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Katherine Ankenbauer

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By

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Abstract

This literature review will seek to review and analyze the efficacy of Canine-Assisted Therapy as a complementary method for combat veterans suffering symptoms of Post Traumatic Stress Disorder (PTSD), with a particular focus on those who served in Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF) and/or Operation New Dawn (OND). In recent years, many programs, agencies and therapists have more frequently incorporated the use of service dogs into therapy for post-deployment veterans. In past decades, some studies' results were deemed inconclusive by accredited authorities due to their low level of generalizability and lack of quantitative methodology and analysis. However, more recent studies have exposed data that suggests Animal-Assisted Therapy (AAT) utilizing dogs, horses and cats, when used in a complementary manner in conjunction with other more conventional, evidence-based psychotherapies, present the potential for substantially improving the results of therapy, increasing participation and shortening recovery time through impacting the above mentioned areas of physical, psychological, emotional PTSD symptoms, social experiences and levels of support. Therefore, this newer approach holds the promise of bettering PTSD treatment and increasing effectivity by filling in the gaps of traditional therapies currently used by the Veteran Health Administration (VHA) within the Department of Veterans Affairs (VA) such as Cognitive Behavioral Therapy (CBT). Thus, it is vital that we expand our knowledge on the topic, pursue more extensive research, and raise awareness among both veterans and health care providers. It is a modality of therapy that has been proven effective and therefore deserves increased amounts of attention in an effort to confirm its ability to improve therapy for future generations of veterans.

Keywords: Animal-Assisted Therapy, Posttraumatic Stress Disorder, service dogs, veterans

Introduction

Social work is experienced within a political context. Local, state and federal policies facilitate practice by dictating the provision and restriction of resources. It is dependent upon governmental funding and therefore at the mercy of legislation. For the purpose of this thesis, social work practice is narrowed to the treatments offered for United States (US) veterans suffering from Post Traumatic Stress Disorder. Due to overwhelming political influences that determine provision of veteran care, it has become necessary that healthcare professionals such as physicians, psychiatrists, psychologists and social workers utilize research to advocate on behalf of U.S. veterans suffering from PTSD. Findings from such research will enable the effective advocacy for resources that are ethically necessary but not currently available. Literature reviews such as this one promote the development of social support for these populations, which will in turn apply needed pressure to political forces to improve care. The use of research to educate of communities will produce a demand for needed adjustments in veteran care.

In return for their service, veterans deserve to receive optimum resources and continued efforts toward improved care. Such efforts require educating the U.S. Department of Veterans Affairs, which is responsible for provision of care. Further research on therapy will facilitate informed decisions, budgeting and subsequent program development. Many researchers believe that "treatment of PTSD in Veterans of combat is currently one of the timeliest topics in health care. PTSD diagnosis rates are soaring amongst returning Veterans from Iraq and Afghanistan" (Hyde, 2015, p. 3). Its impact upon the veteran population is severe, effecting individuals' cognitive performance, affect, decision-making processes and behavior (Hyde, 2015).

Statement of Problem

The greatest concern lies not within the symptomology of PTSD, but the consequences of such symptoms, such as homelessness and suicide. Furst (2016) cites the U.S. Interagency Council on Homelessness and its estimation that 100,000 veterans are currently homeless in the United States. More disturbing than this is the staggering number of veteran suicides, which have now reached 22 per day, making PTSD a national crisis (Sutera, 2016). These prevalent risks of suicide and homelessness plague the current veteran population, and the issue will only worsen as increasing numbers of veterans return home. Hyde (2015) explains that the U.S. combat veteran population demonstrates significantly higher rates of mental illness, substance abuse and homelessness than an average individual within the general population. As stated by the Department of Veterans Affairs (2015), the number of Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) Veterans who have returned has reached almost two million since November 2014.

According to the report summary, a total of 391,759 OEF/OIF/OND Veterans are speculated to require services post-deployment due to being at high risk for, or having already developed, PTSD (Department of Veterans Affairs, 2015). Sutera (2016) declares this number will only increase, predicting it may reach 700,000 by the year 2019. Unfortunately, Hyde (2015) estimated that only a fraction, a mere 23 to 54 percent, of this population seeks treatment. Moreover, there is very little knowledge pertaining to the reactions of these combat veterans to their treatment options (Hyde, 2015). A recent study conducted by Aakre, Himelboch and Slade (2014) found that only 23 percent of veteran participants attend the nine-session minimum that the VA requires for evidence-based psychotherapies. Therefore, 77 percent of veterans fail to ever complete a full course of treatment.

Statement of Purpose

A review of the literature suggests that conventional modalities of PTSD therapy for veterans frequently fail in providing successful, effective treatment (Hoge, 2011). Meanwhile, many anecdotal reports provided by veterans have extolled the benefits of Canine-Assisted Therapy, stating the use of service dogs facilitated their recovery after experiencing failed attempts with conventional treatments (Winkle, Crowe, & Hendrix, 2012).

In more recent studies, researchers have suggested that the use of Canine-Assisted Therapy as a complementary treatment may possess the potential to compensate for such shortcomings in conventional treatments, assisting those who were unable to find success from participation in current evidence-based therapies (Marston & Kopicki, 2015). Many programs, agencies and therapists are now incorporating service dogs into PTSD therapy for veterans.

Currently, professional counselors and licensed social workers are the primary source for literature on the subject (Moorhead, 2012). In a doctoral study conducted by Colleen McLaughlin with St. John Fisher College, it was found that after only four weeks of being partnered with their therapy dog, veterans demonstrated statistically significant improvements in areas of social functioning, vitality and mental health (2013). Veterans themselves have reported that therapeutic partnerships with a trained service dog relieved symptoms of their PTSD that other evidence-based therapies did not (Marston & Kopicki, 2015). Additionally, partnership with highly trained dogs has been shown to increase hope and socially responsible community engagement among combat veterans diagnosed with PTSD (Hyde, 2015).

The existing research regarding Canine-Assisted Therapy reveals its potential and warrants increased attention and resources to further confirm its ability to improve evidence-based therapy for veterans. The incorporation of this newer approach holds the promise of

bettering treatment when conventional therapies fall short in addressing the emotional and psychological ramifications of PTSD. If this is the case, it is vital that we expand our knowledge on the topic, pursue more extensive research, and raise awareness among both veterans and health care providers. Therapy dogs are an around-the-clock, holistic treatment option that addresses the unseen symptoms in veterans facing PTSD. They are with their partners continuously, forming a bond that breaks down the barriers of the psychological symptoms. Studies speculate that when veterans are not able to properly bond with other human beings, they are often able to form an emotional connection with the dog. This relationship provides support the veterans would otherwise lack due to social isolation. The dogs may also function as co-therapists, easing their veterans into therapy and helping them to feel safe (Jackson, 2012).

Post Traumatic Stress Disorder for United States Veterans

Prevalence

Beyond the definition and diagnosis of PTSD itself, researchers must have context for the impact of the issue within the veteran population, being conscious of how it differs in its effect upon the civilian population. PTSD within the military community is highly concentrated, affecting an estimated 13 to 58 percent of veterans, in contrast to the United States population as a whole, where only 1 to 14 percent of the entire population suffers from PTSD (Kopicki, 2016). Therefore it is vital for the affected organizations providing care to understand the need. It is not enough to know PTSD exists within the U.S. military population, it must also be fully understood in its impact. How many are currently affected? How does PTSD manifest itself in current U.S. veterans specifically and is it a growing issue? What is working? What is not? What is the prevalence? Organizations responsible for care must know these statistics and the

implications of the data to have accurate context for the magnitude of the issue if they are to move forward toward improved systems of care.

When determining the need for improved modalities of PTSD treatment, it is crucial to first evaluate the size of the need and population being treated. America has experienced a recent influx of U.S. veterans returning from high-risk combat zones. Marston and Kopicki (2015) report that more than 2 million veterans have recently deployed to such combat zones, and additional data suggests that a mere 50 percent of that 2 million have chosen to access care. More disturbing is that only 40 percent of those who receive care experience substantial reduction of their PTSD-attributed symptoms (Marston & Kopicki, 2015). Unfortunately, such data indicate that the current treatment systems that are in place only treat 20 percent of all post deployment veterans in an effective manner which may be due in part to veterans' doubt in efficacy of treatments or lack of trust in health care providers (Hoge, 2011; Kloep, 2016). Such low rates of successful therapeutic results necessitate alternative therapy methods and the effort toward improved, evolved conventional modalities through the incorporation of complementary therapies. Dropout and nonresponse rates are as high as 50 percent and become an underlying challenge of the condition itself (Thodberg, 2017).

Various studies have discovered certain veteran populations to be particularly high-risk for experiencing combat-related PTSD symptoms post deployment, most notably those who deployed to Iraq and Afghanistan to serve in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) (Litz & Schlenger, 2009). Hyde (2015) adds that, while OIF concluded in 2010, ongoing combat operations still continue in both Afghanistan and Iraq with OEF, as well as Operation New Dawn (Iraq). Between the two operations, OIF and OEF, it is "estimated

that 18% of returning Iraq and Afghanistan veterans have PTSD" (Kopicki, 2016, p. 5). The Department of Veteran Affairs (2015) reported that:

> A query of VHA health care utilization databases using the November 2014 DMDC [Defense Manpower Data Center] roster yielded a total of 364,894 OEF/OIF/OND Veterans coded with PTSD at a VAMC [Veteran Affairs Medical Center] and 87,472 Veterans who received Vet Center service for PTSD. In summary, based on the electronic patient records available through December 31, 2014, a grand total of 391,759 OEF/OIF/OND Veterans were seen for potential or provisional PTSD at VHA facilities following their return from Iraq or Afghanistan. (p. 3)

This high risk for developing PTSD may be due to these operations exposing their soldiers and marines to frequent events of ground-combat during their time serving (Hoge et al., 2004). It should also be noted that research regarding the prevalence of PTSD occurring in OIF and OEF veterans "relies primarily on brief self-report screening assessments often tied to soldiers being processed out of active duty. In such a scenario, issues of confidentiality and underreporting arise" (Furst, 2016, p. 50).

Reflecting on previous conflicts, Kang et al. (2003) found that approximately 10 percent of Gulf War veterans suffer from PTSD. For Vietnam veterans this number increases to range from 15.2 to 30 percent (Schnurr et al., 2003). However, the need is greater than even those numbers can convey, since not all veterans immediately experience PTSD symptoms after returning home. It must be taken into account that, "of those exposed to military combat, the estimated lifetime risk for developing PTSD by age 75 is between 8.7% to over 50%" (Kopicki, 2016, p. 16). Such delayed onset is frequently observed in older veterans when entering retirement (American Psychiatric Association, 2013).

> For example, many Vietnam era veterans who were workaholics used their career as a means of avoiding thoughts, emotions, people, situations, and objects that could remind them of their trauma. Once they retire, many veterans have time to themselves and during this time they think about the past traumatic events. Reminders of those events could trigger PTSD symptoms to the point where the symptoms interfere with their lives. (Kopicki, 2016, p. 22)

From a National Standpoint

When viewing this issue from a national standpoint, it can be seen that the situation of the U.S. veteran population is not improving, and the federal government is beginning to change their approach in addressing it. For example, former president Barack Obama, in his announcement of approval for the 2010 national report, *Strengthening our Military Families: Meeting America's Commitment*, promised to support and strengthen military families through a commitment to their psychological wellbeing (McLaughlin, 2013). The report also detailed how the problem of PTSD is growing, necessitating a greater effort to treat and resolve the condition, while simultaneously supporting not only the veterans themselves but also their families (McLaughlin, 2013). This recognition of the need to assist the families in remaining whole has been an overlooked aspect of PTSD care, but one that is recently receiving more attention. On the other hand, Glantz (2009) points out that while there is this renewed commitment, there is also staggering amounts of reintegration and PTSD research that remain unattended or underutilized due to faulty efforts by the federal government. As a result, the government's claimed attention to PTSD care is a paradox of both increased commitment and selective ignorance.

Post Traumatic Stress Disorder Defined

Conceptualization of Post Traumatic Stress Disorder

For this thesis, it must be understood what is meant by the condition of PTSD. For centuries, the concept of PTSD has existed, though somewhat abstractly for many years after its inception, there was still "remarkable consistency in the description of such posttraumatic reactions throughout the centuries, whether written by poets and novelists or clinicians and scientists" (Monson & Friedman, 2006, p. 1-2). Beginning with the Civil War, America's perceptions of PTSD were primarily understood as psychological reactions affecting the cardiovascular system. Subsequently, PTSD was diagnosed in various eras as types of heart conditions such as irritable heart or Da Costa Syndrome during the Civil War, neurocirculatory asthenia, shell shock or soldier's heart in conjunction with World War I, and finally, as effort syndrome throughout World War II (Hyams, Wignell & Roswell, 1996).

Another theory, attributing these reactions to organic causes, focused on the physical components of PTSD and therefore enabled soldiers to avoid the sense of personal failure and associated stigma of mental disorders, while also permitting the military to ignore the need for psychological interventions (Monson & Friedman, 2006). Abraham Kardiner, a World War I psychoanalyst, was one of the first to suggest the coexistence of both psychological and physical components within the concept of trauma reactions exhibited by veterans (Monson & Friedman, 2006). This insight, which contradicted the ruling doctrine of his time, makes him a pioneer of psychobiological theory and the creator of the first set of criteria for diagnosis of PTSD almost 40 years prior to the very first formal diagnosis of PTSD (Monson & Friedman, 2006). Following such research, the concept of posttraumatic reactions continued to evolve with the first

Diagnostic and Statistical Manual of Mental Disorders (DSM) and its progressive revisions in later DSM editions (Monson & Friedman, 2006).

According to Norris et al. (2003), acute stress reactions are deemed normal after exposure to trauma and differ from those defined as chronic which facilitate the potential development of a PTSD diagnosis. Studies suggest that an estimated 94% of traumatized individuals will manifest PTSD-attributed symptoms during the immediate aftermath of a traumatic event (Monson & Friedman, 2006). Typically, a healthy individual's symptoms will self-resolve within 6 months (U.S. Department of Veterans Affairs' National Center for PTSD, 2017). It is "the persistence and severity of symptoms and the functional impairments that merit diagnosis" (Monson & Friedman, 2006, p. 6). Therefore, if an individual continues to suffer posttraumatic reaction-associated symptoms beyond the duration of 1 year, it is likely chronic and may warrant a PTSD diagnosis (Norris et al., 2003).

Post Traumatic Stress Disorder Diagnostic Criteria

In 2013, with the updated publication of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the American Psychiatric Association adjusted its diagnostic criteria for PTSD, moving it from its prior classification as an anxiety disorder to be included in the new category of Trauma and Stressor-Related Disorders (APA 2013; Furst, 2016; U.S. Department of Veterans Affairs' National Center for PTSD, 2017). According to the VA's National Center for PTSD (2017), all conditions in this classification require exposure to a stressful or traumatic or stressful event to meet the diagnostic criteria. The VA's National Center for PTSD (2017) outlines categories of criteria, subsequently summarizing each listed symptom:

> **Criterion A (one required):** The person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, in the following

way(s): Direct exposure, witnessing the trauma, learning that a relative or close friend was exposed to a trauma, [or] indirect exposure to aversive details of the trauma, usually in the course of professional duties.

Criterion B (one required): The traumatic event is persistently re-experienced, in the following way(s): Intrusive thoughts, nightmares, flashbacks, emotional distress after exposure to traumatic reminders [or] physical reactivity after exposure to traumatic reminders.

Criterion C (one required): Avoidance of trauma-related stimuli after the trauma, in the following way(s): Trauma-related thoughts or feelings [or] trauma-related reminders.

Criterion D (two required): Negative thoughts or feelings that began or worsened after the trauma, in the following way(s): Inability to recall key features of the trauma, overly negative thoughts and assumptions about oneself or the world, exaggerated blame of self or others for causing the trauma, negative affect, decreased interest in activities, feeling isolated [or] difficulty experiencing positive affect.

Criterion E (two required): Trauma-related arousal and reactivity that began or worsened after the trauma, in the following way(s): Irritability or aggression, risky or destructive behavior, hypervigilance, heightened startle reaction, difficulty concentrating [or] difficulty sleeping.

Criterion F (required): Symptoms last for more than 1 month.

Criterion G (required): Symptoms create distress or functional impairment (e.g., social, occupational).

Criterion H (required): Symptoms are not due to medication, substance use, or other illness. Two specifications:

Dissociative Specification. In addition to meeting criteria for diagnosis, an individual experiences high levels of either of the following in reaction to trauma-related stimuli: Depersonalization: Experience of being an outside observer of or detached from oneself (e.g., feeling as if "this is not happening to me" or one were in a dream). Derealization: Experience of unreality, distance, or distortion (e.g., "things are not real").

Delayed Specification. Full diagnostic criteria are not met until at least six months after the trauma(s), although onset of symptoms may occur immediately.

Symptom Cluster Summary

As cited by the VA (2014) from the American Psychiatric Association in 2013, criteria used to diagnose PTSD in the DSM-5 are divided into four symptomatic groups:

1. Intrusion: re-experiencing the event through flashbacks or nightmares pertaining to the trauma.
2. Changes in arousal and reactivity: heightened arousal or reactivity symptoms such as aggression, hypervigilance, self-destructive behavior, recklessness and increased startle (fight-or-flight) response.
3. Negative changes in cognition and mood: persistent blame, separation or isolation from others, and being unable to remember certain features of the event.
4. Avoidance: learned behaviors and techniques to prevent triggers that will cause negative thoughts, feelings or moods (including sadness, anxiety, anger or guilt). It is a response mechanism to the three previously listed clusters (APA, 2013; Furst, 2016).

Drug and alcohol abuse, suicide, feelings of hopelessness and physical, marital or employment issues have also been cited as additional symptoms of PTSD (McLaughlin, 2013). Kopicki

(2016) states that presentation and occurrence of posttraumatic symptoms vary among veterans depending on the particular war, occupational specialty or branch of service, as well as their unique internalization of trauma. Glantz (2009) concludes that the bottom line is this; "while each veteran's case is different in its details, a clear pattern emerges overall. American soldiers return from Iraq and Afghanistan different from when they left" (p. 21).

Implications

Functional in combat, dysfunctional as a civilian. It is important to note that the reactions that enable correct responses and actions in battlefield situations are the very same that can become crippling for veterans when they return to the civilian world. Hyde (2015) explains that when military personnel are under stress in combat situations, they experience typical physiological adjustments to stress such as increased blood pressure and heart rate, pupil dilation, and narrowed attention and focus, relying on muscle memory and previously developed cognitive shortcuts to act. This minimizes critical evaluation of the situation but functions effectively, even optimally, in such combat situations (Hosek, 2011). Unfortunately, these same responses to normal stimuli encountered daily as a civilian are dysfunctional and disturb an individual's ability to properly operate in social, occupational and personal functioning (Hyde, 2015).

As previously stated in the above criteria, sleep disturbance is an identifying characteristic of PTSD, meeting the criteria for alteration in arousal and reactivity (insomnia), as well as being an intrusion symptom (chronic nightmares), consequently affecting both the veteran's quality and quantity of sleep (Kopicki, 2016). The symptom of insomnia is suggested to often be a product of the fear induced by chronic nightmares related to the trauma (Krakow et al., 2001). These nightmares, more appropriately known as night terrors, possess disturbing

features of the trauma itself and the emotional reactions it produced that, as McLaughlin (2013) states, cause the event to be relived rather than remembered. Sleep disturbance is a salient and core feature of PTSD that impacts an estimated 70 to 91% of PTSD-diagnosed veterans (Margolies, Rybarczyk, Vrana, Leszczyszyn, & Lynch, 2013). "This category of intrusive symptoms is important to address because not only did our veterans experience trauma during their service but they continue to relive those experiences when they come home" (Kopicki, 2016, p. 18).

The social consequences of an invisible disability. Other dysfunctional behaviors and cognitive patterns, such as but not limited to, substance abuse, risk-taking or self-destructive behavior, negative alterations of self-perception, survivor's guilt, and even dissociation symptoms severely damage a veteran's ability to interact with civilians in a healthy manner (Kopicki, 2016). McLaughlin (2013) writes of how a veteran's social trust is destroyed during training and deployment due to the enemy's constant, impending attempts to ambush and kill. McLaughlin (2013) then illustrates this point by citing Shay (1994) who stated that veterans who fought in wars such as Vietnam, where nothing was as it seemed, all assumed certainties were liquefied, and even stable truths were no longer dependable. Such distrust facilitates damaging levels of self-isolation. Another, potentially more complicated contributing factor of social isolation may be the inevitable loss of peer support that is a resulting side effect of discharge from the military (Kloep, 2016). Oftentimes, this inability to relate with those in the civilian world the way they did within their military relationships that were built upon common experiences, cohesion and brotherhood can be an underlying cause of social exclusion (Kloep, 2016). For either reason, Hyde (2015) notes that social exclusion is a direct consequence of

PTSD to the point of disability and can have a fundamental impact on an individual's quality of life.

Hyde (2015) tells how veterans' experiences of physiological PTSD symptoms, even when severe, are usually invisible to those around them. This invisibility, Hyde (2015) continues, is due in part to the nature of the military, which trains warriors to withhold expression of emotions, internalize stress, and conceal true affect to ensure composure is maintained in crisis or combat situations. Operating in such a state of artificial calm may be functional on a battlefield, achieving objectives and preserving trust in leadership, but becomes self-destructive as a civilian. In a particularly moving personal account, *Until Tuesday: A Wounded Warrior and the Golden Retriever Who Saved Him,* former Army Captain Luis Montalván details what his life with PTSD was like prior to owning his service dog, Tuesday:

> Before Tuesday, I caught glimpses of snipers on rooftops. Before Tuesday, I spent more than an hour in my apartment working up the courage to walk half a block to the liquor store. I took twenty medicines a day for everything from physical pain to severe agoraphobia, and even benign social encounters caused crippling migraines... other days I limped half a mile in a 'gray out', awakening on a street corner with no idea where I was or how I had gotten there... I couldn't work... I couldn't sleep. And every time I did, I saw terrible things... (Montalvan, 2001, p. 4-5)

Another recent account, by Marlantes (2011), explains that such dysfunctions in behavior negatively impact veterans' relationships with their family and friends, with the potential for dangerous social isolation that may result in suicidal ideation, tendencies, and ultimately suicide. Gradas and colleagues (2010) revealed that the prevalence of suicide in U.S. Army veterans is "...currently higher than during any period on record" (p. 721). Furst (2016) reports that,

although veterans only comprise 1 percent of the American population, they account for 20 percent of all suicides committed in the United States. Kuehn (2012) suggests the United States military may very well be a greater danger to itself than to the enemy. Therefore, veteran suicide is currently an issue that is of the utmost concern (Kopicki, 2016) and demands proactive efforts of prevention.

Predisposition for PTSD Among Military Personnel

Kopicki (2016) explains that veterans may be substantially more susceptible to developing PTSD if they have risk factors such as having a history of anxiety, depression, or other mental health issues, as well as substance abuse prior to trauma. Other predisposing factors for military personnel include: being unmarried, of lower rank, serving in Operation Iraqi Freedom or Operation Enduring Freedom, or those who have experienced childhood traumas (Furst, 2016). Prior diagnosis of acute stress disorder and experience of trauma are the two primary risk factors for the development of PTSD (Litz, Gray, Bryant & Adler, 2002). Additionally, Furst (2016) explains, because intensity and proximity of traumatic events are determining factors for the development of PTSD, the exact type of combat experiences are essential for predicting the occurrence of PTSD. One survey conducted by Hoge et al. (2004) revealed that over 90 percent of PTSD-diagnosed OEF/OIF Veteran respondents had been shot at, and only a slightly lesser percentage had been required to handle dead bodies, with many knowing someone who had been injured or killed. Furthermore, many of these OEF/OIF Veterans reported they had killed an enemy combatant (Hoge et al., 2004). In addition, researchers found that perceived sense of personal safety and military preparedness, or lower levels of perceived social support after returning home post deployment increase the chances that veterans will develop PTSD (Furst, 2016). Finally, risk for PTSD is cumulative, and every

additional deployment adds to the likelihood of PTSD (Hoge et al., 2004; McLaughlin, 2013). Marlantes (2011) sums this up simply, revealing the disturbing nature of war and its devastating impact upon the human mind and soul, with a personally driven statement:

> Killing someone without splitting oneself from the feelings that the act engenders requires an effort of supreme consciousness that, quite frankly, is beyond most humans. Killing is what warriors do for society. Yet when they return home, society doesn't generally acknowledge that the act it asked them to do created a deep split in their psyches, or a psychological and spiritual weight most of them will stumble beneath the rest of their lives. (p. 26)

Review of the Literature

This literature review of intervention methodology and its speculated efficacy serves to evaluate predominant findings presented by authorities, such as the VA, in an attempt to better understand the successes and shortcomings of each for the purpose of recommending adjustments to systems of care. When evaluating the efficacy of various treatment modalities, it is important to understand the context for research and its interdependence with treatment, noting powers of influence. Both the U.S. Department of Veterans Affairs and Department of Defense possess primary control of veteran care, determining access to resources and provision of services, with the VA being "the world's largest provider of PTSD treatment for combat veterans with approximately 200,000 veterans seeking treatment for PTSD" (Kopicki, 2016, p. 24). Additionally, veterans themselves play an important role in the implementation of services, deciding the level of participation in treatment. If their perception of available services is negative, misinformed, or inhibited by belief in stigma, they may fail to access needed care; their opinions of their condition and efficacy of services facilitate their decision to seek treatment, to

participate, or to refuse it entirely. Therefore, the above mentioned groups' perceptions of current treatment options, and the potential need for enhanced or alternative methods, determine the potential for advancement of treatment and the resulting development of improved systems of care.

Current traditional and evidence-based therapies

On behalf of governmental authorities, the VA primarily supports a combination of evidence-based psychotherapy and psychopharmacological treatment to address PTSD (Hyde, 2015; Kopicki, 2016; Monson & Friedman, 2016; U.S. Department of Veterans Affairs, 2015). Regarding evidence-based psychotherapies, the U.S. Department of Defense and Veterans Affairs currently recommends Cognitive Processing Therapy (CPT), Cognitive Behavioral Therapy (CBT), Prolonged Exposure Therapy (PET), and Eye Movement Desensitization and Reprocessing Therapy (EMDR) as the top methods of intervention (American Psychological Association, 2017; Kloep, 2016; Newton, 2014). The second method of intervention that is utilized by the VA and affiliated healthcare providers is Psychopharmacological treatment. Medication is used as a complementary intervention to supplement the above listed psychotherapies, and such pharmacological prescriptions typically possess a "Selective Serotonin Reuptake Inhibitor (SSRI) or a Serotonin and Norepinephrine Reuptake Inhibitor (SNRI)" (Hyde, 2015, p. 16).

Unfortunately, while CBT has been deemed effective, especially with its evolutionary variation of trauma-focused CBT (TF-CBT), it has been found that the select evidence-based therapies (EBTs) researched, funded and provided by the VA health system fail to effectively assist many veterans and may even exacerbate symptoms (Kopicki, 2016). For example, PET, EMDR and methods of group therapy are criticized for their drop-out rates, as high as 35

percent, with up to 40 percent of their remaining participants failing to experience symptom relief, and an additional 11 percent reporting to have developed intensified symptoms post-treatment (Kopicki, 2016). Furthermore, the VA's utilization of psychopharmacological interventions to treat secondary symptoms of depression and anxiety are speculated to be detrimental for their common side effects that are counterproductive to recovery, such as insomnia, aberrant behavior, restlessness and vomiting (Hyde, 2015; Kopicki, 2016). Sutera (2016) speculates there may also be an issue of over-medicating, citing a 2012 interview by NBC News with Luis Zaragoza, in which the Army veteran tells how he experienced firsthand the VA's tendency to pump veterans full of medicine to treat their PTSD, a method he states is no solution, but only a temporary fix that numbs the symptoms and the veteran themselves. Zaragoza concludes the interview by adding that after exiting treatment at the VA, he obtained a service dog, which he claims made more of a difference in six months than he experienced in all three years of his care at the VA (Sutera, 2016).

Monson and Friedman (2006) speculate that traditional conceptualizations of what is deemed to be adequate trauma-related treatment may be inhibiting certain areas of research on the core evidence-based therapies, and may be to blame for the shortcomings in their development and application. The same therapies used to treat combat veterans with complex medical histories are typically the same modalities used for members of the general civilian population and therefore fall short in their ability to meet the specific needs of combat veterans (Newton, 2014). This lack of customization may be preventing significant improvements. After extensive research of conditions experienced by the present veteran population, Sutera (2016) hypothesizes that "traditional interventions may actually not serve their intended therapeutic purpose. In conjunction with these inferences, Monson and Friedman (2006) recommend that

future studies acknowledge predictors and features of PTSD beyond those that have been previously investigated, with the goal of developing theoretically driven, tested models of therapy.

Veterans Affairs: Gaps in Care

In the past few decades it has been made clear that current treatment options for veterans are not only limited, but also inadequate, as evidenced by lack of statistically significant reduction in symptoms for 60 percent of veterans post-treatment (Sutera, 2016; Yount, Olmert & Lee, 2012). Due to these shortcomings of currently utilized Evidence Based Therapies (EBTs), it can be observed that there is a dire need for improved approaches for veteran care within the VA health system. Kloep (2016) declares, "The need for supplemental treatment has been acknowledged for some time. In 1986, the U.S. Army surgeon general recognized the usefulness of animals in promoting psychological health" (p. 2). However, proactive efforts toward such improvements appear to often be of low priority. "The VA has been widely criticized—not only from Veterans trying to navigate the system, but also from Congress and the President—for its poor response to Veterans' health care needs" (Furst, 2016, p. 51-52). As cited by McLaughlin (2013), the 2012 Code of Federal Regulations states that "veterans with mental health issues are not eligible for benefits for service dogs; only those veterans with physical disabilities are currently eligible for VA service dog benefits" (p. 1-2). Further research of modalities such as Animal-Assisted Therapy (AAT) may facilitate the modification of offered care to incorporate complementary treatments to compensate for conventional shortcomings. However, there are other barriers that must also simultaneously be addressed in order to successfully propose, and potentially implement, such changes.

Kopicki (2016) outlines various issues such as, but not limited to, lack of outreach to veterans regarding available resources, potentially preventing them from accessing care; lack of qualified staff within PTSD treatment facilities due to increasing demands as a result of the veteran population's recent growth; failure of clinicians to provide accurate treatment referrals, mistakenly diagnosing PTSD as anxiety disorder or depressive disorder; and high drop-out rates. Furst (2016) also points out that the VA's failure to address stigma surrounding a veteran's PTSD diagnosis and participation in treatment has severe ramifications. For instance, the negative alteration of self-perception and feelings of weakness or shame surrounding a PTSD diagnosis may prevent veterans from accessing care at all (Furst, 2016). He explains that the stigma associated with seeking mental health care in the military may be the greatest barrier to care that veterans face, with as few as 9.5 percent receiving the recommended amount of treatment in the year following their diagnosis (Furst, 2016). This may be due to a potentially dangerous comparison of condition, measuring their symptoms against that of their fellow veterans, or feeling undeserving of treatment if they believe others with worse PTSD to be surviving without therapy (Kopicki, 2016).

McLaughlin (2013) identifies another issue indirectly related to provision of care, drawing attention to the VA for financial and bureaucracy-related failure to acknowledge complementary and alternative therapies as valid options of treatment. Furst (2016) provided a summary of a 2013 Army report where it was stated that Army physicians had altered PTSD diagnoses to avoid financial responsibility for treating veterans. In the context of Animal Assisted Therapy (AAT), veterans may be denied a service dog due to cost, since each dog may be as much as $25,000.00 to obtain (McLaughlin, 2013). Furst (2016) continues on to include

statements from a recent 2014 Institute of Medicine (IOM) report that assessed the VA and Department of Defense (DoD) for quality of PTSD services and programs:

> According to the IOM (2014): …a lack of standards, reporting, and evaluation significantly compromises DoD and VA efforts. The departments often do not know what treatments patients receive or whether treatments are evidence-based, delivered by trained providers, cost-effective, or successful in improving PTSD symptoms. The departments also collect little information about the effectiveness of their programs in the short or long terms. (p. 4)

Such statements highlight the need for re-commitment to optimum care for our nation's warriors, with a multi-faceted plan that addresses the provision of care in its entirety.

Civilian Efforts

Recent increases in awareness of AAT, and recognition of its potential among civilians and the non-profit sector, have led to subsequent efforts towards private and grant-based funding for the provision of service dogs to veterans. Furst (2016) explains that in this way, "nonprofit organizations are filling the void created by the VA and are providing Veterans with dogs as a form of AAT" (p. 55). Marston and Kopicki (2015) state that such efforts are a response to the high volume of requests by returning veterans for AAT treatment. Many of these organizations have achieved standards of excellence in their dog training programs, obtaining accreditation by the certifying body, Assistance Dogs International (Marston & Kopicki, 2015). Such certification provides the dogs protection under the Americans With Disabilities Act, allowing them entrance to anywhere, including airports and restaurants (Marston & Kopicki, 2015). The first veteran dog-training program was designed in July 2008 by social worker and service dog trainer Rick Yount, for the specific purpose of providing a safe, effective, nonpharmaceutical PTSD

intervention for veterans undergoing treatment at a U.S. Veterans Administration residential treatment facility (Yount, Olmert & Lee, 2012). Yount was then asked to further establish his program at a Department of Defense medical center in 2009, and shortly after was invited to create the same program to support research and improvement of treatment at the National Intrepid Center of Excellence (Yount et al., 2012). The non-profit organization, Warrior Canine Connection, now offers this successful training program as part of their effort to produce further evidence that the use of such service dogs can effectively reduce PTSD symptoms for veterans through systematically investigating the psychological, physiological and behavioral benefits of this program (Yount et al., 2012).

Some current non-profit organization programs are dual-purpose in their impact, benefitting both veterans and incarcerated individuals. Such programs, referred to as Prison-Based Animal Programs (PAPs), positively impact lives prior to any involvement with the intended veteran clients (Furst, 2016). PAPs provide prison inmates with the opportunity to not only train the dogs, but to also experience positive social relationships throughout the entire process of raising them (Jackson, 2012). Additionally, the dogs give the same nonjudgmental companionship and sense of purpose to their incarcerated trainers as they do to their veteran owners, facilitating improved inmate behavior (Jackson, 2012). Jackson (2012) cites the program Puppies Behind Bars as a prime example of this type of new and innovative non-profit-sanctioned method of provision of service dogs:

> ...Puppies Behind Bars that focuses solely on training dogs to service veterans wounded from war with a physical injury, traumatic brain injury, or Post Traumatic Stress Disorder. The inmates are specially trained within prison to raise a service dog. During their sixteen months in prison, the puppies live in the same cell as their primary raiser and

> attend weekly classes with a trained professional. During each month the puppies are exposed to life outside the prison by staying with foster homes. The puppies are constantly interacting with humans during the sixteen months. After their time is up in training they are tested to determine if they are adequate to be placed with the disabled. If the puppies pass they move on to more formal training outside the correctional facility. After the puppies complete their final professional training they are donated to veterans who apply for a service dog. If the puppies do not pass they are then donated to families with blind children. (p. 14)

Service Dogs Defined

While service dogs exist within the category of AAT, they also fall under the category of Complementary and Alternative Medicine (CAM). As an AAT therapeutic intervention, the dogs serve not only to care for and assist their owners, but to also let their owners care for them (Kopicki, 2016). Furst (2016) cites the Delta Society's 1998 study, stating AAT is "a goal-directed intervention in which the animal is a fundamental part of the treatment process designed to improve psychological, physiological, or cognitive functioning" (p. 52). Wynn (2015) summarizes AAT as a structured therapy that functions to facilitate progress towards a therapeutic goal through animal-human interactions. The very first documented use of AAT transpired in 1792, while its first application within a clinical setting occurred in 1919 when St. Elizabeth's Hospital used therapy dogs as companion animals for their psychiatric patients (Jackson, 2012). However, AAT later gained significant recognition in the field of psychotherapy with the publishing of child psychotherapist Levin's 1962 paper, *The Dog as 'CoTherapist'*, which outlined the developmental and overall health benefits of a companion animal for children (Jackson, 2012). Following this milestone, AAT experienced substantial

growth during the 1980's, when it became an accredited field (Jackson, 2012). One of the most prominent populations of focus has been victims of trauma (Thodberg, 2017).

Under the classification of CAM, service dogs are defined as a complementary method, not intended to replace conventional evidence-based therapies, but rather to act as a catalyst for their results by helping to manage night terrors, hypervigilance, flashbacks and other signs of anxiety (Kloep, 2016). Hyde (2015) gives background regarding the concept of CAMs, explaining that they have been utilized for hundreds of years to go beyond the biochemical dimension of an illness to holistically address the emotional, spiritual, nutritional, and social features as well. They have experienced a significant increase in popularity among Americans within the last decade, seeing varying levels of efficacy depending on the disorders to which they are applied (Wynn, 2015). The surge in popularity of CAMs may be the needed response to the VA's failure to successfully treat the 60 percent of veterans who have not yet had success with conventional, evidence-based psychotherapies (Sutera, 2016).

Complementary and Alternative Medicines: How They Work

CAM therapies treat trauma-related disorders by affecting "the mind's capacity to regulate the brain and body's response to social and environmental challenges by reducing stress and enhancing the immune function through the release of the neuropeptide oxytocin by the brain" (Yount et al., 2013, p. 292). While research regarding such therapies is still limited, CAMs present the possibility of effective treatment for those who have not been reached by recommended therapies (Wynn, 2015). CAMs can be split into their two inherent categories; complementary and alternative. Complementary can be simply defined as, interventions that serve to enhance traditional therapies, not replace them (Wynn, 2015). In contrast, alternative therapies possess the ability to operate as a monotherapy (Wynn, 2015). Despite the need for

more extensive research, Hyde (2015) declares that the National Center for PTSD (NCPTSD) has now recommended that CAM treatments be seriously considered for PTSD treatment. CAMs are a favorable option for multiple reasons, as they have the potential to increase treatment engagement by creating new therapy options for veterans that are low-risk and to activate various mechanisms known to alleviate PTSD symptoms (Wynn, 2015).

Delineating Types of Animal-Assisted Therapy Dogs

Hyde (2015) conceptualizes three categories of AAT dogs: "Areas of companion animals (pets), Assistance Dogs (for individuals with disabilities), and Service Dogs (for individuals with physical and psychiatric disabilities)" (p. 28). However, Hyde (2015) continues his discussion by explaining that, in a 2015 report, the organization Assistance Dogs International identified three types of dogs: Guide Dogs (for visually impaired individuals), Hearing Dogs (for those who are deaf), and Service Dogs (for individuals with disabilities). It is also important to note that therapy dogs participate in animal-assisted activities (AAA) and visit institutions with a professional handler, while service dogs are used for AAT, whose client is their owner (Thodberg, 2017, para. 5). Additionally, according to Furst (2016), within the category of service dogs there are three subcategories: "(a) dogs engaging in work that affects the mind/body of Veterans; (b) dogs engaging in physical tasks; and (c) work that uses the dogs' natural senses" (p. 55).

Service Dogs falling under the subcategory of mind and body must be competent in key skills identified by the Psychiatric Service Dog Society as necessary to their owner's specific condition in order to receive their official title of a Psychiatric Service Dog (PSD) (Newton, 2014). Love and Esnayra (2009) claim that the concept of Psychiatric Service Dogs originated in 1997 after a collaborative of mental health consumers found that dogs can provide refractory

PTSD symptom management, reporting that "their dogs could sense oncoming episodes of mental illness even before the patients themselves could perceive a change within their own bodies" (p. 12). Current PSD dogs may be trained to respond to an estimated one hundred different commands (Hyde, 2015). For dogs assigned to a veteran owner suffering from PTSD, requirements include tasks such as:

> Waking up their handlers when they are having a nightmare, turning on the lights so that their handlers do not have to awaken in the darkness, providing tactile stimulation for when their handlers need grounding, and leading their handlers to a safe place in the event of dissociation. (Newton, 2014, p. 11)

Kloep (2016) explains that for the symptom of flashbacks, or re-experiencing, dogs can be trained to recognize the physical signs and then interrupt it, reminding the veteran to employ learned therapeutic skills.

Efficacy of Service Dogs: Review of Literature Findings

Summary of Benefits

As discussed throughout this thesis, it can be observed that there is a dire need for modified modalities of PTSD-related treatments for the current U.S. veteran population. The use of service dogs as a complementary method presents the opportunity for great improvement, with current research highlighting many therapeutic benefits unique to AAT. Current research findings demonstrate the potential of using service dogs to prevent veterans from prematurely dropping out of therapy altogether (Moore, 2013). However, Wynn (2015) states, the VA and Department of Defense do not currently support animal-assisted therapy except for use in some research programs. Therefore, AAT must prove itself truly worthy to receive attention and funding by the necessary authorities such as the VA and Department of Defense. Kopicki (2016)

claims current literature recommends AAT because service dogs have been found effective due to their ability to address the psychological, biological and social aspects of PTSD. This portion of the literature review will serve to confirm these findings, specifically through the provision of PSD dogs to veterans.

These service dogs provide veterans with the tools necessary to reintegrate and manage their PTSD diagnosis, with recent surveys reporting that 82 percent of individuals utilizing Psychiatric Service Dogs demonstrate a statistically significant reduction in symptoms (Love & Esnayra, 2009; Moore, 2013). The method of AAT promotes resilience against the symptoms of PTSD through the development of coping skills (Furst, 2016). Studies show that use of PSDs as a purpose-driven intervention facilitates psychological and social improvement in addition to increased functional independence (Knisely, Barker & Barker, 2012; Yount et al., 2013). Overall, PSDs reduce both the frequency and severity of PTSD symptoms (Moore, 2013).

Psychiatric Service Dogs in Action

Hyde's 2015 pilot study explored the utilization of specially trained Service Dogs (SvD) as a complementary treatment method for OIF/OEF/OND veterans who had previously received evidence-based treatments for their PTSD symptoms without success. The dogs were trained to perform tasks to relieve various physiological symptoms, with the veterans reporting effects via standardized PTSD assessment tools (Hyde, 2015). Once partnered, dog and veteran participated in exposure activities to experientially teach the veteran how to correctly utilize the service dog to mitigate their cognitive, physical and behavioral issues (Hyde, 2015). Results revealed four common themes in the veterans' reports: 1) that the dogs provided hope, 2) increased their tolerance for, and exposure to, triggering stimuli, 3) re-established structure in their life, and 4) increased socially responsible community engagement (Hyde, 2015). These findings indicate that

the use of highly trained service dogs as a complementary modality for modified evidence-based treatments may facilitate statistically significant improvements in a PTSD-diagnosed veteran's quality of life (Hyde, 2015).

Hyde's (2015) investigative study is one of many emerging studies that has found service dogs to be a successful supplementary treatment, each concluding that more extensive, rigorous research is needed to establish the modality's true potential in order to merit government consideration and funding. Another recent study conducted by McLaughlin (2013), which assessed the program Patriot Paws, highlighted similar themes in thee results, with veteran participants demonstrating statistically significant improvements only four weeks after partnership with a specialized PTSD service dog. Both pre- and post-tests were quantitative analysis designs using the SF-36v2 Survey (McLaughlin, 2013). McLaughlin's dissertation posed the following four research questions:

> 1. What effect does partnership with a service dog have on veterans' vitality (VT)? 2. What effect does partnership with a service dog have on veterans' social functioning (SF)? 3. What effect does partnership with a service dog have on veterans' role emotional health (RE)? 4. What effect does partnership with a service dog have on veterans' overall mental health (MH)? (p. 71)

It should be noted that, due to the determined unreliability of Veteran Three's report, his results were discounted prior to analysis. Of the four remaining veteran participants, 100 percent demonstrated a statistically significant increase in VT, 75 percent experienced a statistically significant increase in in the area of SF, 75 percent demonstrated a statistically significant increase in the category of RE, and 75 percent reported a statistically significant increase for the final area of MH (McLaughlin, 2013). Therefore, it can be said that, "almost without exception,

veterans who were partnered with a service dog for just four weeks demonstrated statistically significant gains" when responding to SF-36v2 questions (McLaughlin, 2013, p. 96).

Modified Therapy

Currently, clinicians across the United States are recommending service dogs as an adjunct to ongoing conventional treatments (Love & Esnayra, 2009). The use of PSDs presents the opportunity to effectively maximize results of conventional therapies (Kopicki, 2016). Kopicki (2016) explains that the dogs provide the veterans with support, structure and unconditional love, which may bolster the effects of the primary treatment. Jackson (2012) states that the presence of animals in a therapeutic setting often function as a catalyst for discussion between client and therapist, also assisting in making the therapeutic environment less threatening. Furst (2016) adds that involvement of dogs in treatment may enable veterans to better express their emotions, consequently building a stronger bond with their therapist. A 2015 study by Schramm, Hediger and Lang found that when service dogs are utilized during evidence-based group therapy, 100 percent of participants complete treatment and are reported to fully participate in meetings. This eliminates two of the most prominent faults in traditional VA-sanctioned therapies: lack of engagement and high dropout rates.

Benefits and Symptom Reduction

Immediate Physiological Effects

The presence of the dog alone can instantly reduce heart rate, blood pressure and anxiety levels, while improving cardiopulmonary pressure (Furst, 2016; Jackson, 2012). The calming effects of these service dogs can also be observed on a hormonal level, reducing cortisol levels and simultaneously increasing oxytocin and dopamine levels (Marston & Kopicki, 2015; Thodberg, 2017). It is crucial to note the implications of such hormone levels. For instance,

oxytocin is a stress-reducing hormone that directly facilitates alleviation of PTSD symptoms of fear, anxiety, hypervigilance, social isolation, interpersonal conflicts, aversive conditioning of social stimuli, physical pain and sleep disturbances (Marston & Kopicki, 2015). Yount et al. (2012) illustrated the importance of oxytocin, stating its role in decreasing a veteran's physiological responses to combat memories or triggering stimuli. Additionally, oxytocin has been found to improve veterans' ability to accurately identify the emotional state of those around them and the processing of positive social information, the reduction of reactions to false danger, as well as increasing the likelihood of seeking social support (Marston & Kopicki, 2015).

Social Benefits

Clinical recommendation of a PSD may be particularly helpful to the veteran population, who are at high risks for experiencing severe social isolation, since PSDs are known to provide an interpersonal relationship that effectively facilitates external social interaction (Wynn, 2015). Dogs act as a foundation for a veteran's social support system, acting as the initial member and easing them into other relationships by acting as a protective barrier to diffuse environmental and interpersonal relationship stressors (Thodberg, 2017). The dogs "expose their human companions to encounters with strangers, facilitate interaction among previously unacquainted persons, and help establish trust among the newly acquainted persons" (Jackson, 2012, p. 6).

Furthermore, service dogs address the issue of insecure attachment style, which is frequently a negative side effect of PTSD symptoms that deteriorate a veteran's social support system (Marston & Kopicki, 2015). Marston and Kopicki (2015) continue on to explain that, "attachment theory suggests that a service dog provides the veteran with a secure base effect. Therefore, if a service dog is capable of helping to repair a veteran's ability to form attachments, his or her overall quality of life would also likely improve as a result" (Marston & Kopicki,

2015, para. 10). These findings are consistent with other recent studies which all find that therapy dogs positively enhance the lives of their owners by simple actions such as touching the dog, having the dog do tricks by the veteran's command, or verbally confiding in the dog when too nervous to tell the therapist directly (Jackson, 2012). Service dogs also facilitate the development of vital skills such as increasing ability to display affect, impulse control, patience, assertiveness and emotional regulation (Yount, Olmert & Lee, 2012).

In an external manner, the dogs assist the veterans by forcing them to venture into public to walk the dog, visit a pet store or take them to the vet, and therefore increase their social interactions within their surrounding community (Kopicki, 2016). Studies show PSDs may positively impact a veteran's social status simply by their presence, since others are more likely to interact and communicate with them when an animal is present (Furst, 2016). After partnership with a PSD, "many veterans endorse re-engaging in life tasks that they previously could not do, such as work, school, and socializing with family and friends" (Kopicki, 2016, p. 13). In this way, use of AAT has been shown to increase the sense of belonging and purpose a veteran feels (Yount, Olmert & Lee, 2012). Jackson (2012) adds that this new sense of purpose a dog provides, and the feeling of responsibility to care for them, may actually have life-prolonging effects on a veteran suffering from PTSD.

McLaughlin (2013) notes that veterans will also often tell their concerns to their dogs when they feel no one else will listen. Veterans frequently view their dogs as the one who has their back, a type of "battle buddy" who will be with them through all the challenges they face (Kopicki, 2016). Additionally, the dogs provide an option to connect with another being that does not involve the pressures of connecting with humans while the veteran is still learning to

manage their symptoms and regain a sense of safety and confidence (Furst, 2016). Moorehead (2012) confirms this idea, noting that:

> AAT/A provides support to clients in a way that allows them to circumvent the strain inherent in the social norms of interaction...interaction is often characterized by superordination, subordination, conflict, and exchange. With pet therapy clients were able to avoid these aspects of human interaction, engaging in an experience that is more like Simmel's ideal type of interaction, one which is supportive, uncomplicated and joyful. For example, respondents stated that the clients perceived that with human interaction something would be expected of them. (p. 65)

Trauma negatively impacts a veteran's sense of safety and ability to develop trust, and due to the nature of combat trauma being caused by another human, veterans diagnosed with PTSD may find forging emotional bonds with others to be very difficult, and "even interacting with a therapist may trigger PTSD symptoms" (Furst, 2016, p. 52). This damage to a veteran's attachment ability, caused by combat PTSD, impacts how they view themselves and others, and frequently results in the impairment of, and even withdrawal from, their attachments to other humans (Marston & Kopicki, 2015). For this reason, a human-dog bond can become the essential stepping-stone to rebuilding a support system. Through partnership with a dog, veterans gain an independence and ability to manage their symptoms that gives them a sense of empowerment and lessens feelings of helplessness regarding their PTSD diagnosis (Furst, 2016, p. 52).

Use of Medication

Interactions with animals have been found to having a calming effect, reducing psychological stress and subsequently decreasing physiological signs such as blood pressure (Wynn, 2015). As a result, 40 percent of individuals partnered with a PSD experience a reduced

need for prescription medication (Kopicki, 2016; Love & Esnayra, 2009). Moore confirms this statistic in her 2013 study, stating the study's participants also experienced increased levels of independence and ability to manage their symptoms after receiving their PSD. This may be due to the PSD's ability to safely and effectively increase oxytocin levels and other vital anti-stress agents (Yount et al., 2013). This decreased dependence on medications to manage symptoms is important in its implications due to many medications having negative side effects that only further prevent a veteran from engaging in life tasks, such as drowsiness, insomnia, aberrant behavior, vomiting and restlessness (Hyde, 2015; Kopicki, 2016; Marston & Kopicki, 2015). Additionally, interactions with these animals reduce negative stress reactions as measured by serum cortisol and cardiac reactivity (Yount, Olmert & Lee, 2012). Yount and colleagues (2013) also declare that "the focus, intention, and nurturing social contact involved in shaping the behavior of young service dogs may be acting as a potent agonist of neurophysiological systems know to be dysregulated in PTSD" (p. 295).

Depressive Symptoms

In their 2012 study, Yount, Olmert and Lee outline additional therapeutic benefits, reporting that veterans who participate in the process of training their service dog experience decreases in negative behavioral and cognitive patterns such as decreased emotional numbness and depression. The presence of the animal elicits positive emotions that counter the emotional numbing a veteran may suffer due to PTSD (Thodberg, 2017). Service dogs cause mental stimulation and instill emotions of empathy, nurturance, and acceptance, and decrease a sense of loneliness (Kopicki, 2016). AAT reduces anxiety, increases self-esteem and alleviates depression (Glintberg & Hansen, 2017; Jackson, 2012). Individuals with depressive disorders who receive AAT also exhibit a decrease in feelings of anger (Furst, 2016; Kloep; 2016). In a recent 2016

study, results indicated that all participants experienced a statistically significant decrease in depressive and PTSD symptoms (Kloep, 2016). This decrease in negative cognitive patterns contributes to a veteran's ability to decrease their use of pain medication (Yount et al., 2012). Schram, Hediger and Lang (2015) cite reduction of depressive symptoms as being one of the most valuable outcomes of AAT due to its role in suicidal ideation. Therefore, the dogs also become a protective factor against suicide by minimizing feelings of isolation and depressive symptoms, giving the veteran a sense of purpose, and filling the need for interpersonal relationships (Kopicki, 2016).

Reduction of Stress

Service dogs are found to improve quality of life, increase social support, and assist in the management of stress (Kloep, 2016). Humans have healthier stress responses when with a companion animal such as a dog (Hyde, 2015). Service dogs help veterans to regulate their emotions and improve their distress tolerance (Furst, 2016; Kopicki, 2016). Dog owners have lower responses to mental stressors, demonstrating "decreased reactivity from physiological baseline when given a stressful mental task, decreased reactivity when a stressful physical condition was applied to them, and faster recovery times after stressful tasks" (Hyde, 2015, p. 31). Jackson (2012) explains, "the mere presence of the dog to [produces] calming effects" (p. 17). Decrease in stress levels may be attributed to the stress buffering effect that the human-animal bond produces (Yount et al., 2012). With such reductions in stress through increased feelings of safety, veterans also experience improved sleep (Kopicki, 2016; Yount et al., 2012).

Hypervigilance

Moore (2013) reports that after partnership with a PSD, many veterans experience a statistically significant decrease in hypervigilance due to their belief that the dog would keep

them safe and alert them to potential danger. This reduction of hypervigilance allows them to re-engage in life and be present in the moment (Moore, 2013). Furst (2016) explains that people understand dogs' superior senses possess the capability to recognize danger before a human being does, and because of this knowledge, humans have subconsciously learned to judge the safety of a situation by the outward reactions of dogs; a calm dog indicates a safe environment. Therefore, "Veterans can rely on the dog and have total trust; a dog not displaying fear or aggression indicates through body language that there is no danger. In this way, a dog is like the 'battle buddy' a soldier has while in combat" (Furst, 2016, p. 55). Conversely, a young dog's sensitivity to, and subsequent internalization of, their owner's emotional state challenges the veteran to overcome their tendency for startle reactions in order to convey leadership and positive feedback to their dog (Yount et al., 2013).

Dissociation and Grounding

Due to the severe nature of re-experiencing and inherent risk for dissociation, the presence of a dog can act as a visible, tangible focus point to ground the veteran in the present. (Glintberg & Hansen, 2017; Thodberg, 2017). The dog serves to change the context of the flashback, reminding the veteran that danger no longer exists (Yount et al., 2013). This is often the ideal form of grounding, because it employs multiple senses including touch, sight, sound and smell to interrupt the dissociative reaction (Kopicki, 2016). Actions such as petting the dog help to reorient the veteran to the present (Kopicki, 2016). Grounding itself becomes a vital coping mechanism for veterans in order for them to adequately manage their symptoms (Marston & Kopicki, 2015, para. 7).

Occupational Tasks

Many tasks dogs are trained to do pertain to the veteran's sense of safety. Furst (2016) states service dogs can even be trained to help veterans with night terrors by turning on a light to interrupt the nightmare and sitting with the veteran to re-establish a sense of security. They may also perform perimeter checks to secure a room when the veteran enters (Kopicki, 2016). Dogs can even be trained to nudge their owner when someone approaches unexpectedly, or block the stranger if they come too close to prevent the veteran from being startled (Marston & Kopicki, 2015). To manage PTSD-attributed memory impairment, service dogs can be taught to remind veterans to take their medication at certain times of day (Furst, 2016). These interventions serve to minimize the impact of PTSD symptoms by providing support necessary for coping with symptoms of impaired memory, fear, hypervigilance and fight-or-flight responses (Marston & Kopicki, 2015). Furst (2016) explains, "by not struggling with seemingly small everyday tasks, veterans can become more confident that they can participate in civilian life" (p. 55).

Advantages Over Conventional Therapies

Service dogs have been utilized by health professionals as a complementary therapy in conjunction with other modalities to treat various disorders including PTSD, panic disorder and dissociative disorders, and have found participants demonstrate statistically significant decreases in symptoms, as well as increases in positive behaviors (Newton, 2014). Furthermore, the application of PSDs has several advantages over its evidence-based therapeutic counterparts. First, service dogs are trained to address the unique needs of their particular veteran owner (Kopicki, 2016). This is especially crucial, since PTSD manifests itself differently in every individual, and no two veterans will exhibit an identical combination of symptoms (Kopicki, 2016, p. 12). This highlights a previously discussed shortcoming of EBTs, which are not

customized to fit each veteran's specific set of needs and symptoms (Kopicki, 2016). Additionally, Kopicki (2016) suggests that the ability of service dogs to provide immediate relief in instances such as night terrors, 24 hours per day, every day of the week, makes them an invaluable therapeutic resource where traditional EBTs fall short. Service dogs also provide a way to access mental health treatment while avoiding the stigma that is often the primary barrier to seeking treatment, because dogs can be viewed as pets who double as therapeutic partners to support the veterans as they learn to manage life after military service (Furst, 2016).

Collateral Benefits

As previously discussed, some service dog programs employ incarcerated individuals as trainers. This produces a collateral benefit of improved inmate behavior and psychological health (Furst, 2016). The first documented program to partner animals with incarcerated individuals was established in 1975, after a group of inmates who were known to be unresponsive and solitary "risked punishment and were able to coordinate their efforts to hide the bird and bring it scraps of food" (Furst, 2016, p. 54). When the formal program was implemented, the unit director found that inmates who participated needed 50 percent less medication, demonstrated dramatic decreases in violent behavior, and had zero suicide attempts, while the ward without pets experienced eight suicides during the same year (Lee, 1987).

Participants of recent programs have been shown to experience lower recidivism rates, statistically significant decreases in levels of depression and loneliness, and increased trust, self-esteem, self-control, patience, confidence, sense of responsibility, autonomy and pride of accomplishment (Furst, 2006). Such programs have been found to positively impact not only the inmate participants, but also their fellow inmates exposed to the dogs, family members, the administrative prison staff, and the surrounding community (Furst, 2016). These programs "can

improve social skills and assist with reintegration into the community by focusing on interpersonal and intrapersonal social effects. Statistically significant improvements have been found in the areas of social skills and social sensitivity, social competences with problem solving, and communication abilities" (Furst, 2006, p. 11). The programs are now recognized as powerful behavior modification tools, requiring participants to remain free of infractions (Furst, 2016).

Limitations of Canine-Assisted Therapy

Marston & Kopicki (2015) outline some of the concerns regarding AAT, including the VA's belief that it may potentially cause veterans to attribute improvements to the support of their dog instead of their own ability. The veteran "may attribute this change to the presence of the dog rather than his or her own ability to overcome the fear" (Marston & Kopicki, 2015, p. 6). Healthcare professionals must also be educated to fully understand the appropriate contexts for AAT, when it is beneficial, and when it is detrimental. If the intervention is not adequately researched, planned and implemented, the presence of the dog may cause unintended negative consequences, such as allergic reactions or an individual refusing to participate due to their fear of dogs (Thodberg, 2017). Another limitation lies within the process of assigning, assessing and documenting the partnership by healthcare professionals once the intervention reaches the implementation phase. Oftentimes, gaps in communication become problematic, or there is a need for increased collaboration among social work professionals, service dog providers, physicians and psychologists" (Thodberg, 2017).

There are also resource and research-attributed limitations that must be accounted for and applied to findings (Thodberg, 2017). The majority of data is qualitative; surveys, interviews, etc., and may also lack generalizability due to small sample sizes (Thodberg, 2017). Current gaps

in literature and research may be attributed to the recent increase of interest in the topic, and the exploratory nature of its examination. For this reason, despite the numerous emerging studies, there still remains a lack of empirical evidence (Moorehead, 2012), and therefore AAT requires more rigorous research to contextualize findings and confirm it as a viable, evidence-based treatment option (Barker & Wolen, 2008; Thodberg, 2017).

Ethical Considerations

Treatment and Expectations

As cited by Hyde (2015), a 2007 study by Wenthold and Savage addressed ethical concerns surrounding the use of service animals, speculating that the greatest issue may be the juxtaposition between the therapeutic needs of the handler and the welfare of the animal:

> Service Animals display behaviors often interpreted as caring and loving, but it must be remembered that they are not there by their own volition; they are trained and carefully monitored for any deviations from their trained behavior. They are subject to stresses in their environment and can be harmed or harm others if not properly managed and cared for. (Wenthold & Savage, 2007, p. 68)

Hyde (2015) goes on to explain that they then discussed the psychological and physical needs of the dog, expectations of the dog, workload, and duration of employment, and finally, issues with separation or death. Hyde (2015) recommends consistent leadership by the handler, reasonable task assignment within the given context and clear communication of these expectations. The dog must also be given time to relax, socialize, and play, as well as being observed by its handler for signs of stress (Hyde, 2015). Regarding retirement, each handler may make different decisions of whether to keep it as a pet in its retirement or obtain a new dog (Hyde, 2015).

Veteran-Dog Matching

Veteran-dog matching is another prominent concern in AAT, and must be taken seriously, since proper matching is essential to the safety and success of the intervention for both the veteran and the service dog (Moorehead, 2012). Methods such as interviewing may be employed to screen potential veteran candidates to determine if AAT would be a good treatment option (Moorehead, 2012). Newton (2014) notes that health professionals such as psychologists, psychiatrists, counselors and MDs should carefully consider referrals for a PSD, first assessing the particular client's needs and condition. Proper pre-intervention protocol ensures safe, effective PSD partnerships conducive to achieving the therapeutic goal (Moorehead, 2012). Therapists should educate themselves on both the benefits and drawbacks of owning a PSD, the training facilities available for selection, how each program trains its dogs, and the application process to assist them in assessing if AAT would fit the therapeutic needs of the client (Newton, 2014). If the intervention is deemed beneficial and appropriate, steps should be taken to promote its success. In order to maximize the therapeutic potential of AAT, veterans should always be referred to accredited programs known for good training and knowledgeable therapists to provide the veteran with guidance in setting achievable goals that meet their specific needs (Wynn, 2015). It is important for veterans to have a supportive and reliable environment while completing training with their service dog (Newton, 2014).

Discussion

This literature review served to explore the innovative development and implementation of PSDs, as well as seeking to confirm their efficacy as a complementary therapy to improve current conventional modalities. PSDs operate both preventatively, stopping veterans from prematurely dropping out of conventional treatments, and correctively, reducing existing

symptoms and promoting sustainable recovery (Kopicki, 2016; Moore, 2013). Sixty to eighty percent of returning veterans suffering from PTSD will not be able to recover through evidence-based treatments sanctioned by the VA (Marston & Kopicki, 2015). In contrast, more than 80 percent of veterans who are partnered with a PSD experience statistically significant reduction of PTSD symptoms and an improved quality of life (Marston & Kopicki, 2015). This may be attributed to PSDs unique ability to address all dimensions of PTSD, the physical, mental and emotional, simultaneously. PSDs act to mitigate physiological and psychological symptoms (Kopicki, 2016), while also functioning as social facilitators to prevent dangerous isolation, promoting the development of secure attachment style and vital skills such as emotional regulation and impulse control that will enable healthy interpersonal relationships (Marston and Kopicki, 2015; Yount et al.; Wynn, 2015). For this reason, clinicians across the nation are currently recommending service dogs as an adjunct to ongoing conventional treatments (Love & Esnayra, 2009). While the VA itself is responsible for the provision of government-funded veteran resources, non-profit organizations are now stepping in to assist clinicians and compensate for the lack of effort put toward AAT on behalf of the VA.

Conclusion

The clear consistency in supportive findings of PSD as an effective, safe CAM, suggests "this treatment modality should be investigated and subsequently made available to more veterans" (Marston & Kopicki, 2015, para. 16). It is the recommendation of this author that mental healthcare professionals should consider incorporation of PSDs into veteran therapy due to their ability to reduce symptoms of PTSD. They should also examine current levels of impact in order to maximize its potential, rather than seeking to prove or disprove it as a stand-alone therapy option. As Jackson (2012) states:

> Research demonstrates that animals play a significant role in human health and wellbeing. Animal companionship and AAT form relationships between humans and animals that provide physical, physiological, and psychological benefits. The benefits are so significant to human health that recent medical attention has been paid to the field of AAT. (p. 19)

As evidenced by such research, Psychiatric Service Dogs should be considered a valid option of Animal-Assisted Therapy as a complementary intervention for conventional evidence-based therapies. This modality of therapy offers benefits that its traditional, more conventional counterparts lack. While the use of service dogs necessitates further research to confirm efficacy and explore the extent of its potential to develop into an evidence-based practice (Jackson, 2012), current findings are sufficient for its appropriate referral and use as a CAM therapy in conjunction with EBTs. Furst (2016) points out that, "although the number of randomized experimental studies examining AAIs is not large, a small collection of high-quality, well designed research exists and consistently reports positive results regarding treatment effects" (Furst, 2016, p. 52).

The findings presented in this literature review, evidence of the promising potential for recovery that PSDs offer, must not be forgotten. It is unacceptable for such statistics to be ignored due to political influences, when there is currently such a deficit in effective care. The speculation that traditional conceptualizations and implementation of therapies fail to address the unique and complex medical needs of veterans may be solved by the integration of PSD to develop modified, more customizable modalities of therapy. Therefore, it is essential that innovative treatments such as PSD are seriously considered and further examined for their potential as a future evidence-based treatment to aid the recovery of those who do not respond to

current therapies (Monson & Friedman, 2006). In conclusion, while this method of therapy offers benefits that its traditional, evidence-based counterparts do not, it does necessitate further research to confirm its efficacy and determine the extent of its potential for development into an evidence-based practice. For this reason the VA should seek to partner with the non-profit sector, utilizing the resources and opportunities of their existing PSD programs, to conduct research that will enable the possible establishment of PSDs as an evidence-based therapy.

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Appendix

List of Acronyms and Abbreviations

AAA	Animal-Assisted Activity
AAT	Animal-Assisted Therapy
APA	American Psychiatric Association
CAM	Complementary and Alternative Medicine
CBT	Cognitive Behavioral Therapy
CPT	Cognitive Processing Therapy
EBT	Evidence-Based Therapy
EMDR	Eye Movement Desensitization Therapy
DMDC	Defense Manpower Data Center
DoD	Department of Defense
DSM-5	Diagnostic and Statistical Manual of Mental Disorders (5th ed.)
IOM	Institute of Medicine
OND	Operation New Dream
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PAP	Prison-Based Animal Program
PET	Prolonged Exposure Therapy
PTSD	Posttraumatic Stress Disorder
PSD	Psychiatric Service Dog
SvD	Service Dog
TF-CBT	Trauma-Focused Cognitive Behavioral Therapy
VA	Veterans Affairs
VAMC	Veterans Affairs Medical Center
VHA	Veteran Health Administration