Finch, Hickling, & Barnett, 2013) and in depression (Kemp et al., 2013; Nevins et al., 2013). Studies with survivors of child abuse also described decreases in dissociation symptoms and anxiety (Kemp et al., 2013), as well as a strengthened human-animal bond (McCullough, 2011). Preliminary results with war veterans identified positive, long-lasting effects of Animal-Assisted Intervention, such as increased happiness, social support and better sleep quality. These positive benefits were observed to have continued efficacy up to six months after engaging in a four-day Animal-Assisted Intervention program (Nevins et al., 2013). Despite positive changes reported for PTSD, it is important to note that a recent review paper has challenged the efficacy of Animal-Assisted Intervention with horses more broadly due to threats to the validity of many study designs (Anestis, Anestis, Zawilinski, Hopkins, & Lilienfeld, 2014). Further studies on this topic should focus on addressing the shortcomings noted in this paper.

AAI WITH FARM ANIMALS

Research has also been conducted on Animal-Assisted Intervention with farm animals. In these programs, children with a history of abuse visited a farm where

they had the opportunity to interact with a variety of animal species, such as rabbits, pigs, chickens, and lambs in addition to the more traditional Animal-Assisted Intervention species of dogs and horses (Balluerka, Muela, Amiano, & Caldentey, 2014; Woolley, 2004).

ACTIVITIES

Due to the diversity of species present on farms, the interactions with the animals were varied and not standardized. For example, children could either choose an animal to interact with preferentially (Balluerka et al., 2014), or they could switch the animal they were interacting with between and during sessions (Woolley, 2004). Activities included petting, training, or talking to the animals.

OUTCOMES

The outcomes reported for children who participated in Animal-Assisted Intervention with farm animals included short-term reductions in depression and anxiety (Woolley, 2004), and increased attachment security to relatives (Balluerka et al., 2014). However, no changes were recorded with respect to PTSD symptoms or global functioning (Balluerka et al., 2014; Woolley, 2004).

Taken together, there is a promising body of initial research on the effects of Animal-Assisted Intervention for trauma. However, given the preliminary nature of many of the studies as well as the varied populations and outcomes, it is essential to follow up with further research.

Areas for Future Investigation

PTSD symptoms (Kemp, Signal, Botros, Taylor, & Prentice, 2013; McCullough, 2011; Nevins, Finch, Hickling, & Barnett, 2013) and in depression (Kemp et al., 2013; Nevins et al., 2013). Studies with survivors of child abuse also described decreases in dissociation symptoms and anxiety (Kemp et al., 2013), as well as a strengthened human-animal bond (McCullough, 2011). Preliminary results with war veterans identified positive, long-lasting effects of Animal-Assisted Intervention, such as increased happiness, social support and better sleep quality. These positive benefits were observed to have continued efficacy up to six months after engaging in a four-day Animal-Assisted Intervention program (Nevins et al., 2013). Despite positive changes reported for PTSD, it is important to note that a recent review paper has challenged the efficacy of Animal-

Assisted Intervention with horses more broadly due to threats to the validity of many study designs (Anestis, Anestis, Zawilinski, Hopkins, & Lilienfeld, 2014). Further studies on this topic should focus on addressing the shortcomings noted in this paper.

TECHNIQUE REFINEMENT

With respect to the techniques and protocols, there was often not enough detail presented to allow for replication (either in research or clinical practice). Providing detailed procedures is essential to enable independent research teams to build a coherent, ongoing body of research that validates the efficacy of the programs. Publishing manuals for widespread use is also critical to enable practitioners to implement any programs that are demonstrated to be effective through research.

Future investigators should use measurement instruments designed to increase the replicability of studies and the reliability of their results. Small scale studies will be required as a first step in PTSD treatment research to document the feasibility, safety, and potential benefits of these treatments (Rosenberg, Jankowski, Fortuna, Rosenberg, & Mueser, 2011). There is limited, if any research, which directly addresses these outcomes. Next, the development of manualized, replicable protocols will be needed to enable evaluation of generalizability in research and consistent implementation in community practice (Cukor et al., 2009).

Treatment manuals are a critical component of establishing evidence-based interventions (Foa, Cashman, Jaycox, & Perry, 1997), and should be developed along with fidelity checklists to assess treatment integrity. The efficacy of such standardized procedures can subsequently be tested against control conditions in randomized clinical trials. A standard of care control condition is essential to establish whether or how Animal-Assisted Intervention can add value to existing approaches. Follow-up studies may then compare Animal-Assisted Intervention to other treatments to disentangle the effects of the animal from other factors such as participating in a new treatment, meeting with a friendly interventionist, or other non-animal components of the intervention. The challenge for future Animal-Assisted Intervention research will be to identify suitable controls to specifically investigate these factors.

RISK OF BIAS

The methodology employed for assessing the impact of Animal-Assisted Intervention for trauma can easily

suffer from bias. Many of the research efforts have used informant report measures from parents or participants. These are critical to capture individual perceptions related to depression, anxiety, and quality of life. However, parents reporting on their children may want to see an effect, and perceive one when it may or may not be present. Researchers who are invested in their hypotheses may be more likely to report changes than independent raters. It is important in future studies to combine informant reports with potentially less biased outcome measures such as blinded behavioral observation or physiological assessment to capture a holistic picture of possible outcomes. For example, in addition to asking a participant about nightmares and sleep quality, telemetric monitoring devices could be worn at night to track sleep patterns and arousal.

Another potential risk of bias occurs when the research team is personally involved in the Animal-Assisted Intervention program, such as an animal handler or treatment facility manager. Such conflicts of interest emphasize the larger problem of researcher expectancy bias in Human-Animal Interaction studies (Herzog, 2011). In some cases, the credibility of the findings can be increased if the research team and service providers are independent. In situations where this is not feasible or would hinder study productivity, it is important to develop studies with controls in place for potential biases, such as blinding the researchers or program personnel from participant conditions or collecting blinded observational data or physiological assessments. The field of Human-Animal Interaction research is filled with unique challenges and nuances that require creative and attentive researchers to build a coherent and reliable body of research.

TYPE OF TRAUMA

The existing literature primarily reports the outcomes of Animal-Assisted Intervention for victims of childhood trauma such as abuse or domestic violence. Little research has been conducted on the impact of Animal-Assisted Intervention for war trauma. In studies examining the impact of Animal-Assisted Intervention for trauma, the specific origin of the participant's trauma is often not reported, and the grouping of individuals with different sources of trauma may limit the specificity of the findings. Future studies should carefully report the type of trauma the participants experienced as well as their demographic

information to better identify which groups would benefit most from Animal-Assisted Intervention. It is possible that survivors of different types of trauma may benefit from different forms of Animal-Assisted Intervention. Further research is necessary to better understand how different subgroups respond so that programs can be tailored for maximal efficacy.

ANIMAL WELFARE

The critical component of any Animal-Assisted Intervention is the inclusion of the animal. However, little research has been conducted to investigate the impact of Animal-Assisted Intervention on animal welfare. We suspect that a high level of animal welfare is necessary to achieve positive outcomes for practical, safety, and ethical reasons. If the animal is in a stressful situation, or is uncomfortable while engaged in the Animal-Assisted Intervention, then the animal may act unexpectedly, fearfully, or aggressively, thus increasing the possibility of injury and harm to the animal and the participant. Furthermore, Animal-Assisted Intervention should not be conducted at the expense of the animal's well-being. The human should not place the animal in a situation that would cause suffering and harm. Therefore, understanding the natural history, behavior, and biology of the animal is critical to ensuring they are engaged in a way that is complementary to their needs while facilitating the healing of the human. Documenting the standard of care provided to the animals is critical to ensure consistent replication as well as to highlight animal care as an important component of a successful and ethical Animal-Assisted Intervention program.

Conclusion

Animal-Assisted Intervention for trauma is popular but at present limited in research and practice due to a small empirical base. Preliminary findings are encouraging and suggest that participating in Animal-Assisted Intervention can provide at least short term, positive outcomes related to reduced PTSD symptoms, depression, and anxiety. Further, in-depth investigation of Animal-Assisted Intervention for trauma will enable a better understanding of how, when, and for whom it is beneficial.

Key Resources

Dietz, T. J., Davis, D., & Pennings, J. (2012). Evaluating animal-assisted therapy in group treatment for child sexual abuse. *Journal of child sexual abuse, 21*(6), 665-683.

This empirical study investigates the outcomes of different forms of Animal-Assisted Intervention for 153 survivors of child sexual abuse. The inclusion of a dog in a group therapy program was associated with reduced depression, anxiety and PTSD symptoms, and these positive effects were increased when the dog was included in a therapeutic story. These findings underline the importance of manualizing and evaluating different protocols in order to understand the mechanisms and maximize the benefits of Animal-Assisted Intervention for trauma.

O'Haire, M. E., Guérin, N.G., & Kirkham, A. C. (In Press). Animal-assisted intervention for trauma: A systematic literature review. *Frontiers in Psychology*.

This systematic review paper collates all published, empirical literature on Animal-Assisted Intervention for trauma through December 2014. Ten studies were reviewed to achieve three key aims: (1) describe the characteristics of interventions with animals for trauma, (2) critically evaluate the research design and methods, and (3) summarize the reported outcomes. Results of the review show that the presentation of the interventions was highly variable, with little consistency across studies. The most commonly reported outcomes were ameliorations of depression, anxiety and PTSD symptoms. Strategic recommendations are provided for further investigation in this area.

Parish-Plass, N. (2008). Animal-assisted therapy with children suffering from insecure attachment due to abuse and neglect: A method to lower the risk of intergenerational transmission of abuse? *Clinical Child Psychology and Psychiatry, 13*(7), 7-31.

This article explores the theoretical framework of Animal-Assisted Therapy for children who have suffered severe abuse and/or neglect. It summarizes the key priorities in treating traumatized children as well as how Animal-Assisted Therapy can address these issues in a play therapy setting. A number of clinical cases are described.

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