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Use of Animal-Assisted Therapy on Veterans with Combat-related PTSD

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Use of Animal-Assisted Therapy on Veterans with Combat-related PTSD

by

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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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The 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 a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

Abstract

The purpose of this paper was to determine whether animal-assisted therapy is effective in treating combat veterans with post-traumatic stress disorder. While the intent was to discover the efficacy of animal-assisted therapy, articles which discussed only the use of psychiatric service dogs were found in the final search. This review highlighted an area for further clarification in future research to ensure that the distinction is made clear between psychiatric service dogs and animal-assisted therapy. The findings illustrated that, when the veterans began to feel benefits of the human-animal bond with their dogs, their psychiatric symptoms became more manageable. A reduction in symptoms enabled the veterans in the studies to feel more comfortable engaging with their communities and participate in outreach efforts. Finally, the combination of a strong bond, manageable symptoms, and community participation lead the veterans to express the hope that they would continue to improve through the partnership with their psychiatric service dog.

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Human-animal Interaction (HAI) and the study of its implications and benefits is a growing field in Social Work. The benefits of HAI are evidenced by a reduction in cardiovascular symptoms such as stress, blood pressure, and cholesterol levels (O'Haire, 2010). Due to the reduction of stress, as O'Haire (2010) explains, humans are better able to remain in the moment in the presence of a beloved pet or therapy animal. Moreover, adults exhibiting symptoms of anxiety, depression, etc. can also benefit from HAI in a therapeutic setting (Casciotti & Zuckerman, 2015). Any person with a pet is considered to be part of an human-animal interaction; it is the concerted effort to use the benefits of HAI in a clinical manner to address specific mental health needs that create the shift from a simple relationship to a therapeutic relationship (American Veterinary Medical Association, 2017-b).

Animal-Assisted Therapy (AAT) is an intervention in which a specifically trained animal is used as part of a treatment method designed to improve cognitive, physical, emotional, or social functioning (American Veterinary Medical Association, 2017-a). This literature review will focus on the use of dogs, horses, and one robotic seal in animal-assisted therapy.

Animal-Assisted Therapy can be used in almost any environment where traditional treatments are also used. For example, many studies highlight AAT in prisons, with children, in hospitals, and working with people who have from Post-Traumatic Stress Disorder (PTSD), including military service members and veterans (Reichert, 1998; Yount, 2013). One such method which falls under the purview of animal-assisted therapy, Equine-Facilitated Therapy, has been shown to reduce symptoms of PTSD and help clients become better able to recognize

their triggers as described by Julie L. Earles, Laura L. Vernon and Jeanne P. Yetz (2013). These researchers suggest that AAT could help teach clients mindfulness and insight, which could then help decrease anxiety and symptoms of Post-Traumatic Stress Disorder. Horses respond to human body language, so having a veritable mirror of their emotions will allow the client to recognize and address their feelings of stress and anxiety (Earles et al., 2013).

Levels of AAT and Definitions

Animal-Assisted Therapy is a term which covers a variety of therapeutic types and interventions. It is based on which animal is used as well as the level of service this animal provides. Hippotherapy, Emotional Support animals, and Guide animals will not be considered part of the term Animal-Assisted Therapy for the purpose of this literature review as they are not trained to address the needs of Veterans who have Post-Traumatic Stress Disorder (PTSD). Psychiatric service dogs, which are used to mitigate the symptoms of PTSD, will be considered part of Animal-Assisted therapy for the purpose of this paper. However, it must be noted that psychiatric service dogs do not traditionally fall under animal-assisted therapy as they are trained to address psychiatric symptoms rather than be used as a subject or object of therapy. See Table 1 for full definitions of the types of therapeutic treatments involving animals.

Why veterans. According to statistics gathered by the Veterans Affairs office, veterans and service members made up about 7.4% of the population in 2015 (US Department of Veterans Affairs, 2015). As a small portion of the US population, veterans remain underserved by the mental health community. Strom, et al. (2012) note that veterans' access to mental health care is

limited due to their health care coverage as well as a strong stigma against help-seeking (Strom, Gavian, Possis, Loughlin, Bui, Linardatos, Leskela, & Siegel, 2012). Military culture teaches recruits to be self-sufficient as much as possible and to rely on their brothers and sisters when needed (Strom, et al., 2012). Moreover, Strom et al. (2012) note that the military is often a very self-contained community and admitting that one needs help is sometimes viewed as a weakness. Moreover, traditional forms of "talk therapy" are unlikely to inspire veterans to continue services partially due to the stigma surrounding mental health care in the military population (Marston, 2015). Animals are viewed as non-judgmental partners in the process, so many veterans do not feel self-conscious and are more able to express their feelings (Ferruolo, 2016). With their animal partner, they return to a symbiotic relationship that requires both parties to be present and accountable, a relationship similar to the one they experienced in the military.

Post-traumatic stress disorder. This disorder occurs in response to stress such as witnessing death, experiencing near death situations, witnessing injuries, experiencing injuries, actual or threatened violence (e.g., physical or sexual violence) learning about the trauma that a loved one has experienced, or indirect exposure to trauma (Stern, et al., 2013). A PTSD diagnosis requires the experiencing of the following for at least one month: at least one re-experiencing symptom such as flashbacks or nightmares; at least one avoidance symptom such as staying away from places which remind a person of the event; no less than two arousal and reactivity symptoms such as difficulty sleeping or angry outbursts; at least two cognition and mood symptoms such as loss of interest, feeling guilt, or memory issues (American Psychiatric

Association, 2013). Combat veterans tend to experience hypervigilance (taking in as much of the environment as possible to screen for potential threats to safety), avoiding loved ones and strangers, isolation to avoid triggers, irritability, and flashbacks (Moore, 2013, p. 53).

Military Culture. The military is an insular culture, and help-seeking is not explicitly encouraged (Strom, et al., 2012). Furthermore, service members are encouraged to be selfless, a good team member, value shared goals, and be of service to others above all personal needs. One might see how admitting to having a mental illness and asking for help could be difficult for a veteran to do as it goes against many of their personal values (Strom, et al., 2012). Moreover, there is still a stigma against seeking mental health care, which is why AAT is such an important treatment modality because it can sidestep the stigma against accessing mental health care (Marston, 2015). It also encourages veterans to identify with the military's core values by fostering a partnership between the therapy animal and the veteran (Hyde, 2016).

Key Terms Used in Literature Review

Veteran: Any person, male or female, who served in the United States Armed Forces (Navy, Marine Corps, Army, Air Force, and Coast Guard) at least one day.

Combat veteran: Any veteran who served in live fire situations, who were support workers in a war zone, or who were either seriously injured or witnessed serious injuries or near-death experiences.

Combat-related PTSD: PTSD which results from experience in combat settings such as live fire situations or support workers in a war zone, serious injury or nearly being seriously injured, witnessing death or having near-death experiences.

Non-Combat-Related PTSD: PTSD which does not result from combat, but can result from witnessing death, near death, actual serious injury or threatened serious injury, actual or threatened sexual violence.

Criterion A traumatic event: Found in the DSM-V, a Criterion A traumatic event must result from one of the following: direct exposure, witnessing the event, learning that a relative/friend was exposed to a trauma, or indirect exposure to trauma in the course of professional duties (e.g., first responders and medics).

PTSD Checklist: A self-reported assessment tool which assesses the 20 symptoms as written in the DSM-V to monitor symptom changes during and after treatment, to screen for PTSD, and is used to make a provisional diagnosis. Scored from 0-80; 31 or higher indicates some level of PTSD.

Reintegration: The act of leaving the military by retiring or discharge and re-joining life as a civilian who is no longer associated with the military or subject to its rules and regulations.

Mindfulness Techniques: Techniques which bring attention to internal and external stimulus which is occurring in the moment.

Motivational Interviewing: An evidence-based treatment which is used to help clients identify areas of resistance and to motivate themselves to change. PTSD often reduces clients' ability to find the motivation to make needed changes.

Clear a room: In Canine therapy, a dog will "clear a room" much as a Veteran was taught to clear a room when in combat situations. It is the act of entering a room and assessing the threat level. For PTSD Veterans, having a dog enter a room to check for perceived threats helps reduce anxiety.

Operation Iraqi Freedom (OIF): Occurred between 2003 and 2010. It was initiated by former President George W. Bush to remove Saddam Hussein, then leader of Iraq, and to eliminate his ability to create "Weapons of Mass Destruction." Combat forces were withdrawn in 2010.

Operation Enduring Freedom (OEF): Initially as a response to the events on September 11, 2001, this term refers to the presence of US troops in Afghanistan from 2001 continuing into the present.

Operation New Dawn (OND): Initiated in 2010 to replace OIF, it is defined as the continuing operation to stabilize Iraq.

Zoonosis: A disease or illness which can be transmitted from animals to humans.

Literature Review

Equine Facilitated Therapy

Equine Facilitated Therapy (EFT), sometimes referred to as Equine Assisted Therapy, has been known to increase feelings of confidence, self-efficacy, trust and improved social skills that clients can transfer to their daily lives. One way to take advantage of the benefits of EFT lies in addressing treatment that involves mindfulness techniques. Earles, Vernon, and Yetz (2013) suggested that EFT could help teach clients mindfulness and insight to help decrease anxiety and symptoms of PTSD as horses respond to human body language, they act as an external indicator of emotions that will help clients to recognize and address their feelings of stress and anxiety.

Reports of increased mindfulness are frequent in equine facilitated therapy studies. In a study by Katy Schroeder and Daniel Stroud (2015), four survivors of interpersonal violence participated in mindfulness exercised to increase self-esteem, confidence and establishing personal boundaries. In this interaction, horses acted as a nonverbal subject in the therapy allowing the participants to reappraise their past trauma and find a sense of control over learned reactions (Schroeder & Stroud, 2015). A study by Signal, Taylor, Botros, Prentice, and Lazarus (2013) discussed how clients could regain power during interactions with horses, "Having a large, powerful horse respond to commands in a calm and favorable manner can provide abuse victims with a sense of authority and validation" (Signal, et al., 2013).

Furthermore, Signal, et al. (2013) found that the younger participants were most open to EFT, which supports existing research that EFT is effective in populations such as young

children as their linguistic and cognitive skills are different than traditional therapy patients.

Veterans' participation in equine facilitated therapy.

Combat veterans who experience trauma also often have different cognitive responses to treatment due to the ways in which stress affects them. Combat veterans diagnosed with PTSD experience hyperarousal, nightmares, flashbacks, trouble concentrating, easily irritated or angered, feeling mistrust, feeling on guard, difficulty sleeping (American Psychiatric Association, 2013). Additionally, veterans are traditionally resistant to talk therapy and seem to favor a more active style of intervention which puts them in perceived control (Ferruolo, 2016). Researcher David M. Ferruolo (2016) writes that Equine Facilitated Mental Health (EFMH) may be an effective way to treat symptoms of non-combat-related PTSD, depression and anxiety as well as help with reintegration issues if used in conjunction with research-based frameworks. The pilot study consisted of 7 white male veterans who were being treated at a VA facility for anxiety and depressive disorders. The one-day and two-day retreats, outlined by Ferruolo (2016), sought to discover whether EFT would be equally useful for combat veterans. Through a series of treatment modalities such as cognitive behavioral therapy, motivational interviewing, and mindfulness-based stress reduction, the researchers found that a combination of EFT and therapeutic frameworks were useful for the combat veterans who participated in the study (Ferruolo, 2016). Specifically, Ferruolo (2016) noted that the participants reported feeling a greater ability to trust, a spiritual connection to the horses, learning about themselves, and learning about respecting others and their unique worldview.

During one exercise, a participant was instructed to lead the horse, described as his "teacher," to illustrate the idea that the participants' affect can be contagious (Ferruolo, 2016). For example, when the participant tried to pull the horse in a vain attempt to lead it forward, the horse refused. In response, the participant squared himself to the horse and growled in the horse's face to intimidate it (Ferruolo, 2016). The horse refused, and the participant threw the line. Through the use of Cognitive Behavioral Therapy, Motivational Interviewing, and mindfulness, the participant was able to reflect on his experience and learned that he used intimidation tactics to motivate others and that they were not effective. This treatment allowed the participant to view a direct result of behavior that was no longer serving him (Ferruolo, 2016).

Another participant was asked to ride a horse backward and envision himself leaving behind parts of him that he no longer needed. At the end of the session, the participant reported that it was the first time he felt like a person and not a sergeant (Ferruolo, 2016). The results in this study mirror studies done by other researchers in different populations such as Schroeder and Stroud's (2013) study where victims of interpersonal violence were able to use the human-animal relationship to regain control over their identity.

Canine Assisted Therapy

Dogs have a similar benefit as compared to horses in that they provide clients with a way to view the world using the dog's perspective and see how their behavior might affect another person. By using a narrative-style method that draws from an ecological standpoint, several studies found that clients were able to project their feelings onto a therapy dog have Post-

Traumatic Stress Disorder work through them objectively (Evans & Gray, 2011; Jaspersen, 2010; Reichert, 1998). In a group of survivors of child sexual trauma (CST), the therapy dog was used as the subject of a story in which he was hurt by someone else (Reichert, 1998). As the story progressed, Reichert (1998) explained how the dog would disclose how he was hurt and, in the end, the dog learned that he was safe even after telling someone. By using a story to model a healthy interaction, the children in the study were better able to understand that they would be safe even after disclosing their personal stories (Evans & Gray, 2011). Five adult female residents of a Utah State Prison mental health inpatient program worked with a therapy dog in another pilot study to learn social and coping skills (Jaspersen, 2010). The inmates were asked to try to teach the dog a new trick and once the exercise was over, the facilitator asked the inmates to reflect on how frustrating it can be to learn new things like coping skills (Jaspersen, 2010). All but one of the inmates reported learning new skills after the eight-week session ended.

Veterans' participation in canine-assisted therapy. In a study by S. L. Stern et al. (2013), 30 veterans with PTSD symptoms were asked to complete six questionnaires which measured symptoms of depression and PTSD as well as their knowledge of canine care and behavior and the participants' attachment to their pets. The researchers noted that the participants reported feeling calmer around people with reduced instances of irritability, depression, and anxiety since they assumed responsibility and care of their pet dog (Stern, et al., 2013). However, this study was limited to veterans and their pets as companions. Though valuable in its support of the benefits of the human-animal bond, animal-assisted therapy as a treatment modality requires

more structure than this study provided.

Veterans experiencing symptoms of PTSD such as hyperarousal, persistent avoidance of stimuli associated with the traumatic event, and re-experiencing symptoms related to the trauma tend to withdraw from social situations, preferring to isolate themselves away from friends, family and the community (Stern et al., 2013). Due to their avoidance of humans, veterans with PTSD may benefit from a canine companion that will, with the help of primary treatment modalities, allow them to reintegrate into society. Gennifer Furst (2016) writes in her review of prison programs geared toward training shelter dogs to become therapeutic service animals for veterans with PTSD that "...veterans who are trained to be self-reliant and resilient, having a sense of control over their treatment can make the partnership with a dog especially effective." Because the trauma that many veterans experienced was caused by other humans, they may be hesitant to participate in person-to-person therapy (Furst, 2016). Dogs may be a way for veterans to learn coping skills without fear of judgment by other people. Research has also shown that veterans who are tasked with training service dogs for other veterans as part of their therapy are more likely to accept treatment as they understand that their work with the dog will help another veteran in need (Carper, et al., 2016).

From a social justice standpoint, prison training programs help incarcerated individuals learn new skills that they can take with them upon release as well as rescue shelter dogs who may otherwise be euthanized (Furst, 2016). In this way, these programs benefit the communities in which they are located. Furst (2016) notes that the benefits of these programs are threefold;

prisoners learn new job skills, animals are rescued and veterans receive therapeutic partners.

Alternative Animal-Assisted Therapy with Veterans

Researchers and practitioners have also moved beyond the scope of equine and canine therapy. Such studies have included work with robotic animals. Where it is not deemed medically safe to use living animals due to risk of zoonosis, allergies, bites, or other health and safety concerns, robotic animals are an emerging option (Lane et al., 2016). One hospital introduced Paro, a biofeedback device designed to look like a baby harp seal and to mimic the behavior of a living creature. Paro is considered a social robot, sometimes referred to as an interactive simulation robot, which is defined by the following actions: imitates real life, models behaviors typically seen in living mammals, provides verbal or nonverbal communication, and are perceived as part of the living world (Lane et al., 2016).

Lane, et al. (2016) designed a pilot study of 23 male geriatric patients in a VA hospital and found that Paro helped reduce behavioral and psychological symptoms of dementia as well as improved cognitive functioning. The patients in the VA hospital exhibited fewer negative behaviors just after spending time with Paro (Lane, et al., 2016). However, as with many studies looking into AAT, Lane, et al. (2016) came across limitations which included no control group and an inability to differentiate the benefits of the time spent with Paro and the attention given to patients by staff members who provided Paro to the patient.

Limitations to Animal-Assisted Therapy

Patients who have a history of animal abuse can, with strict supervision and care, benefit

from experiences with a therapy animal based on the research that AAT can promote empathy in participants (Reichert, 1998; Dietz, et al. 2011; Burgon, 2011). However, not everyone will benefit from AAT; some people don't like horses, or they might be allergic to dogs (Burgon, 2011; Evans & Gray, 2013). Others may be unable to participate due to physical or financial reasons; though some have determined that it may not be as expensive as it seems based on the expense of more traditional therapy (Burgon, 2011) and the availability of service animals in urban areas (Dietz et al., 2011).

All of the studies cited had limitations based on who was available to participate in the study and who was able to complete it. In two studies, the participants were chosen based on the severity of their symptoms that affected their abilities to develop social and coping skills (Burgon, 2011; Jaspersen, 2010). Earles et al. (2015) gathered their participants by referral, though each participant had to exhibit at least one traumatic event on the Life Events Checklist and score at least 31 on the PTSD Checklist-Specific. Each of the studies relied on self-reported findings, which could muddy the waters as far as empirical data goes. For example, response bias can be seen in respondents who are predisposed to be more positive or negative or in those who want to give socially desirable responses, regardless of how they felt (Monette, 2014, p. 362).

After the studies, none of the researchers were able to have follow-up interviews with the participants to measure how effective these therapies can be over time, especially after therapy is terminated. All studies cited call for more research into this field. Control groups, follow-up after the studies are terminated, precise definitions for the type of therapy, and larger sample sizes are

needed to determine how much AAT can add to traditional therapeutic methods (Earles et al., 2015).

Finally, further studies are needed to determine which treatment modalities are best used in conjunction with AAT. Ferruolo (2016) found that motivational interviewing, CBT and mindfulness techniques worked best for combat veterans. Signal et al. (2015) focused a great deal on completing horseback riding skills tasks and using pre and post intervention assessments to determine how well the treatment worked. Schroeder and Stroud (2016) used mindfulness-based techniques with their population to a good deal of success. The common factor in these studies is that each population experienced symptoms of PTSD in some form and that seems to be important when determining whether or not EFT is a suitable modality for a particular population. Horses can provide a sense of humility, strength, spirituality, and confidence in the people who choose to work around them (Jaspersen, 2010). Those traits are also found to be important for building self-esteem and establishing a positive sense of self-determination (Earles, et al., 2015).

The National Center for PTSD (2015) has expressed concern that the use of AAT with veterans is helping the veteran avoid exposure to stimuli which triggers PTSD symptoms. Empirically, evidence has shown that forms of Exposure Therapy are currently the most effective in treating PTSD. When a veteran has his therapy dog "clear the room" or provides a barrier between the veteran and the outside world, there are concerns that AAT is inhibiting progress (Carper, Teri, et al., 2016).

Limitations from a program management perspective include the challenge of allotting time and finances to implementing programs which seek to pair dogs and veterans for therapeutic purposes. Moreover, when governmental organizations such as the Veteran's Administration look into creating such programs, they have to rely on empirical evidence, of which there is currently a limited amount (Yount et al., 2013). In addition to a limited amount of proof, there are no set standards for how these service dogs should be trained and how to match the dogs to veterans. Moreover, veterans who are interested in taking advantage of AAT must seek it out on their own (Furst, 2016).

Ethical Considerations

Future studies into the ethical concerns and wellbeing of the animals could be beneficial because they are required to work with the client through sometimes very stressful sessions. Many current studies do not consider the ethical repercussions of using animals in therapeutic settings. For example, research is needed to determine how the animals, empathic as they have been found to be (Yorke et al. 2013, as cited by Earles et al., 2015), cope with the stressful environment of therapy. By utilizing the human-animal bond, researchers are addressing the benefits for humans, but few researchers took into account the benefits for the animals. Evans and Gray (2013) propose studies to measure the benefits and drawbacks for therapy animals to ensure a healthy environment for all parties involved. They go on to describe the fact that, in every therapeutic setting, there is an inherent power dynamic between therapist and client, and when you bring an animal into the equation, practitioners must not allow their personal biases to

cloud the nonverbal interchange between animal and client or animal and therapist. Just as professionals feel burned out, so do the animals. Due to such burnout, animals are better suited to different forms of AAT depending on their stage in life or development. Evans and Gray (2013) go on to discuss the idea that animals must be chosen based on their strengths just as much as based on the strength and ability of the clients.

Taylor, et al. (2016) make the compelling argument that the entire field of Social Work needs to make more effort to include animals in their ethical considerations, stating that social workers currently approach AAT from the humanist intellectual framework. That is, social workers have a tendency to focus on how the therapy affects human subjects only. They write that social workers who utilize the human-animal bond for purposes of therapy need to have a "willingness to understand animals as sentient beings with needs of their own, not just possessions or tools for humans to use" (Taylor, et al., 2016). It is this anthropocentrism, Taylor, et al. (2016) posits, that has prevented the concept of animal welfare to be incorporated into social work ethics of empathy and social justice. Animal social work ethics are not merely relevant to animal social work; a look at family systems will illustrate how household pets factor into family dynamics and research has shown that animals can have positive therapeutic benefits. Moreover, according to Risley-Curtiss (2010), there is growing evidence that violence against animals is linked to other forms of family dysfunction and abuse (Risley-Curtiss, 2010). Providing insight into how a client interacts with their pets can help a therapist note areas which require intervention.

Animal-Assisted Therapy is not a new treatment modality, and it has been used in a variety of populations, including those who have PTSD. However, studies which deal directly with the use of AAT with combat veterans tend to differ in their conclusions about the efficacy, long-term or otherwise. This inconclusiveness is often because many of the studies are pilot studies, include small numbers of subjects, and other treatments were used in conjunction with AAT. It is this writer's intent to design a systematic review to compile all available studies and determine in what ways AAT has been shown to work and highlight areas where AAT with this population can be further improved.

Methods

Research Purpose

The purpose of this paper was to answer the question: Is Animal-Assisted Therapy effective in treating veterans with combat-related PTSD? This paper also looked into several types of AAT including canine-assisted therapy, equine-assisted therapy, and the use of social robots. This researcher aimed to examine the different approaches to determine in what ways are they effective as well as what makes them potentially useful in treating combat-related PTSD in veterans. This study did not examine PTSD as a result of Military Sexual Trauma (MST). While it may have served to increase the gender equity in the studies reviewed, MST is an issue with serious implications and a dedicated review of its literature and treatments is required.

This review included studies that surveyed veterans from multiple theaters including Vietnam, Gulf War, Operation Iraqi Freedom, Operation Enduring Freedom and Operation New

Dawn. Both men and women subjects were included. However, a larger number of subjects were male due to the ratio of men versus women who experience combat situations in the military.

Theoretical Framework

Social support theory proposes that animals are a source of social support for humans. A lack of social interaction and social support leads to increasing psychological and physiological decline in humans (O'Haire, 2010). In Veterans, where social support may feel limited due to symptoms of PTSD such as isolation, animals can provide a nonjudgmental, unconditionally accepting presence in veterans' lives. Animals may also help facilitate socialization as the animal creates a common interest or common focal point from which to begin conversation between two people (O'Haire, 2010).

Types of Studies

Both qualitative and quantitative studies were considered to answer the question as to whether AAT is useful in treating combat veterans with PTSD. This writer chose not to include case studies, interviews, or other anecdotal sources due to the need to highlight empirical evidence in order to prove the efficacy of AAT as a viable treatment option and for the purpose of program development.

Search Strategy

In a search of academic journals including PsychINFO, SocINDEX, and PILOTS, one systematic literature review was found that addressed the use of AAT as an intervention for trauma, including PTSD. However, this writer chose to focus on combat-related PTSD and its

subsequent treatment using AAT interventions. To find as many articles as possible, the search was conducted using both general and specific keywords including military AND Animal-Assisted Therapy; veterans AND Animal-Assisted Therapy; PTSD AND Animal-Assisted Therapy; Veterans AND horses; veterans AND dogs; canine AND animal-assisted therapy; and equine AND animal-assisted therapy. Because there are many existing studies on animal-assisted interventions for other populations, choosing to combine search terms helped keep the search as specific as possible. Final inclusion of articles was predicated upon the subjects being combat veterans with PTSD symptoms.

Inclusion Criteria

Criteria for inclusion took into consideration articles which discussed the therapeutic use of an animal with combat veterans who had a diagnosis of PTSD.

Exclusion Criteria

Studies which targeted PTSD but whose populations were not veterans were not included. Participants in each study were inherently over the age of 18 due to age requirements for joining the United States Military. Furthermore, studies which studied veterans with PTSD but did not involve the therapeutic use of animals were not included. Of the 207 peer reviewed articles and journals that came up during the search, only five met the criteria to be analyzed for the purpose of this paper. Articles which were excluded were peer-reviewed pieces which did not involve a qualitative or quantitative study or studies which addressed therapeutic use of animals but whose population was not congruent with the purpose of this project.

Findings

Following a thorough review of available literature, five articles met the inclusion criteria including three qualitative, one quantitative, and one which used both qualitative and quantitative methods. In the qualitative studies, researchers focused on veterans from conflicts dating back to the Vietnam War. One qualitative article focused on veterans from Operation Iraqi Freedom/ Operation Enduring Freedom/Operation New Dawn. Nearly all participants were male, though gender selection was not intentional. In the qualitative article, the author chose to focus on veterans from any conflict and any gender. All participants were diagnosed with PTSD, but only a portion was diagnosed with combat-related PTSD. In the mixed-methods study which used qualitative and quantitative methods, veterans were all diagnosed with combat-related PTSD.

Of importance, while this researcher worked to find articles addressing the benefits of animal-assisted therapy using both horses and dogs, all of the articles focused specifically on the use of psychiatric service dogs with combat veterans diagnosed with PTSD. The difference between animal-assisted therapy and psychiatric service dogs is that the latter are used to mitigate the psychiatric symptoms of mental illness in the owner (Froling, 2009). Animal-assisted therapy animals are used to facilitate therapeutic interventions such as cognitive behavioral therapy, motivational interviewing, and to help illustrate techniques such as mirroring or reframing identities (Ferruolo, 2016; Earles, et al., 2013; Schroeder and Stroud, 2012; Evans and Gray, 2011). In some ways, the psychiatric service dogs and their owners featured by the studies were able to use their dogs to facilitate a reduction of anxiety which helped to increase

the benefits of other treatment modalities (Moore, 2013).

In two of the five articles reviewed, the terms animal-assisted therapy and psychiatric service animals were conflated, leading to further confusion of the boundaries between service dogs and animal-assisted therapy. Taylor, Edwards, & Pooley (2013, p. 595) defined animal assisted therapy as “any intervention that intentionally includes or incorporates animals as part of a therapeutic or ameliorative process or milieu.” Another author discussed the use of psychiatric service dogs as one modality which is encompassed by animal-assisted therapy (Moore, 2013). Clearly, the distinction between psychiatric service dogs and animal-assisted therapy is blurred by existing research and serves to explain why some of the veteran participants in the studies reviewed felt compelled to help educate their communities (Newton, 2003; Moore, 2013).

Once the available studies were reviewed, the findings highlighted a circular model in which the initial benefits of connections with psychiatric service dogs helped to reduce symptoms associated with PTSD. Subsequently, the reduction in symptoms and trust in their service dog lead the veteran owners to engage more freely with the larger community to the point that they felt the need to give back and participate in outreach to educate the public about what service dogs do and how they help. Finally, the bond, the decreased symptoms, the civic engagement all lead to an expression of hope that the veteran owners could continue to thrive in the community because their relationship with their service dog was strong.

Benefits of Bond with Psychiatric Service Dog

Participants mentioned feeling safe in the knowledge that they're able to trust their dog to

ensure their safety, to help them feel calm in a crowded area, and to help with emotion regulation. In a sense, these dogs became the participants' "battle buddies," a term mentioned separately in two of the five studies. While out in the field, service members are trained to go in pairs so they can look out for one another. One participant made the connection between his training and his relationship with his service dog, "In Iraq we were told: 'Never go anywhere without a battle buddy to watch your back.' That's exactly what he does for me" (Taylor, Edwards, & Pooley, 2013). Participants often nickname their service dogs "battle buddies" as they are often trained to notify their owners when a stranger approaches from behind. When someone walks near, the dog will alert their owners (Taylor, Edwards, & Pooley, 2013). This physical feedback helps to reduce the amount of hypervigilance that a veteran may feel. One participant spoke of the feeling of hypervigilance while in public spaces that many civilians would find nonthreatening:

When you're overseas, you're on a 360-degree awareness, which is a lot to take in. But you also have five other guys behind you doing the same thing, so you're not really worried about missing something. But when you're in Walmart by yourself and you don't have those five guys, you're really trying to concentrate on everything. You're at this heightened sense of awareness, and that is very tolling on the body. (Moore, 2013, p. 68)

Another participant noted how a veteran's dog helps create a physical boundary between her and the outside world, "Wherever Kim goes these days she knows that Spot has her back. He's the eyes in the back of her head. He's her 24-hour protector." (Taylor, Edwards, & Pooley, 2013, p.

600)

Some participants mentioned desiring structure upon returning from combat. Previously unable to create the structure for themselves, they found that the dog seemed to provide it for them:

Once you get back here [from war] life gets so complicated. You have 20 pairs of socks and multiple detergents to pick from to wash them and all these choices. The dog makes life simple. There are things you do and need to do and there are things you don't. (Hyde, 2016, p. 63)

The benefits of having a psychiatric service dog in their lives prove to be multifaceted. In addition to helping veteran owners with day-to-day tasks, the dogs are trained to keep a watchful eye over their owners even as they sleep. Newton (2003) described how the dogs are so attuned that they can respond to their sleeping owners as they experience nightmares:

"She's always close by at night. If I do have a bad spell—nightmares, you know—she'll move from wherever she's at, usually on my right side of the bed, she'll jump up on the bed, actually get right there next to me, [to] let me know that she's there and that I'm not there alone. I have a battle buddy, sort of." (2003, p. 36)

These dogs seemed to provide comfort and companionship even in the darkest hours of these veterans' lives.

Decrease in symptoms. Newton (2013) explained how having the dog helps with the physical aspects of anxiety by helping regulate heart rate as well as acting as a grounding presence. One participant talked about how the dog provides total support for him in all aspects

of his life and about how not having the dog would have led to overwhelming anxiety for him:

A service dog, to me, is what a prosthetic leg is to an amputee. Take a prosthetic leg away from an amputee, [and] everything goes to shit in a handbasket real quick. You take the psychiatric service dog away from me, and I don't leave my bedroom. (Newton, 2013, p. 32)

Newton (2013) described how one participant's dog helped her remain in-the-present and mindful of her body when she began to feel dysregulated. This participant, described that her dog would start to nudge her, thereby allowing her to reorient to time and place. The participant's dog was able to sense that her anxiety was beginning to escalate and then provide a physical presence to help her get “out of her head.” (Newton, 2013, p. 33)

These participants in each study reported many anxiety-inducing events occurring out of the home, but they also discussed how their dogs help them when they are alone at home. When their PTSD symptoms get to be overwhelming, some veterans begin to experience suicidal ideation and self-harm. One participant said:

It's hard. It's an everyday struggle, when I'm sitting on the floor wanting to cut myself. When I'm sitting on the floor wondering, how can I kill myself...I'm just staring at something and all of a sudden he comes up and starts licking my face.

Without prompting, this participant's dog was able to help this veteran refocus his attention to prevent further dysregulation. (Taylor, Edwards, & Pooley, 2013, p. 602)

Connection to Society

Many service members and veterans find it difficult to reintegrate back into civilian society once they return from deployment. Those with PTSD have yet more difficulty, dealing with symptoms such as avoidance and numbing because they feel they can no longer connect with their family and friends back home:

...it's extremely hard...to trust someone, to talk about it...There are very few people that have been through things as traumatic as I have been...It's realizing that you haven't thought of what I've thought, you haven't been where I've been. There is no blood on your hands. You haven't seen specific things, and smelled death...I don't think you can understand. (Moore, 2013, p. 54)

With help, some veterans are learning to connect with their dogs, which reestablishes the trust required to connect with other people (Newton, 2003). For example, one participant stated:

I think the most important thing I learned during the training process is that they're all processes that amplify the dog's natural ability to link with you on a different plane than you're used to. That's why they are man's best friend—because they have that ability to get into our psyche. (Newton, 2003, p. 41)

These service dogs, adept and responsive, can help repair a rupture caused by intense and traumatic experiences during wartime by subverting these veterans' normal social defenses. Also, some participants who have rescued service dogs, indicate a feeling of camaraderie based on a shared traumatic past (Moore, 2013).

Even more, participants were able to address their isolative behaviors, finding that their

dog's companionship helped them connect with people in a positive way (Moore, 2013). One participant described how having his dog with him causes more people to approach him to talk about the dog. He said:

...I'm forced to interact with people, which I hate. However, that negative is really a positive because...that's a really good thing for me to be doing. To realize that all people are not bad. All people are not out to hurt me, and most people can be good, you know. I don't hear the gripes...or their views of life and government, and policy and politics. I just hear that they grew up with two chocolate labs that lasted 16 years...you know, good things, happy thoughts. (Moore, 2013, p. 62)

Still, other participants endorsed that their dog helped them feel understood and allowed them to reach out to friends and family "If I didn't have the dog I would have gotten divorced, I'm sure, or worse, suicide" (Hyde, 2016, p. 59). In a study by Newton, (2003), a participant related his positive interactions with his service dog to be able to reach out and repair relationships with his wife and children:

I've lost some folks overseas, and I've dealt with fear and guilt and self-blame, and as a result of that fear I've dealt with separation and just not being close to the ones who matter to me most. What Missy has done... it's helped me directly and indirectly reach out to my wife and children, so that's helped the relationship. (Newton, 2003, p. 42)

Having a psychiatric service dog has been shown to help facilitate general social interactions, but it has also highlighted areas in which the public and veterans with service dogs differ (Moore,

2013; Newton, 2003). Both due to the public's misunderstanding of the role of a psychiatric service dog as well as the amount of time it can take to successfully train both dog and owner to maximize the benefits of psychiatric service dog ownership. The extensive training and time that both organizations and owners take lead many veterans to want to give back to the system and help other veterans (Newton, 2003). As the standards are so high yet public visibility surrounding the differences between guide dogs and psychiatric service dogs is cloudy at best, many of the studies' participants felt the need to advocate and reach out to educate the public. A participant in the Newton (2003) study lamented over the fact that some service dog organizations aren't as stringent with their training regardless of the vastly different needs a veteran with PTSD and a person in a wheelchair have:

I think the biggest part of the equation is you have to teach someone how to use a psychiatric service dog a lot differently than you show someone how to use a wheelchair service dog. They have different needs. Being able to pick up a bottle that I've dropped from my wheelchair and put it back in my lap is not the same as learning to control my panic as I walk into Walmart. (Newton, 2003, p. 53)

Public visibility would indeed make the lives of many veteran service dog owners much easier. Many of the studies highlight the frustration that participants feel in the need to educate the public all the time or to ignore the strange looks and insensitive questions they are often asked. One participant told a story in which someone walked up and asked "Are you blind?" or said "You don't look blind" because they think the dog is a Seeing Eye dog" (Moore, 2013, p. 85).

Moore (2013) posited that having a service dog increases the chances of socializing with strangers nearly every day, even if only to educate them through conversation. Moreover, that practice seems to benefit veterans even further when it comes to civic engagement.

Another facet of going through training and living with a service dog is that it helped to give some participants a sense of direction and a renewed sense of civic duty. Hyde (2016) related that many participants of his study reported feeling directionless after leaving the military. A majority of the participants discussed the projects they had started or organizations they had joined as a result of feeling better able to socialize with others. In turn, that engagement in the community lead the participants to focus more on the benefits of their efforts and less on their psychiatric symptoms.

Hope for the Future

In two of the five studies examined, participants expressed hope for their future ability to function as part of society (Hyde, 2016; Moore, 2013). One participant, in particular, recognized that, although their service dog is a life-changing tool and companion, it is merely the first step on the road to recovery, "...you have to take steps to start improving. The dog was the first step. When the VA fails me, and it will fail, I'll always have the dog" (Hyde, 2016, p. 59). This participant's dog provided comfort, stability and the motivation to continue working at treatment to reduce symptoms associated with their PTSD.

Discussion

This review was intended to discover whether or not animal-assisted therapy was

effective in treating veterans with PTSD. The search criteria were intended to be as broad as possible given the anticipated dearth of literature available on the topic. Indeed, the available literature demanded a shift in focus from animal-assisted therapy to the use of psychiatric service dogs. Two articles mentioned both terms “animal assisted therapy” and “psychiatric service dogs” and used them somewhat interchangeably which compounded the confusing change in focus (Moore, 2013; Taylor, Edwards, & Pooley, 2013). The findings in this paper indicate that psychiatric service dogs are proven effective in their use by combat veterans diagnosed with PTSD. What the findings do not answer is this researcher's initial question. However, the findings did prompt an important discussion about making clear the difference in definitions between AAT and PSD.

Each of the five articles reviewed relied on self-reporting to answer their research questions (Moore, 2013; Ferruolo, 2016; Taylor, Edwards & Pooley, 2013; Newton, 2003; Hyde, 2016). In each piece, participants discussed experiencing many benefits from their bond with their psychiatric service dog which lead to decrease in PTSD symptoms. The decrease in symptoms then lead to greater social and civic engagement in the community. Finally, the benefits from bonding with their dogs, the decreased symptoms, and the social aspect all promoted a feeling of hope for greater mental health in the future. For the participants of the studies reviewed, having access to psychiatric service dogs has provided more benefits than drawbacks and, in some cases, has allowed them to move beyond the stigma of accessing mental health care. Though the initial research question asked whether AAT is useful in treating combat

veterans with PTSD, the literature review shows that psychiatric service dogs are beneficial for combat veterans with PTSD seeking alternative treatments.

Strengths

Self-reporting in a qualitative way allowed participants to delve into complex emotions and responses that they feel when in situations where they experience such symptoms as hyperarousal or hypervigilance. It is one thing to affirm that a person does, feel hypervigilant at a grocery store and another thing entirely to describe that being in a noisy grocery store with unpredictable factors such as children, people with shopping carts, and loud noises as being similar to feeling as if they are back in a war zone. These kinds of descriptions allow a civilian and a clinician to understand a little better how threatening everyday situations can become for someone experiencing PTSD. When a participant mentions that their dog "has their back" and physically nudges them to alert that another person is about to walk behind them, it is far easier to understand the benefits of having their dog with them in the store. These service dogs are far more reliable, once trained, than human caregivers to notice not only nonverbal cues but also when a situation may become uncomfortable for the person they are tasked with assisting.

Limitations

Each of the studies relied on self-reporting. While valid, there were no real ways to quantify actual efficacy. In the Marston (2013) study, which used a control group and a treatment group, the Quality of Life Index (QLI) measurement tool did not address the unique needs and types of information that were germane to this very specific population. The QLI addresses such

factors as marriage satisfaction, sex life, health of family and children, health of participant, education level, employment status, etc. Almost none of those factors are affected in a tangible and measurable way by whether or not the participant had a psychiatric service dog. A more tailored approach would have proven most useful in this example and would include, for instance, whether the ways in which they cope with stress differ, how their coping mechanisms have changed, and how the way that they can interact with others in the community has changed, if at all.

Each study was quite small, with the maximum number of participants who had experience with a psychiatric service dog at 12 people (Marston, 2013). The majority of participants were Caucasian males, who, by the nature of the current socio-political climate of the United States, tend to enjoy more privileges and fewer suspicions in public places even with a psychiatric service dog. If the studies included more Caucasian women or more people of color, the answers regarding how accepted they felt in the greater community may have differed from the results of the five studies reviewed in this paper.

Implications for Social Work Practice

The use of psychiatric service dogs and animal-assisted therapy as a whole have a promising future in social work. As AAT is a growing field, there are some opportunities for social workers to learn more about its many benefits. However, there are fewer opportunities to learn about the partnership between psychiatric service dogs and the veterans diagnosed with PTSD who train and work with them every day. More work is needed to highlight the use of

psychiatric service dogs.

Conclusion

This paper attempted to answer the question: Is animal-assisted therapy effective in treating veterans with combat-related PTSD? The literature included in this review highlighted some confusion between definitions of animal-assisted therapy and psychiatric service dogs. Only articles about psychiatric service dogs were reviewed despite a broad search strategy. Subsequently, all but one study suggested that the use of psychiatric service dogs was beneficial for the participants in many ways. First, participants reported feeling more able to manage their PTSD symptoms and that those symptoms appeared to be less severe. Second, participants who were having a hard time reintegrating due to having unique experiences were able to connect with other veterans who had similar experiences through outreach as well as through the initial dog training process. Third, participants felt they had more purpose in life which leads them to participate more in organizations as well as take on community outreach projects. The human-animal bond proves to be a strong determining factor for whether or not these particular veterans felt they were able to push themselves to engage with traditional forms of treatment to overcome their debilitating PTSD symptoms. However, more research is needed to measure the benefits of psychiatric service dogs on the lives of veteran owners. Without such data, standardizing training and earning federal funding for psychiatric service dog programs will be difficult.

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Tables and Figures

Table 1 Acronyms and Definitions

Animal-Assisted Intervention (AAI)	A broad term used to describe the use of various species of animals and the human-animal intervention to benefit humans in some therapeutic settings.
Animal-Assisted Therapy (AAT)	A goal directed intervention in which an animal meeting specific criteria is an integral part of the treatment process -is delivered and/or directed by health or human service providers working within the scope of their profession -designed to promote improvement in human physical, social, emotional, or cognitive function -may be group or individual in nature. The process is documented and evaluated
Service Animals/Guide Animals*	Animals trained to perform specific tasks or do work for humans such as seeing-eye dogs, helping their owner function in day to day tasks such as laundry, shopping, etc. *Not considered part of AAT.
Emotional Support Animals*	Animals which are not trained to complete specific tasks, but demonstrate a close, supportive bond to their owners. *Not considered part of AAT.
Psychiatric Service Dog (PSD)	Dogs trained to address specific psychiatric needs of their owners. Dogs used for service with combat veterans who have PTSD are considered psychiatric service dogs, or PSDs.
Canine-Assisted Therapy	Therapeutic interventions which involve dogs as partners in the therapy process. A veterans with a therapy dog may rely on the canine to provide assistance with day-to-day interactions with the public by creating a barrier between the veteran and other people, checking a room before the veteran enters, etc. Therapy Dogs require a higher level of training than Service Dogs which takes much longer.
Equine-Assisted Therapy, Equine-Facilitated Therapy (EAT, EFT)	Therapeutic interventions which involve horses as partners in the therapeutic process. Horses are essentially mirrors for unconscious thoughts and feelings, and will react to those unconscious urges accordingly. This helps the client to see how their behavior affects those around them.
Hippotherapy*	A type of therapy used by physical therapists, occupational therapists, speech language pathologists or other medically certified professionals. *Not considered part of AAT

Table 2 Articles reviewed

Article Title/Date	Methods	Findings	Themes
Hyde, Jacob N. (2016). Service Dogs: An Exploratory Pilot Study of a complementary approach to evidence-based treatment of PTSD in Combat Veterans of the Iraq and Afghanistan Wars.	Candidates were selected based on their service in OIF, OEF, OND wars, a PTSD diagnosis, and were currently or had previously used a PSD. A PCL-5 and MD3Q were administered followed by a structured interview.	Based on self-reports, participants felt that PSDs had reduced the symptoms associated with PTSD and increased their functioning.	Provide hope, increase exposure, require commitment and structure, facilitate increase community engagement.
Moore, Alicia. (2013). Animal-Assisted Therapy for United States Veterans with Posttraumatic Stress Disorder.	8 self-selected participants reported their impressions with the researcher via phone interview	Participants reported feeling fewer and less intense symptoms of their PTSD and felt that having a PSD allowed them to feel safe to engage in the community in a way they had not done before.	PTSD symptoms experienced, Negative impacts on veteran's life, Getting involved with PSD organization, Specific PTSD symptoms PSD helps with, How PSD helps, Relationship with PSD over time, Ways in which PSD is not helpful, Helpful aspects of PSD program, Lack of support by military/VA, Other treatments tried, PSD suited for veterans, Importance of raising awareness about PSD
Newton, Robyn. (2014). Exploring the Experiences of Living with Psychiatric Service Dogs for Veterans with Post Traumatic Stress Disorder	6 participants who had been diagnosed with PTSD by a doctor and who were participating in other forms of treatment or psychotropic medications. Results were self-reported and analyzed for themes.	Participants reported feeling more hope, an increased connection to others, and reduced symptoms associated with PTSD. Used both terms: animal-assisted therapy and psychiatric service dogs	symptom reduction, increased connection to others, training experience was stressful, hope for greater recognition of PSD negative aspects of PSD
Marston, Holloway. (2015). An Efficacy Study on the Impact of Service Dogs on the Quality of Life of Combat Veterans.	Used a control group of 12 participants and a treatment group of 6 participants. Control group did not have PSD and treatment group had PSD. Researcher used the Quality of Life Index to measure for change.	no significant difference between groups; possibly due to the fact that some participants did not have combat-related PTSD and the QLI was not designed with effects of service dogs in mind	no themes identified
Taylor, Myra, Mary E. Edwards, Julie Ann Pooley. (2015). "Nudging them back to reality": Toward a Growing Public Acceptance of the Role Dogs Fulfill in Ameliorating Contemporary Veterans' PTSD Symptoms.	3-phase qualitative content analysis of 19 media accounts of effects of PSDs by veterans who have been diagnosed with PTSD. 3 phases: summative, conventional, and direct.	Reports suggest that pre-PSD, service members felt debilitating symptoms such as hypervigilance and hyperarousal. Post-PSD, service members felt a reduction in symptoms which allowed them to participate in society. However, the writers noticed three drawbacks: a lack of education regarding PSDs; no standardized dog training; and limited empirical evidence to prove that AAT works. Used both terms: animal-assisted therapy and psychiatric service dog	Maslow's hierarchy of needs tier 2: safety; tier 3: need for affiliation.

